Informality as a Planning Strategy

Collaborative Water Management in the CALFED Bay-Delta Program

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In 1994 an unusual, if not unique, collaborative effort emerged to manage the highly contested and interconnected system of waters, levees, and habitat in the San Francisco Bay Estuary and Sacramento–San Joaquin Delta. This CALFED Bay-Delta Program (CALFED) engaged 25 federal and state agencies and representatives of 35 major stakeholder groups and local agencies in a joint search for solutions to Bay-Delta problems. It changed how water was managed and produced new practices that persisted until at least 2005. CALFED's collaborative approach is by nature informal, and it coexists uneasily with the norms and structure of formal government. This story illustrates how formal and informal systems are interdependent, yet in tension, across planning, participation, and decision making. Because planners often operate in the interface between the formal and the informal, the story offers lessons that can be applied at many levels of government and for many planning tasks.

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Water is perhaps the most deeply contested and economically important issue in California. With rain occurring in only six months of the year, and most of the water stored in the snowpack of the northern Sierra Nevada, a vast infrastructure of dams, channels, levees, and pumping facilities is required to move water to urban populations and the state's massive agricultural industry. At the center of this water system is the Sacramento–San Joaquin Delta, including the San Francisco Bay Estuary (hereafter the Bay-Delta), which funnels Sierra water to more than 22 million people through a maze of marshes, islands, and sloughs the size of Rhode Island (see Figure 1). This ecosystem nurtures half the birds using the Pacific flyway and 80% of the state's commercial fisheries. A thousand miles of poorly built and aging levees protect the Bay-Delta farmland, residents and businesses, as well as the city of Sacramento, from flooding. The Bay-Delta and California's major rivers and marshes are home to a variety of endangered species and a multitude of other wildlife (Figure 2). To complicate matters further, the state has a bewildering array of overlapping and competing water rights laws, water contracts, and informal water use practices.

Not surprisingly in this context, a wide variety of federal and state agencies and other stakeholders[1] has been at odds for decades. Public agencies have diverse and conflicting mandates, with regulatory agencies attempting to protect wildlife or water quality, and operating agencies shipping water to urban or farm users in accord with longstanding contracts. Well-organized stakeholder groups routinely battled one another. Environmental groups brought lawsuits against decisions. Farmers in the arid Central Valley, who depended on irrigation, found that their need for a reliable supply of water pitted them against fish-protection interests. Because of California's growth, with its sprawling development and water-hungry lawns, urban water providers in the drier southern part of the state fought for an ever growing share of Delta water.[2] Some stakeholders went to legislators to get laws passed to build dams, while others adamantly opposed them and threatened lawsuits. Capital, income, and ways of life were at stake. North was pitted against south and interest against interest in paralyzing "water wars" dating back to the early 20th century.

In 1994 an unusual, if not unique, collaborative effort emerged to plan and manage the Bay-Delta waters. The CALFED Bay-Delta Program (hereafter CALFED) largely ended the water wars (though skirmishes continue), developed

Figure 1. The watershed of the Bay-Delta drains much of California.

Source: Reprinted with permission from Hudzik, 2003.

innovative practices, and produced significant outcomes. It engaged 25 federal and state agencies in a joint search for solutions to Bay-Delta problems and for ways to improve the water system for all users. Moreover, some 35 major stakeholder organizations played significant roles in the daily work of CALFED. This was largely an informal, ad hoc arrangement, neither set up by legislation nor closely supervised or directed by higher authority. CALFED was the shadow system (Stacey, 1996) that could make agreements and instigate action that had not emerged during decades of formal decision making.

We looked at CALFED because it was a mature example of a large-scale, collaborative effort to manage a far-flung resource subject to multiple jurisdictions. It is worth reporting on for its own sake, but we thought that an in-depth understanding of the workings of this program could provide insights, or even a model, for other complex resource management efforts. We were also interested in

Figure 2. Egrets in Suisun Marsh, which plays a major role in the Bay-Delta ecosystem.

Source: Photo courtesy of the CALFED Bay-Delta Program.

exploring how stakeholders were able to participate in governance in a substantive and constructive way, as they appeared to be doing. As we delved more deeply, we found that this example also offered the chance to learn about strategies for using informal, collaborative approaches in the context of formal government.[3]

In this article, we argue that CALFED's collaboration is by nature informal and ad hoc. As such it coexists uneasily with the norms and structure of formal government. The story illustrates the ways that the formal and informal systems are interdependent, yet in tension. Much was accomplished through CALFED's informal systems, yet the formal system retained the funding, the legal authority, and the prerogative to intervene, provide approval, or simply allow the program to continue. CALFED has found creative ways to manage some tensions. It continues to be a work-in-progress, and it is currently going through a major transition.

We begin with definitions of key concepts, including formal government, informality, and collaboration. We offer a classic comparison of mechanistic versus organic systems of management to provide a way of understanding the tensions that emerge across the systems. We then tell the CALFED story, beginning with its origins and organization, and outline some of its innovative activities. We explore the tensions that arose between the requirements of formal government and the informal processes in CALFED and the ways that some of these were addressed. Finally we look at lessons this story can offer for planning and planners.

Key Concepts

Formal Government

By *formal government* we refer to a set of ideas and practices that are dominant in U.S. political theory and in civics texts. We use this term to describe an ideal type[4] which we believe shapes much thinking in the United States about the proper way to conduct the public's business. In the ideal type of formal government, a legislature makes

laws and an executive implements them through special-purpose bureaucracies. These agencies are accountable to the executive, who is accountable to the legislature, which is in turn accountable to the public. Courts act as arbiters of contested agency decisions and a constitutional check on legislatures. The public's role is confined to electing public officials or commenting in public hearings or official comment periods.

Substantial literatures in political science and sociology articulate aspects of this ideal type (Dahl, 1961; Truman, 1951; Wilson, 1989). Sociologists have paid particular attention to bureaucracy, starting with Max Weber, who defined ideal type characteristics of bureaucracy including detailed specification of job duties and scope of authority; a system of supervision and subordination; reliance on written documents; and a system of rules for procedure (Gerth & Mills, 1958, ch. VIII; Weber, 1947). The contemporary bureaucratic paradigm includes the concepts that

> specific delegations of authority define each role in the executive branch; that officials carrying out any given role should act only when expressly permitted to do so either by rule or by instructions given by superior authorities in the chain of command; and that in exercising authority, officials should apply rules and procedures in a uniform manner. . . . (Barzelay, 1992, p. 5)

Despite much research showing the more complex and messy reality, basic concepts of formal hierarchy, central control, and uniformity of rules persist as "deeply ingrained habits of thought" (Barzelay, 1992, p. 5).[5]

Informality

Informality is unregulated behavior (Portes, Castells, & Benton, 1989). It may be illegal, like squatter settlements or the hiring of undocumented workers, but it also includes actions and communications that are neither prescribed nor proscribed by any rules. The idea of informality also connotes casual and spontaneous interactions and personal affective ties among participants. Morand (1995) contrasts formalistic interaction orders (or behavioral practices in formal organizational systems) with informalistic interaction orders to demonstrate how each system works and what its consequences are. (See Table 1). The formalistic approach produces routinization of interaction, procedural fairness, and detachment, while the informalistic order produces creativity and a free flow of information, affective involvement, and relative chaos.

It has long been recognized by scholars that formality and informality coexist in agencies to varying degrees (Roethlisberger & Dickson, 1939), though this reality is usually officially ignored. Informal planning activities have been noted by scholars in a wide variety of contexts. Research on policy implementation demonstrated that informality was central, showing, for example, how programs developed by Congress involved unanticipated and unauthorized changes in local implementation (Pressman & Wildavsky, 1973), or how policies may only get implemented because of a "fixer" (Bardach, 1977). Informality was an important part of the Tennessee Valley Authority's successes (Selznick, 1966) and, according to Blau (1963), of government bureaucracies more generally. Street-level bureaucrats, who interact with clients, allocate resources in ways not defined in the rule book (Lipsky, 1980). In interagency collaboration, informality may be the order of the day. Bardach (1998) noted that "an informal and highly subjective set of working relationships across organizational boundaries may operate effectively without any formal or objective recognition at all" (p. 22).

Though informal systems are pervasive in government, they remain comparatively little documented and largely invisible to observers (Freeman & Farber, 2005). Sometimes, however, informal processes may be deliberately created to make the formal ones work, as for example when two state growth management programs invented collaborative processes to make the court-based, adversarial system produce more satisfactory land use outcomes in Vermont and to supplement the top-down bureaucratic approach in Florida (Innes, 1992).

Collaboration

Collaboration literally means to co-labor, to work jointly with others. It includes "cooperating with an agency or instrumentality with which one is not immediately connected" (Merriam-Webster's 11th Collegiate Dictionary, 2003). Collaboration is increasingly being used to address

Table 1. Comparison of formalistic and informalistic interaction orders.

Formalistic interaction orders	• Ratification of authority • Routinization of interaction • Social and emotional detachment • Procedural fairness • Status differentiation
Informalistic interaction orders	• Free flow of information • Creativity • Familiarity and affective involvement • Relative chaos • Status leveling

Source: Adapted from Morand (1995, p. 843).

complex resource and ecosystem management issues (Brunner, Colburn, Cromley, Klein, & Olson, 2002; Karkkainen, 2001/2002; Margerum, 1999; Scholz & Stiftel, 2005; Thomas, 2003; Wondolleck & Yaffee, 2000), for service delivery (Bardach, 1998), and for strategic planning and development (Healey, 2006). The literature suggests that this trend is due to such factors as growth in cultural diversity resulting from globalization; rapid technological change and increasing complexity, both of which create uncertainty; increased awareness of interdependence among players; and the need to find new ways to build trust in the face of these changes (Booher, forthcoming).

Both theory and practice suggest that collaboration needs to meet certain process conditions if it is to produce high-quality outcomes. It must focus on a practical shared task; include all interests; be self-organizing rather than externally controlled; use high-quality, agreed-upon information from many sources; engage in productive dialogue; encourage creative thinking and challenges to the status quo; and make decisions only when there is overwhelming support (Innes & Booher, 1999). We have argued and others have demonstrated (Connick & Innes, 2003; Healey, 1999; Mandanaro, 2005) that under these conditions collaboration can end stalemate, produce new ideas, create social and political capital (Gruber, 1994; Innes, Gruber, Neuman, & Thompson, 1994), and set in motion cascades of changes in attitudes, behaviors, actions, practices, and institutions. Best practices in negotiation and consensus building apply parallel criteria and build on principles of interest-based negotiation, which allow the creation of mutual gain solutions as players identify new options possible only through cooperation (Susskind, McKearnan, & Thomas-Larmer, 1999). It should be noted that these forms of collaboration differ fundamentally from the logrolling and tradeoffs typically in use in legislative process.

Collaborative processes meeting these conditions are by nature informal because they establish their own missions, agendas, and tasks, and over time they build personal relationships and trust, typically along with personal commitment to results. If the collaboration cuts across agencies it usually involves informal interactions, as the spaces between agencies are normally unregulated. Indeed an informalistic interaction order as outlined in Table 1 is key to successful collaboration, as it allows for creativity, is characterized by free flows of information, and is not hampered by status differences. Collaboration is useful when a formal bureaucracy, with its routinization, social detachment, and hierarchical authority, cannot solve a problem or address changing conditions. Thus bureaucracies sometimes sponsor collaborative processes, but must allow them to proceed informally if they are to be successful.

Mechanistic versus Organic Management

The contrast between the concepts and practices of formal government and those of an informal, collaborative approach can be usefully seen through the lens of mechanistic and organic systems of management, as articulated in the classic study, *The Management of Innovation.* It contends that mechanistic management (largely equivalent to a formalistic interaction order) is suitable for stable conditions, and organic management (largely equivalent to an informalistic interaction order) is "appropriate to changing conditions, which give rise constantly to fresh problems and unforeseen requirements for action which cannot be broken down or distributed automatically arising from the functional roles defined within a hierarchic structure" (Burns & Stalker, 1961, p. 121). Table 2 outlines these differences.

Formal bureaucracy focuses on making and applying rules or designing programs that are abstract in the sense that they are designed to work for many situations. An organic process like collaboration focuses on tasks that are realistic in the sense that they are about specific problems in particular places. Collaboration works through a network rather than a hierarchy. In mechanistic management, superiors assign roles, each of which entails detailed rights and obligations. In an organic approach, participants share responsibility for the larger task, and specific activities develop as they interact and learn and as conditions evolve. Agencies operating under the mechanistic model typically rely on internal experts or hired consultants, whereas in a collaborative process like CALFED many types of knowledge and experience play significant roles. Communication in informal collaborative processes is less about superiors providing instructions to subordinates than about sharing information and advice laterally and among all levels. Before CALFED, we were told, communications from a midlevel person in one agency to someone in another agency had to be sent up the chain of command to the agency director, who might then forward it to the other agency director, who might then pass it down to the appropriate recipient. After CALFED, these people could talk directly to each other. The mechanistic approach assumes that the boss is competent to sort through information and make appropriate decisions. He or she is by definition accountable. In CALFED's organic approach, knowledge was spread throughout the network, and the center of communication was wherever the knowledge of a particular task was located, often in informal task groups. Finally, in the mechanistic model participants most value loyalty to superiors and to the agency, whereas in the organic system participants value first and foremost the shared purposes.

Table 2. Comparison of mechanistic and organic management systems.

Mechanistic management systems	Organic management systems
The focus is on abstract tasks and improvement of means rather than ends.	The focus is on realistic tasks.
The structure of control, authority, and communication is hierarchic.	There is a network structure of control, authority, and communication.
A precise definition of rights, obligations, and technical methods is attached to each functional role.	Individual responsibility is not limited to a specified field of rights and obligations.
Operations and working behavior are governed by instructions and decisions issued by superiors.	Members adjust and continually redefine individual tasks through interaction with others.
Greater importance is given to internal knowledge than to general knowledge, experience, and skill.	Special knowledge and experience are valued as contributing to the common task.
Communication involves instructions and decisions from superior to subordinate.	Communication consists largely in information, advice, and consultation. It takes place among people of various ranks.
Loyalty to the agency and obedience to superiors are most valued.	Commitment to ends and tasks are most valued.
The head of the organization reconciles tasks and assesses their relevance, implying this person's omniscience.	Knowledge about the task may be located anywhere in the network, which then becomes the ad hoc center of control, authority, and communication.

Source: Adapted from Burns and Stalker (1961, pp. 119–122).

CALFED: A New Approach to Water Management[6]

CALFED emerged in part as a result of a series of formal and informal dialogues that had been underway for at least the prior decade including the Three-Way process among agricultural, urban, and environmental stakeholders; the Bay-Delta Oversight Council and the Water Policy Council set up by the governor; ClubFed, made up of relevant federal agencies; and the San Francisco Estuary Project (Innes & Connick, 1999). These dialogues included leadership of most of the interests and agencies. By 1994, participants had learned about the major issues, built social capital, and come to agree that it was in all their interests to have a healthy Delta with good water quality. Although they could not agree on what actions would make the system sustainable (Reike 1996, p. 342), they had built working relationships and mutual understanding.

Another part of the answer is that a series of events in the early 1990s dramatically increased the stakes for all concerned. The Estuary Project in 1992 (Innes and Connick, 1999) recommended a salinity transition zone as the criterion for assuring biodiversity. The idea was that water flows should be managed so that the area of mixing between saline and fresh water in the Bay-Delta would occur in a location that would produce optimal biodiversity. The federal government adopted this concept in its regulatory strategy. However, the state did not agree because doing so could require it to release more water into the Delta and reduce the water available for cities and agriculture. The long-term decline of indigenous fish species was growing worse due to a major drought. There had also been increases in diversions of Delta water for urban and agricultural use. Because of the decline of endangered fish there was increasing risk that the courts would step in and restrict water exports to cities and farms. The potential for an unreliable supply of water and the political gridlock over virtually any proposal led Standard & Poor's to threaten to downgrade the state's bond rating. In response the business community across the state took a major role in pushing for a collaborative approach. At this point, federal and state leaders realized they needed to work together. Leadership was important in getting CALFED into action. Key stakeholders from all the interests got out in front of their more reluctant constituencies to tell them they needed to collaborate. State and federal agency leaders played a significant role in getting the process started, though it was to take on a life of its own.

Organization

In the summer of 1994, federal and state officials, flanked by stakeholders, announced joint state-federal Principles of Agreement to protect Bay-Delta natural resources and provide reliable water supplies. At the same

time the U.S. Environmental Protection Agency (EPA) adopted new and more stringent water quality standards, which it committed to withdrawing as soon as the State Water Resources Control Board adopted a new water quality plan consistent with the agreement. In December, 10 state and federal agencies signed a memorandum of understanding, in which they agreed to jointly address: (1) substantive and procedural aspects of water quality standard-setting; (2) improved coordination of water supply operations with endangered species protection and water quality standard compliance; and (3) development of a long-term solution to fish and wildlife, water supply reliability, flood control, and water quality problems in the Bay-Delta.[7] This memorandum laid the foundation for the CALFED program, and came to be known as the Bay-Delta Accord.

The Accord did not specify how the work would be done, nor did it lay out lines of authority. The U.S. Secretary of the Interior and the governor had titular responsibility,[8] but the lead agencies did not assign tasks or establish procedures. Rather they allowed CALFED participants to organize themselves. The CALFED program was not designed a priori; rather it developed as it tackled each of its goals and as participants learned along the way. The cartoon in Figure 3 captures the experience stakeholders in collaborative processes often describe of building a plane while they are flying it. Bardach (1998) offers a similar analogy.[9]

CALFED membership eventually expanded to 25 state and federal agencies with diverse and conflicting mandates. These included the U.S. Bureau of Reclamation and the state Department of Water Resources (DWR), which owned and operated dams and canals and had responsibility for distributing much of the water through the federal and state water projects; the State Water Resources Control Board (SWRCB), which is responsible for water quality; several state and federal agencies that protect fish and wildlife; and the Army Corps of Engineers, which is responsible for alterations to waterways. They came together, motivated in part by internal organizational needs, such as ensuring the agency's ability to put its appropriations to good use and securing the support of their constituencies and the legislature. Their differing missions had created the problem, but their interdependence and varied interests, resources, and power created a negotiating space.

CALFED was led at the outset by its Policy Group, composed of heads of state agencies and high-level officials from federal agencies. This group met regularly, presided over by an executive director answerable to the group. High-level participation was critical because it meant the Policy Group could make decisions and commitments. Initially closed to the public,[10] the meetings' informality provided the opportunity for agency directors to get to know one another and understand each other's perspectives, worries, and objectives. Participants freely exchanged jokes and comments, loosening tensions and building personal relationships. They also built shared understanding of water management issues. Discussion was free-ranging, and decision making collaborative. The Management Team, made up of deputy directors, turned the decisions into action. When the meetings were opened to the public[11] in 2001, they became more formal, and much of the spontaneity and camaraderie disappeared.

CALFED provided for formal public involvement in the early years through its Bay-Delta Advisory Council (BDAC), made up of stakeholders drawn from agriculture, environment, business, tribal, and other interests. BDAC was not a collaborative task- and consensus-oriented process, but a formal board with presentations by staff and formal statements by members and attended by members of the public. It did not do problem solving and seldom reached agreements. It ended up as primarily a forum for the Policy Group to get feedback on proposals. As one staff member told us, it was useful to gauge the likely zone of agreement and vet proposals to find out if participants were in the range of a deal.

The structure of the CALFED process is roughly depicted in Figure 4. It should be noted that the lines on the chart are nominal relationships, rather than reporting lines or definitive flows of authority and communication. BDAC often simply passed along recommendations from its more informal work groups. CALFED staff played a key informal role in keeping the communication flowing continuously through the network.

CALFED used formal appropriations from the state and federal government, but it also obtained support more informally. During the first few years most of its staff were loaned by the participating agencies. In addition, stakeholders took the initiative to go to voters and get three bond issues passed, amounting to over three billion dollars. Much of this funding went to support ecosystem restoration and other CALFED activities.

What CALFED Did

CALFED participants set out to develop a plan to address the four major tasks laid out in the Accord. In Phase 1, they began scoping and goal-setting on many fronts simultaneously, including ecosystem restoration, levee improvement, water storage, operations of such water facilities as pumping systems, watershed improvement activities, and fisheries protection. In Phase 2, they began preparation of an EIR/EIS (combined state-required Environmental Impact Review and federally required Environmental

Impact Statement) while they continued planning. The EIR/EIS covered all the main elements of the program, so that as projects emerged later they would require only more limited reviews.

Much of CALFED's work was done by small committees made up of representatives of participating agencies and stakeholders and supported by CALFED staff. They met most conditions required for quality collaboration, though the committees did not have professional facilitation, but depended for this on the varying skills of their chairs. Committees had diverse membership, representing the major interests relevant to their particular task. Members were selected because of their expertise and to assure appropriate diversity. CALFED staff played a major role in the selection process, though others participated, including stakeholders and agency staff. The committees engaged in informal, collaborative dialogues, bringing their own knowledge to bear, along with formal knowledge produced by CALFED staff and consultants. They followed their own agendas, exploring and developing ideas, and finding creative solutions. Not all were successful, as some broke down into conflict. However these working groups created many of the programs and strategies that have carried forward to today, including the watershed and ecosystem restoration programs.

Delta Operations

A notable example of CALFED's collaborative successes was a novel informal system to manage Delta water operations on a real-time basis. Four interlinked, diverse

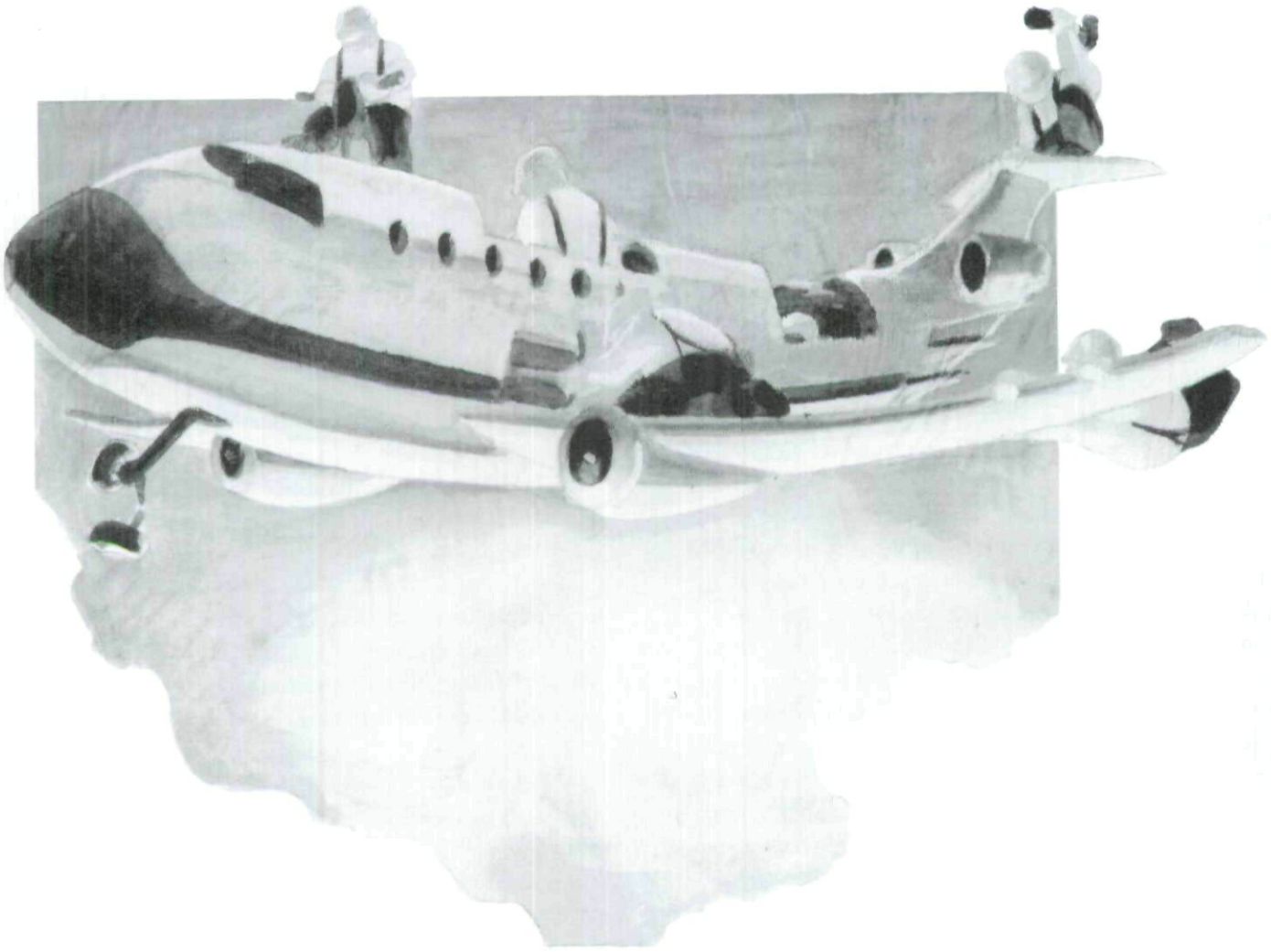

Figure 3. Participants in collaborative processes often describe the effort as building a plane on the fly.

Source: Drawing by Sam Lavanaway. Published with permission.

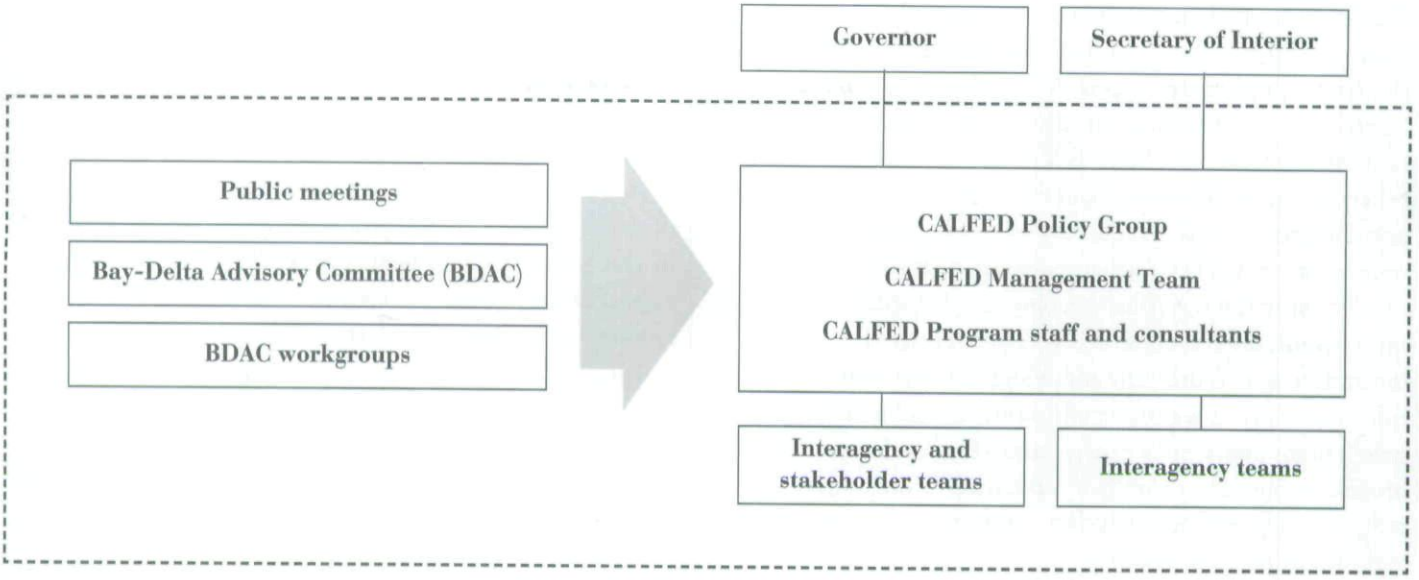

Figure 4. CALFED program structure prior to 2003.

task groups developed this system: one group coordinated operations of the water projects, another evaluated water supply alternatives, a third looked at the effects of water diversions on fisheries, and a fourth was a coordinating team made up of members of the other groups. Members of these groups provided indicators about fish or water levels, which they monitored in their areas. They met by conference call when conditions required, and worked together to analyze the implications of the data. They thus were able to respond quickly in a way the formal system could not because of the procedural demands of rule making and hierarchical decisions. They also forestalled the potential for lawsuits because all the stakeholders had reached agreement before action was taken.

Task groups' recommendations were frequently followed. "At times the stakeholders all but supplanted the [CALFED] agencies," according to Freeman and Farber (2005, p. 852), offering the example of the water quality plan. The responsible agencies "were preoccupied with their narrow statutory mandates, which focus on only a small part of the larger water quality problem. 'No one had assumed responsibility,' [according to Patrick Wright, CALFED executive director until 2005], 'for how to protect water quality from source to tap in an estuarine system'" (p. 852). The Drinking Water Subcommittee emerged to fill this void, "developing an innovative strategy to set ambient water quality targets as either traditional concentration limits or in a manner that would achieve an equivalent level of public health" (p. 852).

The Environmental Water Account (EWA)

The most compelling example of CALFED's informal planning process is the Environmental Water Account (EWA).[12] It was born in 2000 in dialogues in the four task groups described above, as they struggled with ways to manage water that would serve all needs. One of EWA's original architects explains the concept:

> EWA creates a water supply for fishery needs without relying on regulatory edicts. Instead, its operators . . . acquire water for the environment from existing water-right holders or from maximizing the use of water project facilities. With this water supply at their disposal, water project operators can make timely, critical adjustments in operations to make water available to fulfill the needs of listed species and project contractors while preventing reductions in deliveries due to such adjustments. . . .
>
> EWA . . . [works] better than fixed prescriptive standards that restrict water project operations for the benefit of several particular listed species. Such an account can share the benefits of wet hydrology and new facilities, allowing both the ecosystem and water users to enjoy improved conditions. (Brandt, 2002, pp. 427–428)

The formal management approach involved setting seasonal restrictions on pumping on the basis of biological opinion as required by the Endangered Species Act. Under

this regime, only when project operations killed more fish than allowed by official fish take limits could fishery agencies seek pumping reductions. At that late stage, the required reductions were often substantial, as well as too late to prevent excess take. With EWA water as collateral, the fishery agencies can instead call for early and moderate pumping reductions, which are less problematic for other water users. EWA is anticipatory rather than solely reactive.

Running the EWA has become one of CALFED's most important activities. It involves extensive data gathering and relies on computer modeling of water flows and fish impacts. It uses gaming and simulations involving stakeholders and agency experts to develop and improve the models, as well as to anticipate scenarios. Stakeholders as well as agency staff question data and bring new information and insight into the process.

The EWA has had considerable success, according to the independent review panel set up by CALFED (Environmental Water Account Review Panel, 2005). It has assured a reliable supply of water to those who have contracted for it, while providing a level of fish protection likely higher than could have been attained by fixed standards. It got agencies and stakeholders to work together instead of feuding over water diversions. Wildlife management and water operations agencies came to understand each other's needs and perspectives. Despite its technical and political complexity, the process functioned smoothly. The ability to make timely, reasonable decisions in the presence of scientific uncertainty became a hallmark of EWA, which the review panel found had advanced scientific knowledge and improved water models. The gaming and modeling process also identified unanticipated consequences of proposed actions and allowed rapid management response. The EWA moved water managers away from relying on a single indicator (usually fish take at the pump, a simple measure suited to a formal regulatory approach) to looking at multiple, interrelated dynamics of the fish populations.

Record of Decision

In 1994, CALFED had the support of both the federal and state leadership. But by 2000 participants had begun to worry that the progress they had made in developing agreements might be lost with the upcoming change in the federal administration. They rushed to memorialize their agreements by preparing a document laying out broadly the types of actions they proposed in each of the 12 CALFED program areas (CALFED Bay-Delta Program, 2000). CALFED's informality and lack of predefined procedures presented a problem, however, for creating a document that would carry weight and legitimacy. The problem was complicated by the reality that much remained to be worked out.

The solution was a novel one, emblematic of CALFED's creative blending of formal and informal management. CALFED had been working on developing strategies and actions concurrently with the development of the EIR/EIS. The group decided it would use the Record of Decision (ROD), which is normally provided at the end of an EIR process, to document the reasoning they had applied in choosing the preferred alternative. The ROD was their plan, though it differed significantly from most formal plans. It laid out important goals and tasks, but it was basically an agreement about heuristics for continuing to work together on these rather than a vision or a blueprint. Freeman and Farber (2005) contend that

> The document is remarkable not only for being so broad in scope but for approaching implementation in such an integrated fashion. This may be the ROD's greatest innovation—transforming how decisions about the Delta are to be made in the future. . . . [I]nstead of acting independently on their own priorities and timelines [agencies] were committed to jointly coordinating their regulatory, permitting, planning and funding decisions. (pp. 853–854)

Outcomes

CALFED has had a variety of outcomes, including: the building of social and political capital among warring parties; the development of shared understandings of the problems along with an agreed-on set of information; an end to the stalemate that had dogged water management for so long; high-quality agreements that were widely acceptable as well as practical; learning and change that spread beyond formal agreements and original stakeholders; and new ways of thinking about problems, along with genuine innovations such as EWA. Ultimately CALFED built a set of practices and institutional arrangements that were more flexible than in the past and that engaged a wide range of players in their network (Booher & Innes, 2006; Connick & Innes, 2003; Innes, Connick, Kaplan, & Booher, 2006). Freeman and Farber (2005) contend that CALFED forced "participants to adopt a more comprehensive view," arguing that "the operative question for at least some participants shifted from 'what are we alone entitled to take from this water resource?' to 'What do we need the Bay-Delta to provide for us collectively?'" (p. 868). They say that it is

> not that CALFED led participants to abandon long-held interests but rather it broadened the basis of discussion and forced stakeholders and agencies . . .

> to take seriously the perspectives of others. . . . At a minimum, it led for the first time to integrated and coordinated planning. (p. 868)

CALFED in Transition

By 2003, a series of events and circumstances began to unravel pieces of CALFED's coordinated approach. A stakeholder committee, unable to identify "assurances" to guarantee implementation, had concluded several years earlier that a formal governance structure was necessary to keep the agencies' "feet to the fire." The Policy Group was at first cool to the concept, contending that creation of another entity would not improve interagency coordination. Some predicted that legislators would be reluctant to fund a new entity. Stakeholders, however, contended that for accountability and coordination, a formal authority was the only solution. In 2003, after extended negotiations, the legislature established the California Bay-Delta Authority (CBDA) as an oversight body combining public members, key agency directors, and, ex officio, legislators. Its design was more political than practical, as few of its members were knowledgeable about the workings of California water. The Policy Group ceased to meet. Though the original demand was for an agency with authority, ironically CBDA was given none. CBDA was a formal board which heard presentations, asked questions and made suggestions. The name CALFED continued to be used to refer to the program of activities.

Setting up CBDA had unanticipated counterproductive consequences. According to CALFED staff, preparing for formal presentations to the Board drained agency attention and energies away from the coordination and joint planning they had been doing. Without the glue of the informal relations and commitment to a shared task of the Policy Group, it was easier for agencies to work independently, pulling some of their funding out of a joint grants program, for example. The Bush administration did not provide the financial support or personal leadership that the previous federal administration had. Indeed, it was quite the reverse. A key CALFED partner, the federal Bureau of Reclamation, set in motion a plan to export more water to farmers and southern water users without notifying or consulting CBDA. The U.S. National Oceanographic and Atmospheric Administration reportedly prepared a biological opinion saying such exports would be harmful to endangered fisheries, but then reversed this opinion, reportedly at the instruction of the U.S. Interior Department. In 2005, a state court of appeals ruled that water managers had to balance the needs of water users with those of the environment. CBDA had clearly been unable to implement this purpose of the ROD.

Other factors contributed to stress on CALFED. The long-term decline in the Delta food web and in the endangered Delta smelt surfaced in the media in 2004. Legislators were uncertain about whether CALFED should have been able to head off this crisis. Increasingly, criticisms of CALFED showed up in news stories. Meanwhile the worst effects of the drought at the beginning of the decade had cleared up, so the incentives to work cooperatively had declined. Critics began to clamor for leadership from a governor who had given little attention to CALFED. Funding from the bond issues was drying up, and the state legislature was only supplying year-to-year funding. High-level staff began to leave.

Since mid-2005, a flurry of activities has been directed toward reinventing CALFED. Legislative criticism and threats to withhold funding spurred the governor to ask the state's Little Hoover Commission to review CALFED governance. The Commission's report (Little Hoover Commission, 2005) supported CALFED's original collaborative process. It proposed disbanding the CBDA and restoring the Policy Group. CALFED prepared its own plan, with a similar recommendation (California Bay-Delta Program, 2006). CALFED functions have officially been moved to the state DWR, now headed by CALFED's first executive director. It remains to be seen how much of CALFED will survive or how it may be reinvented. Will it be absorbed into the formal system of the old line DWR bureaucracy or will it maintain its informality, flexibility, and creativity?

Tensions between Formality and Informality

This story offers insights about how CALFED managed the tensions between the formality of its sponsoring agencies and the informality of its collaborative processes. These are issues that cut across many other arenas of planning, so we explore them here.

Go It Alone versus Collaborate

In the formal system, agencies and stakeholders work alone, focusing on their specialized tasks. Staff members follow orders from above, and stakeholders address the defined interests of their constituencies. But in the informal, collaborative system, participants develop a more holistic view of what they need to do, and a loyalty to a shared agenda. Participants cannot rely on top-down orders as they work in real time with others to make decisions, and because they are the ones with the knowledge most relevant to those decisions.

This tension showed up in CALFED in a variety of ways. Agencies implemented the CALFED program, but also adhered to their normal procedures (Freeman & Farber, 2005, p. 905). Some stakeholders had one foot out the door most of the time, with environmentalists threatening lawsuits for fish protection and farming interests petitioning the legislature for water storage. Participants came to accept that they lived in two worlds, both the world of formal government and the world of seeking mutual gain. They never knew which would provide them more benefit. A similar tension played out for CALFED staff on loan from the agencies. They were loyal to the broad purposes of CALFED and to the particular tasks they were working on, but they were employed by agencies. They faced the possibility that their superiors would tell them to act in ways that ran against the CALFED mission. They wanted the security of knowing to whom they reported, and they played a considerable role in pushing for the creation of the CBDA.

Plans as Blueprints versus Plans as Heuristics

The formal approach is to make a plan, adopt it, and then implement it. In the formal system, a plan is likely to be regarded as a blueprint that must be followed. The ROD, however, was an unusual phenomenon: an informal plan. It was designed as a guide, laying out goals, priorities, and heuristics for agencies to follow as they confronted the uncertainties of the future. It anticipated that participants would learn through trial and error. The ROD, for the most part, did not say exactly what would be done (participants had not agreed on many of the specifics anyway), but laid out shared purposes and heuristics for action. It was never formally adopted as a plan, but the State Water Resources Control Board formally accepted the EIR/EIS and with it the ROD. This was a novel blend of the formal and informal.

Design Ahead or Design as You Go

CALFED was a case of building a plane while flying it. But this strategy is counter to the formal approach, which requires that everything be laid out at the outset. Tension arose around EWA, for example, because the state Legislative Analyst's Office (LAO) was not satisfied with its informality. LAO contended that EWA should be not be established until the costs, benefits, and impacts were determined; the state role, especially in funding, was agreed on; the operations, governance, acquisition, and use of water was resolved; and it was decided how to facilitate water transfers and provide storage capacity, as well as how to hold the program accountable to the legislature. The LAO wanted EWA to be backed by legislative authority (State of California, 2001). The legislature did not act, and EWA evolved without its oversight. EWA managed water transfers and developed its own principles and practices, resolving many complex issues. CALFED established an independent evaluation board to conduct annual reviews of EWA. Nonetheless, tensions remain because its long-term funding has not been identified, and this will require the engagement of formal government.

Formal Procedures versus Ad Hoc Action

The formal approach involves establishing and following generically defined procedures and applying regulations uniformly for specified public purposes. These rules are often designed and applied with the aid of peer-reviewed science and agency experts or consultants. CALFED, on the other hand, relied on its small groups to decide what actions to take in response to specific situations, using information from many experts and stakeholders. This ad hoc approach allowed for timely decisions and actions tailored to particular situations. Major cases in point are the work of the operations groups and EWA.

These differing strategies created tensions. In Phase 1 of CALFED, for example, participants tried to follow the stepwise procedures laid out by the California Environmental Quality Act and the National Environmental Policy Act, but found that the steps did not mesh well with their interactive dialogue. Agreements were made as they went along, and things were not necessarily done in the order prescribed. Thus, in Phase 2 they moved away from the formal EIR procedure and went to a programmatic EIR/EIS, which gave them more flexibility.

Formal Public Participation versus Informal Stakeholder Engagement

In the formal system, key decision-making meetings must normally be open to the public. Advance notice of topics to be covered is required. Members of the public may be given two or three minutes to comment, but have little or no interaction with decision makers. This procedure largely satisfies legal requirements for public participation, despite its limitations as a way of gathering information or resolving conflict (Innes & Booher, 2005). CALFED combined formal and informal participation. It provided wide public notice for all meetings except early ones of the Policy Group, and it had the small groups formally certified under federal law.[13] BDAC was a public advisory group and CBDA included public members. Both were conducted in formal-meeting style with motions and votes. The small groups, however, directly engaged stakeholders in tasks through informal dialogue and operated largely consensually.

Having members of the public in attendance can stifle the speculative dialogue that challenges assumptions and

leads to innovation. When the Policy Group was opened to the public, candid dialogue was largely replaced by formal statements for the record. Participants can be more creative when they are not worried about outsiders taking their words out of context (Boxer-Macomber, 2003). CALFED's brainstorming and problem-solving was largely left to the small groups, where most interests already were included, but few outsiders attended.

Top-Down Authority versus Shared Responsibility

In formal government, authority is assigned to an individual or commission at the top of a hierarchy. In theory, power flows from the top, and all participants are accountable to this authority. Collaborative processes, on the other hand, involve shared and distributed responsibility, spread through a network of players. Power and "authority" are co-located with key knowledge and with the nodes of the network that can take action.

Divergence from the conventional model of accountability was what troubled observers and participants most about CALFED. One Little Hoover commissioner is reported to have said "I have no concept in my mind as to who is running this ship. I don't get it" (Taugher, 2005, p. A01). A former state Secretary of Resources said of CALFED "It's an authority with no authority" (Furillo, 2005, p. A3). Stakeholders thought that by creating CBDA they would get guarantees on their agreements. Ironically, the opposite seems to have been the case. Agencies started to go their own ways without the Policy Group, where they would have had to confront their partners. Trying to graft a formal oversight body onto an informal process with different values and procedures was probably futile.

CALFED did have accountability, but it was not based on top-down authority. Participants were accountable to each other and to the Accord's purposes and priorities. The whole process was transparent, with all but early Policy Group meetings open to the public and proceedings documented and placed on the Internet. Strategies were developed by diverse and knowledgeable groups relying on a variety of expertise. Participants represented interests and communicated with their constituencies. There may have been no individual to blame, but the process could be observed, diagnosed, and adjusted.

Planners and Informality

This story of CALFED illustrates how informality can be a valuable strategy of planning and suggests ways the tensions between the formal structures of government and informal strategies can be managed. These issues are particularly important given that planners' work lies at the interface of the formal and the informal. Many planners are employed in bureaucracies, yet as professionals each is expected to use his or her judgment and follow professional ethics. They can be torn between loyalty to superiors and responsibility to the public (Howe, 1994) and between following rigid procedures and using their discretion. Informal strategies often help to bridge this gap. As planning scholars have documented (Forester, 1989; Healey, 1992; Hillier, 2002), planners constantly work with elected officials and the public to build meaning and focus attention, and in the course of this work they exercise discretionary power. Planning is about the uncertain future and thus cannot be fully formalized in rules and procedures, but planners nonetheless have to be answerable to formal agencies and accountable to the public.

One of the major challenges of planning today is finding ways to plan for cities, regions, or resources in a comprehensive or holistic way. As in the Bay-Delta, multiple agencies with narrow mandates each address their parts of a problem without regard to the larger system. In regions, hundreds of local jurisdictions jealously protect their autonomy, often at the expense of regional welfare. As in the CALFED case, it appears that the only way to address this is to develop informal relationships and collaborations among the relevant agencies and jurisdictions. It is not necessary to wait for top-down regional governance structures to be built. Planners can take initiative at any level to reach across the spaces between agencies to develop informal relationships with those who can help to address an issue. In any complex and changing context like a region, organic management systems are in order, at least as a complement to mechanistic formal ones. Informalistic interaction orders are the ones that will engage players, develop creative ideas, and build shared responsibility for the region, just as in CALFED players developed shared responsibility for the resource.

The next challenge is to transform the ideas, informal relationships, and agreements into a more enduring form, without losing the flexibility and adaptiveness of what emerges from the informal system. In the best case, one can show that the informal system produces valuable strategies that will help formal agencies to accomplish their goals. It can mean getting informal buy-in along the way from the heads of agencies and local government. It can mean applying some of the strategies for resolving tensions that we identified in CALFED, such as creating a new kind of adaptive plan based on goals and heuristics for working together to create new strategies. It will often require finding ways to memorialize agreements so they can be

visible and legitimate. A well-managed collaboration, which involves the key interests and expertise, can be highly compelling to formal agencies and can come to influence their activities. It can mean adapting tools of the formal to the needs of the informal as CALFED did with the Record of Decision. Most of all, planners can recognize that the stress and tension they experience as they negotiate their way between the formal and the informal is a source of the creativity and adaptiveness that planning requires if it is to address contemporary challenges (Stacey, 1996).

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Notes

1. Stakeholders included representatives of organized agricultural, environmental, and urban interests. Some of these were nongovernmental organizations, while others represented or were local governments, water supply agencies, special districts, and tribal interests.
2. *Cadillac Desert* (Reisner, 1993) provides a stark account of the water problem.
3. We conducted more than a decade of research on CALFED and its predecessor water collaborations, trying to understand how they worked and what they accomplished. The formal research was done primarily by authors Innes and Connick, but Catherine Hudzik, Amanda Kobler, and Laura Kaplan participated as well. Several articles and working papers, along with Connick's dissertation and Hudzik's thesis, have addressed aspects of this research (Connick, 2003; Connick & Innes, 2003; Hudzik, 2003; Innes & Booher, 2003; Innes & Connick, 1999; Innes, Connick, Kaplan, & Booher, 2006). Research involved more than 100 in-depth interviews with those knowledgeable about the processes, including stakeholders, staff, and observers as well high-level leaders. It also involved our attendance at hundreds of hours of collaborative meetings at which we took detailed, nearly verbatim notes. We also reviewed hundreds of documents, articles, and media reports about the activities. Though systematic interviewing largely ended in 2003, we have continued to follow the evolution of CALFED since that time through selected interviews, media reports, and documentary data.
4. The ideal type is an idea created and used by Max Weber and many sociologists after him who seek to build theory. It is an abstraction based on reality that allows social scientists to use logically controlled and unambiguous conceptions in their interpretations and analyses rather than relying solely on the less precise concepts more closely geared to the empirical reality. Ideal types describe extreme cases, while most examples fall on some continuum between these. The ideal type is a lens for looking at cases and has nothing to do with evaluating them. We use ideal types in this paper to help us make sense of a messy and complex reality and to allow us to work toward new theory for planning.
5. Administrative law scholars Freeman and Farber, who conducted a brief study of CALFED overlapping in time with ours, confirm this view saying,

> In much of environmental law scholarship the vision of the agency, borrowed from administrative law, is of a hierarchical, stable bureaucracy exercising delegated power subject to the elaborate set of accountability devices that has come to be called administrative law. Agencies are imagined to exercise delegated power in a top-down manner, promulgating rules, making plans, and pursuing projects from a position of authority. . . . The expert regulator at the top of this hierarchy is presumed to be capable of identifying the most important regulatory and management problems, and of gathering sufficient information about them (from agency staff and stakeholders) to prescribe effective solutions. These solutions are presumed, moreover to be translatable into legally enforceable commands (Freeman & Farber, 2005, p. 10).

6. This story is informed by several other studies of aspects of CALFED. (Nawi & Brandt, 2002; Reike, 1996; Freeman & Farber, 2005; Wright, 2001; Ingram & Fraser, Forthcoming; Fuller, 2006)
7. This agreement may be found at http://calwater.ca.gov/Archives/GeneralArchive/SanFranciscoBayDeltaAgreement.shtml
8. The governor was represented by the Secretary of Resources, and the Secretary of the Interior by an Assistant Secretary.
9. In his book *Getting Agencies to Work Together*, Bardach (1998) says,

> A cadre of agency managers, advocates and others trying to build an ICC [interagency collaborative capacity, which he sees as sort of organization in itself] is like a polyglot crew of laborers constructing a house out of misshapen, fragile and costly lumber on a muddy hillside swept by periodic storms (p. 29).

He goes on to contend that doing this requires smart and dedicated craftsmen. He too argues that interagency collaboration is essentially informal and ad hoc as it responds to complex and changing conditions and challenges.
10. We were able to attend some of these closed meetings because the University of California is a state agency.
11. In this case the public included primarily stakeholder representatives, though some were members of the general public. For the most part the unorganized public did not attend CALFED meetings, probably because most relevant interests were already represented in one way or another.
12. Much of the EWA story draws on the thesis of Catherine Hudzik (2003).
13. The Federal Advisory Council Act requires, among other things, that meetings involving federal officials have a diversity of participants and that they be announced by public notice. For further information, see *Too Much Sun?* (Boxer-Macomber, 2003).

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