

PLANNING TO GOVERN



U.S. Advisory Commission
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AN INFORMATION REPORT

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**U.S. Advisory Commission on
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EXECUTIVE SUMMARY

Planning to Govern helps bring the planning and governing processes together to pave the way for improvement in the quality of governmental decisionmaking and in the results. A politically sensitive planning process can improve a plan's chances for success. The report synthesizes the complex subject of planning—specifically for drought—within the democratic process.

Five types of knowledge are necessary to the success of any public policy planning process:

- (1) Water law;
- (2) Political cultures and the history of key issues;
- (3) Organizations, decisionmakers, other stakeholders;
- (4) How to work for needed changes in laws, organizations, and political environments; and
- (5) How to follow through with effective, long-term implementation.

Involvement is the key to a planning process that creates buy-in by the essential players. At least five types of groups need to be involved:

- (1) Bureaucracies (including water managers);

- (2) Public policymakers (including legislative, judicial, and political officials);
- (3) Interest groups (including advocacy groups and independent experts or analysts);
- (4) The media; and
- (5) The general public.

Leaving any of these players out of the process can cause significant trouble in implementing public policies, plans, and programs.

The complexity of public decisionmaking is daunting to many of the essential participants. Thus, to be successful, it is necessary to:

- (1) Provide nontechnical citizens and elected officials with an understanding of the key facts;
- (2) Get diverse interest groups to see each other's viewpoints;
- (3) Get separate governments and agencies to see how their responsibilities interrelate; and
- (4) Establish constructive interactions among all the players.

Intergovernmental and interagency coordination processes yield positive results only with great effort. Barriers to be overcome may include turf protection and the use of laws and procedures to close off discussion of potential solutions to problems. These barriers to cooperation may be lowered by freely sharing knowledge with all parties.

The formal tools of interorganizational coordination are contracts, compacts, agreements, and memoranda of understanding. These tools have been used in drought planning to:

- (1) Gather and share information about water conditions;
- (2) Interconnect independent water supply systems;
- (3) Establish contingency plans for responding to drought conditions;
- (4) Agree on trigger mechanisms to activate contingency plans; and
- (5) Evaluate the process.

Water managers and drought planners—like other public managers and planners—need the political process and the public support it can bring. They should work hard to bring their political partners and the other stakeholders into the planning process. Developing the political elements of plans often may be more demanding than developing the physical elements.

In short, this report emphasizes the need to:

- (1) Prepare studies of legal issues, political cultures, and institutional, political, and other interests;
- (2) Develop plans through an open and visible involvement process;
- (3) Include all of the necessary implementation elements in the plan; and
- (4) Get the key decisionmakers to take responsibility for action.

This report was developed as part of the National Drought Study conducted by the **U.S.** Army Corps for the Congress. The background studies on which the report are based are expected to be published by the Corps in a volume of the National Drought Study entitled *Governing Drought*.

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INTRODUCTION

Drought planning often examines only the physical aspects of the problem—hydrology, water sources and facilities, and the technologies to supplement, conserve, and manage water quantity and quality. If the planning stops there, the technical solutions to droughts are dropped into the laps of elected officials, and everyone hopes for the best. Often, disappointment follows. The plan is neither adopted nor used. The planning exercise is wasted.

Nothing frustrates the average drought planner more, perhaps, than politics. Too often, the planner does not understand the political process, and the officials who need to act on the plan do not understand or do not agree with or have serious objections to the plan. Planners and the politicians may end up seeing each other as foes rather than as allies working to accomplish common objectives.

This report synthesizes, in nontechnical language, the complex subject of planning within the democratic process. The planners and the politicians—and many other stakeholders—must be allies if a drought plan is to benefit the public.

The **U.S.** Advisory Commission on Intergovernmental Relations (ACIR) prepared this report as part of the National Drought Study conducted by the Institute for Water Resources

of the **U.S.** Army Corps of Engineers. The analysis draws in part **on** papers prepared for the Corps' study.' **ACIR**, with a bipartisan federal-state-local membership, draws **also** on 35 years **of** experience with a wide variety of complex intergovernmental issues, including water

resources planning and management.*For planning processes, individual states may have a similar organization that can be called on to advise on intergovernmental relationships in preparing various kinds of plans (see **Box 1**).ACIR maintains a directory **of** these organizations.

Box 1

States that Have State-Local Relations Bodies, 1993

Colorado	Iowa	Minnesota	North Dakota	Tennessee
Connecticut	Louisiana	Missouri	Ohio	Utah
Florida	Maine	Montana	Oklahoma	Virginia
Illinois	Maryland	New York	South Carolina	Washington
Indiana	Massachusetts	North Carolina	South Dakota	Wisconsin

Source: **U.S. ACIR, *Directory of Intergovernmental Contacts* (Washington, DC, 1993)**

PLAN TO GOVERN DROUGHT

Planning for the physical aspects of drought might be thought of as deciding what needs to be done. For example, water supply facilities might be expanded, water might be transferred, conservation might be prescribed, or water might be rationed. These are all technical solutions to the drought problem.

The political question—the question of governing—is how to accomplish the technically prescribed actions. The answer lies in the democratic process. From this perspective, Drought Planning translates into the Democratic Process, or DP = DP.

The technical prescriptions may call for tax increases; personal sacrifice and inconvenience; changes in established water rights and use patterns; potential damage to business profits; and new forms of cooperation and coordination among governments, separate governmental agencies, independent private utilities, regulatory bodies, and others. These prescriptions can create difficult political issues, especially if not balanced by clearly perceived benefits.

The reactions of consumers, taxpayers, voters, independent governments, separate agencies, and autonomous utilities will be felt in the political process. The worse those reactions are, the worse will be the chances for adopting and implementing a drought plan.

Three levels of Decisionmaking

There are at least three important levels of democratic decisionmaking:³

Constitutional

This level of decisionmaking establishes basic long-term principles that guide the governmental process. It is determined by the **U.S. Constitution** and the 50 state constitutions, plus constitutional amendments. The **U.S.** and state supreme courts interpret constitutional issues.

Interstate compacts on water issues—negotiated by the states, enacted by the state legislatures, and confirmed by the Congress—also create fundamental, long-lasting, and difficult-to-change rules governing water management.

Indian Tribal Governments operate in accordance with treaties between the tribes and the United States. These treaties frequently establish relatively immutable, although often undefined, water rights. This special tribal relationship generally is not subject to state law.

Collective Choice

This level of decisionmaking consists of the laws that establish contemporary public judgments. These judgments, which can change more frequently and more easily than constitutional principles, reflect the political times, political compromises, competition for funding within public budgets, and other factors. To the extent that the lawmaking process is truly representative, the laws reflect “the will of the people.” Laws may express such values as “The environment is important,” or “I don’t want to have lawn sprinkling bans three years out of four.” These choices are made by the Congress, state legislatures, city councils, county governing bodies, town and village councils, tribal councils, and the governing boards of special districts, public authorities, and public utilities. These choices may be subject to judicial challenge.

Operational

This level of decisionmaking involves administrative rulemaking, the granting of water permits, and many other activities designed to carry out laws in accordance with constitutional principles. Decisionmakers may have less discretion at this level, depending on how specific the laws are. Decisions at this level can have important consequences, and they may be challenged in court if they are controversial.

Negotiated rulemaking procedures—a relatively recent innovation—seek to build consensus before new rules are established to reduce the likelihood of a court challenge.

All three levels of decisionmaking are essential to sound drought planning and to the implementation of such plans.

The Political Elements of Drought Planning

A politically sensitive planning process can improve the drought plan’s chances for success. Studies of the governing issues are just as essential as the studies of physical issues. These studies can help develop at least five types of knowledge that are necessary to the success of the drought plan:

- Water law;
- Political cultures in the area and the history of the key water issues;
- Organizations, decisionmakers, and stakeholders who will be affected and who can help implement (or block) the plan;
- How to work for needed changes in the laws, organizations, and political environments of the area; and
- How to follow through with effective, long-term implementation of the plan.

Two recently adopted national water policy statements emphasize the importance of taking

this approach. The first is known as the Park City Principles (see **Box 2**), which grew out of a series of workshops held in Park City, Utah, during 1991 and 1992 by the Western Governors' Association and the Western States Water Council. The key point of that two-year consultation process was the recognition that, "In most cases, developing . . . technical solutions is less of a problem than overcoming the reluctance of affected parties to negotiate in good faith."

The second recent national statement on water policy was developed by the Senior Advisory Group on Federal-State-Local Cooperation in Water Governance, appointed by the U.S. Advisory Commission on Intergovernmental

Relations (ACIR). ACIR endorsed the statement in June 1992 (see **Box 3**). The key finding was that, "Systems of water governance in many parts of the United States are insufficient to support the needs of the people in a timely and environmentally, economically, and socially balanced way."

Studies of these essential governing issues should begin at the earliest stages of the drought planning effort, and **should** receive equal emphasis and be integrated with the technical studies of physical issues.

The five elements of the governing plan are outlined and illustrated briefly below.

Box 2
The "Park City Principles"

Findings

The status quo is not working well; we are trying to solve new problems with old mechanisms.

There is a need for high level leadership to articulate and promote a new paradigm of water resources management that extends beyond the historical emphasis on physical water development for economic growth.

In most cases, developing and implementing technical solutions is less of a problem than overcoming the reluctance of affected parties to negotiate in good faith.

Changing organizations is not as essential as changing the institutional missions and decision-making processes of existing organizations.

Recommendations

There should be meaningful legal and administrative recognition of diverse interests in water resource values.

The "problem-shed" encompassing a problem and all of the affected interests is the appropriate scale for resolving complex water problems.

Water problems should be approached in a systemic or holistic way that recognizes crosscutting

issues, cross-border impacts and concerns, and multiple water needs.

Policies should be responsive and should value diversity and economic, social, and environmental values.

Problems should be solved at the lowest available level of government that fits the problem-shed, with appropriate empowerment of such governments to exercise authority at the problem-shed level.

Authority and accountability should be decentralized within national policy parameters, with a federal policy of recognizing and supporting the key role of states in water management and delegating specific federal water-related programs to states and tribes.

Negotiation, market-based approaches, and performance standards are preferred over command-and-control methods for reaching and implementing solutions.

The criteria for evaluating policies and policymaking processes are equity, efficiency, accessibility, feasibility, efficacy, and certainty balanced with flexibility.

Source: Western Governors' Association and Western States Water Council

Box 3
**Principles, Findings, and Recommendations
of the ACIR Senior Advisory Group
on Federal-State-Local Cooperation in Water Governance
(Abridged)**

Principles

1. The nation's environmental well-being, economic development, and international competitiveness require strategically wise uses of the nation's finite and unevenly distributed surface and groundwater resources. . . .
2.
3. The nation's governments, systems of water rights, and administrative structures and procedures must be able to recognize and reconcile changing water needs and environmental requirements, and to create appropriate incentives for effective, efficient, and environmentally sound public and private use and conservation of water in times of plenty as well as times of drought.
4. The federal government has the constitutional responsibility—and the responsibility as a landowner and water resources developer and manager—to allow for and promote sound governance of water resources by state, tribal, and local governments.

Findings

1. Systems of water governance in many parts of the United States are insufficient to support the needs of the people in a timely and environmentally, economically, and socially balanced way. . . .
2.
3. Changing values and demands for the uses of water are creating serious conflicts among competing water uses.
4. Inadequate governmental responses to these issues may result from:
 - a. Narrowly focused laws, organizations, programs, and regulations that invite polarization and inhibit collaborative problem solving; and
 - b. A lack of coordination mechanisms to help link federal, state, tribal, and local efforts to find solutions to water resources problems—especially basinwide, interbasin, and interstate problems.

5. The present process sometimes leads to intergovernmental gridlock—an inability of the governments of the United States to meet the nation's needs.
6. There is an urgent need for a more positive and flexible problem-solving approach to meeting America's water needs. This approach should include proactive, environmentally sound water resources planning; greater collaboration among the federal, state, tribal, and local governments; and negotiation and dispute resolution encompassing the variety of needs within large and small water basins.

Recommendations

7. Federal Responsibilities

The federal government should become a more effective partner in helping solve the nation's water problems. . . .

2. State Leadership

To the extent that each demonstrates willingness, capacity, leadership, and commitment, the federal government should turn over to the states authority to administer water quality, stream flow, wetlands, and related standards. . . .

3. Interstate Water Basin Governance

Many river basins and large groundwater aquifers extend beyond state boundaries. Governing them effectively requires the establishment of special intergovernmental agreements and organizations with authority over water quality and quantity matters, including connections between surface and underground systems, hydropower generation, irrigation, navigation, fish and wildlife, and related issues.

To facilitate establishment of such agreements and organizations, where needed, the Congress should authorize and approve the creation of interstate regional mechanisms, including, in some cases, joint federal-interstate compacts. . . .

Study Water law

In general, state laws determine water rights, priorities for use, and allocations and reallocations of water rights among competing users. In the East, “riparian rights” allow those who live on a water course to make use of the water as it passes by. In the West, those who began to use the water first own the rights to it; newcomers may not find any water left for their use. Underground water generally has been available to anyone who drills for and pumps it.

Some states have comprehensive water laws relating to water allocations and reallocations, including emergency priorities. Other states may have enacted site-specific solutions to critical problems. These state laws are built around “the public trust doctrine,” which recognizes that, to a certain extent, water is **an** essential public resource, not just a matter of private rights.

The basic systems of water rights have been changing. For example, while the traditional concepts of surface water rights refer to taking water out **of** rivers, streams, and reservoirs, some environmental laws and tribal treaties have defined rights for keeping certain amounts of water in the streams. In the case of underground water, demand has been so great in some places as to draw-down the water table dangerously (water mining), and permit systems have been instituted to limit or reverse the damage.

The instruments for determining the use of water from reservoirs and water transfers from one basin to another include negotiated agreements, interstate compacts ratified by the state legislatures, and federal laws and *regulations*. *Negotiated interbasin transfers* may involve payments. Interstate river basin commissions have been established in a few cases, sometimes with powerful struggles between lawmakers and **courts**.⁴

Major interstate water disputes and disputes over the use of water in federal reservoirs have been settled by the **U.S.** Supreme Court. The federal courts also get involved in disputes

over Indian and instream water rights. The Congress settles some of these issues by enacting new laws and by providing funds to expand water storage and distribution facilities.

Drought emergency powers, if any, are authorized by state law and enacted by local ordinances. They may temporarily abridge normal water rights.

Water laws are highly complex and constantly changing. Some of the principal issues are: water use permits, site-specific programs (critical areas), quantification/adjudication, public interest, priority issues, instream flows, conservation, transbasin diversions, and conjunctive management of surface and underground supplies?

Drought planners need to have an up-to-date study of the exact legal situation for a particular area, including the identification of any deficiencies in existing law that might create barriers to implementing the drought plan. **Box 4** illustrates how some important changes were made in Arizona water law over the past 15 years.

Study Water Politics

Four drought planning case studies were prepared by the Corps of Engineers as part of the National Drought Study. In each case, a different political environment was encountered.

Virginia—There is a long tradition of local and industrial water users operating with almost no statewide regulations on quantity allocations and no federal dams. Until very recently, the Water Control Board has been concerned exclusively with quality. Now, the board **has been given** limited authority **to set up** a quantity permit system, particularly in response to federal instream flow requirements. It is proceeding slowly and cautiously. **A** state water **allocation** role is considered a high political **risk**.

The James River study covered half the state. The basin is water-rich upstream, and water-starved downstream. There is no state or federal role in allocating the waters of the river.

Box 4
**Arizona Water Laws
Changed Fundamentally**

On several occasions since the late 1970s, Arizona officials have modified the rules governing the allocation and use of water supplies. These efforts reflect the importance of institutional control to affected groups.

In the late 1970s, the U.S. Department of the Interior threatened to withhold funding for the Central Arizona Project (CAP)—a reclamation project designed to convey Colorado River water to farms and cities—unless the state controlled its escalating overdraft on local groundwater supplies. This federal warning came on the heels of an Arizona Supreme Court decision restricting groundwater rights to overlying landowners, which cast doubt on the ability of cities and mines to withdraw and transport groundwater. The two events precipitated a review of Arizona water rights law.

In 1980, after intensive negotiations among municipal, mining, and agricultural interests brokered by the governor, the Arizona legislature passed the Arizona Groundwater Management Act. The law repealed and supplanted all previous groundwater legislation. It designates Active Management Areas (AMAs) and Irrigation Non-Expansion Areas (INAs), with boundaries closely related to major groundwater areas. The goal is to limit the growth of water consumption in the INAs and to eliminate overdraft within the AMAs by 2025 (except one predominantly agricultural AMA).

Groundwater rights have been assigned within the AMAs. Water withdrawal fees are assessed against pumping to help finance the management activities. The law also created the Arizona Department of Water Resources (ADWR) and provided for the creation of advisory boards within each AMA. With passage of the 1980 law, the Department of the Interior released funding for CAP, and deliveries of water began by the end of the 1980s.

The 1980 Arizona Groundwater Management Act did not solve all problems arising from the state's arid climate and rapid growth. New laws have been necessary. Arizona policymakers and agency personnel have had to oppose several attempts to weaken or overturn the groundwater policy reforms.

Such a role has been proposed in the past without political response from the state.

The study team saw the lack of this state role as such a significant problem that a special study of the political situation was prepared and presented to the Virginia Advisory Commission on Intergovernmental Relations as well as to the drought planning advisory groups throughout the basin.

West Virginia—The Kanawha River is controlled by a federal dam. There is little problem with drought. There is, however, a challenge of adjusting to a new whitewater rafting industry that demands high-volume water releases in the fall to extend the rafting season and sustain the state's economy. This nontraditional demand is being dealt with through close communications among the affected parties.

Osage-Marais des Cygnes River Basin, Kansas and Missouri—Major federal dams provide the primary water management mechanism. However, the states have very different water rights systems. Missouri uses a riparian approach downstream, while Kansas appropriates guaranteed amounts of water to local water districts upstream. There is great difficulty in meshing these approaches.

Seattle-Tacoma, Washington—There is a strong tradition of local water districts in the metropolitan area. The largest is the Seattle Water Department, which sells water to many smaller districts. Tacoma has a separate system with a separate supply.

Rapid urban growth, two recent droughts (including a serious one during the study period), and growing recognition of instream requirements are increasing pressure on the Cedar and Green River Basins. Suggestions for solving these problems have included interconnecting the basins, consolidating the districts, and augmenting storage capacity. Indian water rights also are involved. The Corps of Engineers operates a major dam on the Green River serving Tacoma.

There are many other water allocation problems throughout the state of Washington, so the state government moved aggressively to regionalize the water allocation process. The system for doing this was established through a statewide negotiation among all major water interests, which produced The Chelan Agreement (see Box 5).

Box 5

**The Chelan Agreement
for Water Resources Planning
in the State of Washington**

Created the statewide Water Resources Forum to establish policies for:

- Regional Planning
- Instream Flows
- Hydraulic Continuity

Provided for regional planning to be initiated by a government in the affected area that:

- Gives notice of intent to plan
- Identifies the potential planning region
- Convenes a meeting of affected local and tribal governments and state agencies

Affected governments establish an Interim Coordinating Entity to:

- Convene a public meeting
- Establish caucuses of interest groups
- Establish the planning process
- Meet with the caucuses to establish the representative Regional Planning Group (RPG)

The RPG:

- Sets up a permanent Coordinating Entity (CE)
- Drafts a Scoping Document and planning schedule (with the CE) for approval by the state Department of Ecology
- Negotiates needed interagency and intergovernmental agreements to help with the planning
- Prepares the plan
- Takes steps to implement the plan
- Periodically reevaluates and modifies the plan

The dominance of Seattle, and its numerous contracts with surrounding water districts, creates an imbalance in the negotiation system envisioned by the state for considering water allocations within the region. There also is a political split on water issues within the Seattle government. There are efforts to settle the Seattle issues locally before tackling the Seattle-Tacomaregional issues.⁶ A state process provides for intervention in the region’s water decisionmaking if necessary.

A new drought plan is likely to gain greater and quicker acceptance if it builds on existing plans and agreements than if it attempts to make a complete break with the past. Box 6 illustrates the influence of past droughts on the current drought planning process in the Seattle-Tacoma region.

**Study Key Water Institutions,
Decisionmakers, and Other Stakeholders**

The purpose of a study of stakeholders is to identify all players who will be affected or who have a role in helping implement or block the plan and to identify their roles. This inventory should include relevant coordinating institutions.

Water Managers. Drought planners usually know most of the important federal, state, and local players within the traditional “water community.” However, thorough drought planning encompasses more than just a river system, the management of its dams and irrigation systems, and the operation of municipal water systems. Groundwater and water quality regulators must be included, as well as interstate water commissions where they exist.

Water Users and the Public. Many affected constituencies also are recognized. They include traditional agricultural and urban water users, and major water-using industries. **The** newer publics, which need equal attention, include instream users, such as those using waters for recreation and the fish and wildlife interests. The general public has an interest in issues of fairness, equity, and tax rates.

Box 6

Building on Existing Plans and Practices in the Cedar-Green River Drought Preparedness Study

The Cedar River and Green River basins in western Washington State extend from the Cascade Mountains to Puget Sound. Most of the Cedar River basin is located southeast of Seattle in King County. The Cedar River meets about two-thirds of the municipal and industrial water supply needs of the Seattle metropolitan area, but minimum stream flows must be maintained to protect fisheries and support recreational uses. Between Puget Sound and Lake Washington, the Chester Morse Reservoir and the Hiram M. Chittenden Locks on the Cedar River must be operated to control flooding and protect stream flows, to avoid saltwater intrusion from the sound into Lake Washington, and to maintain Lake Washington water levels within a range that prevents damage to houseboats and the floating bridges of Interstate 90 and State Route 520.

The Green River drainage area, in the southern portion of King County, is adjacent to the Cedar River area. It provides water for municipal and industrial uses, particularly in Tacoma. The Howard A. Hansom Dam serves as a flood control and water storage facility, and the city of Tacoma diverts water downstream from the dam. Controlled releases from the dam maintain minimum stream flows that protect fisheries and recreational uses.

After a severe drought in the latter half of 1987, during which water use restrictions were imposed in both basins, the Seattle Water Department, the Tacoma Water Division, and the state reviewed their drought and water-emergency programs. The

Seattle Water Department developed a water supply plan that includes drought and emergency options. The Tacoma Water Division prepared a water conservation plan.

To build on these efforts, the local agencies engaged in discussions with representatives of the U.S. Army Corps of Engineers concerning the operation of dams and reservoirs on the Cedar and Green rivers. They also undertook a drought preparedness study to (1) document drought management plans in the basins; (2) identify possible actions that could improve water management during drought; and (3) produce a drought preparedness plan with emergency, tactical, and strategic response options. The following objectives are being pursued:

- o Establish a regional data base for use in interagency drought management decisionmaking;
- o Establish agreed-on indicators of drought occurrence to trigger agency responses;
- o Institute a process for communication among affected agencies prior to and during droughts;
- o Institute processes for review and improvement of agencies' and local utilities' drought and water emergency plans; and
- o Consider the applicability of various river basin models as aids to interagency decisionmaking.

The Judiciary. The judiciary's role is becoming more important as water demand presses harder on available supplies. Water rights established by state and federal constitutions and laws, and by Indian treaties, are increasingly important, and they may be difficult to change to reflect evolving circumstances. Legal advice on these matters is needed in the planning process.

Political Officials. Finally, and perhaps most importantly, the federal, state, local, and

tribal lawmakers and chief executives—and their top aides—are major players. This group includes the President, governors, mayors, county executives, and tribal chiefs, plus the members of Congress, state legislators, city council members, township supervisors, members of county governing bodies, and tribal council members.

These officials make water laws, and can change them. They write the rules and regulations for drought emergency steps. They pro-

Box 7

Cedar-Green River Basins

Major Players

**Seattle Metropolitan Water System
(3 Caucuses)**

1. Seattle Caucus
Seattle Water Department (SWD)
Mayor of Seattle
Seattle City Council
2. Suburban Cities Association
8 Municipalities (Contract with SWD)
3. King County Water Alliance
18 Water Districts (Contract with SWD)

Tacoma Metropolitan Area

Tacoma City Department of Public Utilities,
Water Division
South King County Regional Water
Association
Pierce County Regional Water Association
Muckleshoot Tribe
U.S. Army Corps of Engineers

Other Major Players

Washington Department of Ecology
Washington Department of Wildlife
Washington Department of Fisheries
Tulalip Indian Tribe
King County

Major Issues

Rapid growth in Seattle
Seattle Water Department's contractual obligation to supply adequate water to 27 municipalities and water districts
Pressure on existing capacity of the SWD system
Dominance by SWD
Approach of a Chelan-style regional planning process for Seattle-Tacoma, with a much wider geographic reach than the current Seattle system
Emerging discussion of alternative water governance structures with broader geographical reach than SWD

vide the funds and rules for drought planning; water resources development and management; and protection of water quality, environmental quality, and endangered species. They also play important roles in determining the economic development and land use policies that influence water demand.

Stakeholder Analysis. The Seattle-Tacoma (Cedar-Green Rivers) drought planning case study prepared a thorough stakeholder analysis (see **Box 7**). It included an inventory of all the major players and personal interviews with many of them to uncover their fundamental views on critical issues. Two new pressures for change were the state-mandated Chelan-style regional planning process and emerging political discussions of alternative water governance structures that would mute the influence of the Seattle Water Department outside the city and give greater recognition to suburban officials.

Work for Change

With the results of these studies of laws, politics, and players in hand—in addition to the traditional technical studies—plan-making can begin. Plans should not be made before these facts are available because they are likely to violate essential political and social realities, and be impossible to implement.

The studies will identify many issues that go well beyond the usual technical planning exercise. The planing process, then, should be viewed as a political process in which numerous conflicts will need to be resolved. The process should be solidly informed by the physical realities and possibilities, but it also needs to create a “buy-in” commitment by all (or most) of the key stakeholders, including public officials and the interested parties. To the extent that this buy-in is not achieved, implementation of the plan will be less likely.

Involve the Players

Involvement is the key to a drought planning process that creates buy-in by the essential players. They need to be involved from the moment they are identified, so they do not feel left

out and so their insights can help inform and strengthen the process. There is a wide array of techniques for citizen participation, public involvement, public information, and participatory decisionmaking (see Box 8).

At least five types of groups (often referred to as stakeholders) need to be involved:

- Bureaucracies (including water managers);

Box 8

Citizen Participation Forms, Techniques, and Means of Facilitating

Forms

1. Organizational
 - Citizen Groups
 - Special Interest Groups
 - Program Clienteles
 - Official Citizen Advisory Committees, Task Forces, and Commissions
2. Individual
 - Voting
 - Program Client
 - Making Statements
 - Testifying
 - Attending Meetings
 - Working in Public Projects
 - Campaigning/Lobbying
 - Legal/Administrative Appeals
 - Demonstrating
3. Information Dissemination
 - Open Government
 - Public Information Meetings
 - Conferences
 - Publications
 - Mass Media
 - Displays/Exhibits/Etc.
 - Mail
 - Advertising/Notices
 - Hot Lines
 - Drop-in Centers
 - Correspondence
4. Information Collection
 - Hearings
 - Workshops/Meetings/Conferences
 - Consultation
 - Government Records
 - Non-Government Documents (Content Analysis)
 - Participant Observers
 - Surveys/Polls

Techniques

1. Legal
 - Arbitration
2. Interactive
 - Mediation
 - Coordinator/Catalyst
 - Plural (advocacy) Planning
 - Group Dynamics
 - Focus Groups
 - Policy Capturing
 - Policy Delphi
 - Priority Setting
 - Design-In
 - Game Simulation
3. Technological
 - Interactive Cable TV
 - Teleconferencing by Compute
 - Real-Time Computer Polling and Feedback
 - Interactive Computer Graphics/Game Simulation

Means of Facilitating

1. Simplify and Clarify the Process
2. Provide Training to:
 - Citizens
 - Public Officials and Staffs
3. Provide Trained Staff to:
 - Citizen Groups
 - Government Agencies
4. Provide Technical Assistance to:
 - Citizen Groups
 - Certain Individual Citizens
5. Provide Economic Assistance and Incentives for Citizens to Participate
 - Cost Reimbursement
 - Honoraria

Source: **U.S.** Advisory Commission on Intergovernmental Relations, *Citizen Participation in the American Federal System* (Washington, DC, 1979), pp. 81-82.

- Public policymakers (including legislative, judicial, and executive officials);
- Interest groups (including advocacy groups and independent experts or analysts);
- The press (including all forms of the public information media); **and**
- The general public (including many specific sectors).

Leaving some of these players out of the process can cause significant trouble later. The planners may not know, at the beginning of the process, everyone who should be involved. If the planning process is open and publicly visible from the beginning, those who want to be involved are likely to make themselves known.

Because not everyone can be involved in every meeting, there must be a variety of participation opportunities and techniques. The process must proceed in the open so there is no perception that secret deals are being made. The methods used may have to be tailored to the traditions in a particular area.

Surveys of Involvement Techniques. Different techniques serve different purposes and groups. A special summary of citizen involvement techniques for water planning purposes was prepared for the National Drought Study by Hanna J. Cortner of the Water Resources Research Center at the University of Arizona (see **Box 9**).

Circles of Influence. The “circles of influence” technique starts with a small core of key people who act as a steering committee. It expands to involve others in concentric fashion (see **Box 10**).

Special Citizen Advisory Committee. The Water Supply Citizens Advisory Committee (WSCAC) was established by the Massachusetts Water Resources Authority in **1977** as a temporary body to review a proposed water

Box 9 **Highlights**

Public involvement in water resources has evolved through the following eras:

- Closed participation @re-1960s)
- Maximum feasible participation (1960s)
- Environmentalism (1970s)
- Collaborative decision building (1980s)

The trend is toward more direct and open participation by citizens, with the manager in a facilitative role.

Experience has identified the most effective kinds of public involvement approaches and techniques.

The roles of citizens, managers, and analysts need to be reconciled:

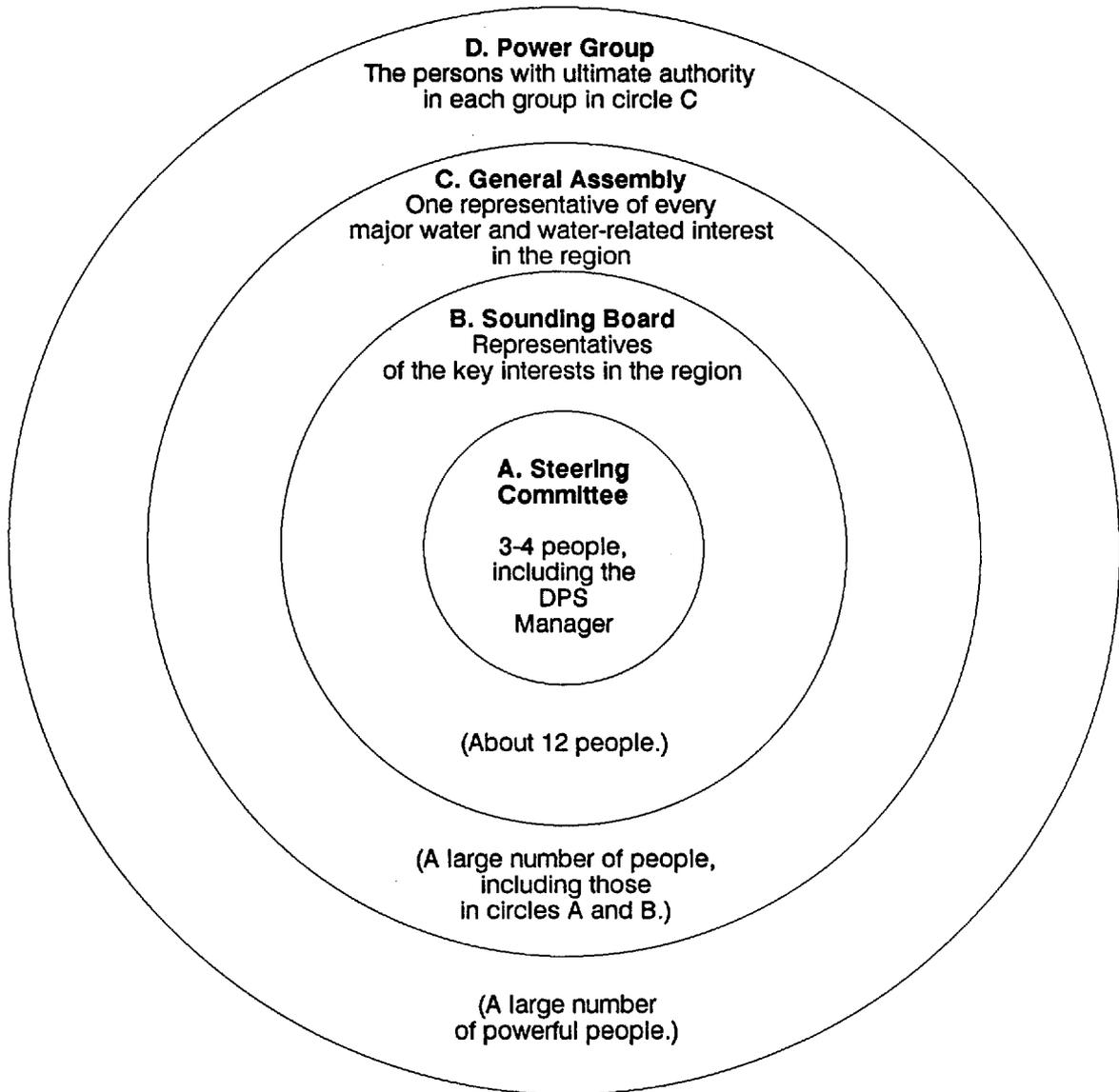
- Citizens are not just those who show up at public meetings; they are a much broader group.
- Public involvement and social impact analysis are distinct but related activities.
- Public involvement creates public learning.
- In the public involvement context, the public administrator is **less** a “neutral” facilitator and more a teacher and guide.
- Expert and facilitator roles are distinct.
- Resource planning and management decisions are inherently political exercises, involving value-based choices among competing conceptions of the public interest.
- There is a fine line between analysis as carefully crafted political argument and outright advocacy.

Public participation is not a technical exercise, but an ongoing political exercise in democratic governance.

Source: Hanna J. Cortner, “Reconciling Citizen, Analyst, and Manager **Roles** in Democratic Governance: **Public** Involvement Challenges in the **1990s**.”

Box 10

Circles of Influence: One Means of Involving Key Stakeholders in Drought Planning



supply diversion for the Boston metropolitan area. The committee's technical analysis and public information work was so useful that it was made permanent. It has a small independent staff paid for by the authority. The committee's staff has full access to the authority's data bases so that it can develop alternative analyses of proposals (see **Box 11**, page 16).

Negotiation. The process in Washington State that produced the Chelan Agreement for regionalizing the water reallocation process involved a relatively small negotiating group that represented the eight major water interests in the state. Each representative related to a larger caucus of interested persons (see **Box 12**, page 16). One result of this agreement was to establish regions within the state, each with a similarly structured negotiating process.

Another landmark water negotiation resulted in what has become known as the Pyramid Lake Agreement. Developed with facilitators, the agreement settled a long-standing dispute over water rights between two states, an Indian tribe, a power company, and federal requirements for instream water. The negotiated agreement was ratified by federal legislation (see **Box 13**, page 17).

In another situation, involvement of the parties to a water dispute in negotiations was used to avoid the uncertain, and perhaps arbitrary, results of a court case. The case involves the management of six rivers in Alabama, Florida, and Georgia. Disputes arose over a proposal by the **U.S.** Army Corps of Engineers to reallocate more water from its dam for the rapidly growing Atlanta metropolitan area. Alabama sued the Corps to stop the reallocation. Georgia joined the suit on the Corps' side, and Florida joined the suit on Alabama's side. The risks of a court decision led the four parties to form negotiating teams to find an out-of-court solution. In 1992, it was agreed to set aside the lawsuit for three years, during which time the parties would study the multiple problems and reach solutions jointly. The study is under way (see **Box 14**, page 18).

In the Washington, DC area, plans for construction of as many as 16 major dams on the Potomac River to ensure adequate water for the nation's capital raised so much opposition that the **U.S.** Army Corps of Engineers began looking for alternatives. A task force representing **25** water supply agencies called for interconnecting existing storage facilities, building one small facility, and coordinating management of the system. This ensured adequate long-term supplies much more quickly and inexpensively than the 16-dam proposal, and caused much less environmental damage (see **Box 15**, page 19).

The Press. Involving the press offers additional challenges. Press relations is a complex field, and drought planning teams should get professional advice about it. A few basics can be summarized here, however:

- (1) The whole process should be as open as possible to the press and others.
- (2) Data collection and analyses should be as objective as possible.
- (3) A wide range of alternatives should be examined.
- (4) Diverse viewpoints should be solicited and responded to creatively and constructively.

In short, the process should be on the up and up so that it can be respected by the press and by the public.

Good press can be especially important to the strategic planning process when:

- (1) Bond referendums are needed to fund key facilities;
- (2) Friendly elected officials are up for election;
- (3) Officials are voting on water budgets;
- (4) **Key** water legislation is being considered;

Box 11

The Water Supply Citizens Advisory Committee (WSCAC) to the Massachusetts Water Resources Authority: Government-Supported Public Participation

Originally formed in 1977 to review a proposed water supply diversion for the metropolitan Boston area, the Water Supply Citizens Advisory Committee (WSCAC) to the Massachusetts Water Resources Authority (MWRA) represents an unusual approach to engaging citizen participation in water resource policy decisions. WSCAC provides ongoing public input for the MWRA and state agencies. The MWRA provides WSCAC with funding for office space, expenses, and staff.

WSCAC's memberships balanced geographically and by interest (representing source watershed communities, public officials, environmental groups, water users, and so on). With its staff answerable only to the committee, WSCAC conducts independent research on water policy questions and proposed actions. WSCAC members organize into task forces devoted to more intensive study of particular issues.

WSCAC has developed a network of expert consultants, developed public information materials, and participated in securing passage of state legislation, such as the Interbasin Transfer Act of 1983, the Water Management Act of 1985, and the Watershed Protection Act of 1992. In addition, state officials have tapped WSCAC for representation on other review

bodies, such as the statewide drought task forces established in 1981, 1986, and 1988.

WSCAC members regard the following as the most important lessons learned:

- Informed citizen input on major policy decisions requires an independent, full-time staff answerable only to the committee.
- Active citizen participation is a good investment, ensuring publicly supportable, cost-effective, and environmentally sound decisions.
- Citizen input committees need to communicate with the public as well as with the agencies they advise.
- Effective citizen input entails responsibilities for both the citizens' committee and the affected agencies: the citizens' committee must engage in pertinent, factual, and thoughtful criticism of the agency (avoiding broad emotional attacks), and agency officials must respond receptively and professionally to the input provided by the citizens' committee (avoiding the tendency to retrenchment and inhospitality).

Box 12

The Chelan Agreement: Building Consensus through Decisionmaking Structure

Washington State's Chelan Agreement emerged from a process intended to create a system for reallocating water within the state's 62 drainage basins. The structure of the decisionmaking process contributed strongly to the forging of the agreement among the affected interests.

The Chelan Agreement process was stimulated by a legislative review of water policy and discussions with Indian tribes. In Spring 1990, eight statewide caucuses—each representing a major water interest (state government, Indian tribes, local governments, fisheries, recreation, environmentalists, business, and agriculture)—were convened by a professional mediator at a two-day retreat. Caucus members agreed to designate representatives to a 24-member negotiating team charged with drafting basin planning procedures.

Team members completed their drafting work at a retreat at Chelan in November 1990. Sections of the draft agreement were approved unless they were regarded as "fatally flawed."

The draft agreement was signed by representatives of all eight caucuses on March 8, 1991.

The Chelan Agreement contains proposals for water conservation and growth management, establishes a pilot process for drainage basin planning and an interim process for resolving issues in "critical areas" elsewhere in the state, and authorizes the formation of a State Water Resources Forum, organized with the same caucus and negotiating team structure, to make recommendations to state policymakers.

Rather than designating a lead agency, the agreement assigns responsibility for basin planning to state agencies, local governments, and Indian tribes, with a structure for representing interests, resolving disputes, reaching agreement, and assigning implementation responsibility. To encourage parties to resolve disagreements, a default condition provides that basin planning projects failing to meet established deadlines revert to the control of the state Department of Ecology.

The Truckee-Carson-Pyramid Lake Water Rights Settlement: A Negotiated Compromise in a Long-Disputed Watershed

Water users have feuded over the waters of the Truckee and Carson rivers in northern California and western Nevada for more than 80 years. Disputes arose over diversions of water under state laws in California and Nevada, the use of in-stream flows for hydropower generation, federal reserved rights of Indian tribes, and environmental concerns over in-stream flows, wetlands, and species preservation.

Negotiators for California and Nevada, the Pyramid Lake Indian Tribe, and the Sierra Pacific Power Company resolved at least some of these disputes, leading to passage of the Truckee-Carson-Pyramid Lake Water Rights Settlement Act (Title II of the Fallon-Paiute-Shoshone Indian Tribes Water Rights Settlement Act of 1990). In so doing, they had to overcome decades of disagreement while working within the accumulated constraints of laws and court decrees. Both the negotiation process and the resulting legislation are being hailed as examples for the resolution of western water conflicts.

Californians and Nevadans make extensive diversions of water from the Truckee and Carson rivers for irrigation, municipal, and industrial uses. The Sierra Pacific Power Company has hydroelectric facilities in both states and provides Nevada's Reno-Sparks area with its municipal water supply, so it had interests in both the preservation of in-stream flows and diversions for consumptive uses. The Pyramid Tribe relies on fishing from the rivers and Pyramid Lake for subsistence and income, so their goal was to maintain water levels in the rivers and the lake. The tribe and allied environmentalists were concerned with the survival of two culturally significant but threatened species of fish indigenous to Pyramid Lake.

Although California and Nevada negotiated an interstate water compact in the 1960s to govern

Truckee and Carson river waters, the Congress balked at ratifying it on the grounds that tribal and environmental interests had not been incorporated adequately. Efforts to break the impasse were unsuccessful through the 1970s and the first half of the 1980s.

Beginning in 1987, U.S. Senator Harry Reid (D-Nev.) and his staff attempted to reinvent the negotiations and to include the federal, Indian, and environmental concerns that had blocked full agreement and implementation in the past. New negotiations were organized among the four largest interests. This approach left out several affected parties, but it was felt that some earlier efforts had suffered from the number of participants who were involved.

Senator Reid broke the representatives of the four groups into subgroups and met with them regularly, with members of his staff serving as facilitators for subgroup meetings. The facilitators enabled the parties to generate win-win solutions and to discover alternatives that reconciled apparently conflicting interests.

The larger, more complicated, and intense conflicts were resolved first, paving the way for dealing with other concerns. As subgroups neared agreements, Reid and his staff gradually expanded the negotiations to include additional parties. As more progress was made, the number of participants grew, and large sessions were held to report on what had been accomplished and solicit input on remaining issues. In less than two years, all of the parties were in agreement, and the Truckee-Carson-Pyramid Lake Agreement was signed. It was submitted to the Congress as a bill on August 4, 1989, was passed by Congress and signed into law by President George Bush on November 16, 1990. Its provisions are being implemented.

Box 14

The Apalachicola-Chattahoochee-Flint Watershed: Direct Negotiations Among Constitutional Sovereigns

The Apalachicola-Chattahoochee-Flint (ACF) watershed drains about 20,000 square miles of the southeastern United States into the Gulf of Mexico. The Chattahoochee River flows south from northern Georgia and forms part of the boundary between Georgia and Alabama. At the Florida border, it is joined by the Flint River, a spring-fed stream that drains west central Georgia. The Apalachicola River is formed by the confluence of the Chattahoochee and the Flint and flows through the Florida Panhandle.

Only the Chattahoochee has water storage reservoirs. The largest of these are in the upper area of the watershed—not well positioned to control flows downstream in the Apalachicola River. Management was complicated by the fact that the three states have different systems for regulating surface and groundwater withdrawals, water quality, and wastewater discharges, and uneven implementation and enforcement. Droughts during the 1980s accentuated the potential conflicts inherent in the watershed's location and physical characteristics.

The Atlanta metropolitan area draws about 70 percent of its drinking water from the upper Chattahoochee. After a 16-year study, the U.S. Army Corps of Engineers concluded in 1989 that the best way to accommodate growth would be to reallocate some water used for hydropower generation. The proposed reallocations would have doubled Atlanta's take from Lake Sidney Lanier—up to 66 million gallons per day.

In November 1989, Alabama filed a federal suit against the Corps, alleging that it had failed to abide by the provisions of the *National Environmental Policy Act* (NEPA). Alabama was concerned about loss of water rights and decreased instream flows consisting of a higher proportion of wastewater discharges. Alabama claimed that future development along its eastern border would suffer if the Corps' plan were implemented.

Because Alabama's suit would have restricted Atlanta's water supply to current quantities, Georgia joined the lawsuit on the Corps' side. Georgia and the Atlanta Regional Commission claimed that restricting Atlanta's growth would mean forgoing 680,000 jobs and up to \$127 billion in wages and salaries by 2010. Georgia officials intensified the dispute in November 1990 by announcing plans to construct a 4,200-acre regional

reservoir on the Tallapoosa River, which flows directly into Alabama and feeds the Alabama River.

Florida joined the lawsuit on Alabama's side. It claimed that reduced Chattahoochee River flows could harm navigation on the Apalachicola River and the delicate ecology of Apalachicola Bay. Apalachicola River flows were also threatened by diminished Flint River flows due to increased agricultural withdrawals in Georgia. Florida's oyster industry also would be hurt. The bay and estuary provide 90 percent of the state's and 10 percent of the nation's oyster harvest. However, estuarine protection was not a recognized purpose in the Corps' operation of the Chattahoochee reservoirs, and controlled releases were made on the basis of flood control and navigation needs.

After the lawsuit was filed, negotiators for the states and the Corps worked out an agreement using alternative dispute resolution techniques. On January 3, 1992, the governors of the three states and Corps officials signed an agreement to coordinate water withdrawals from the ACF watershed and the neighboring Alabama-Coosa-Tallapoosa watershed. A jointly funded three-year study, with a conflict resolution procedure, will determine water needs and their economic and environmental impacts. Georgia agreed to defer its plans for the reservoir on the Tallapoosa, the Corps and the Atlanta Regional Commission agreed to hold water withdrawal increases to a minimum, and Alabama agreed to drop its lawsuit until completion of the study. The formation of a tri-state water commission also is under consideration.

The direct negotiation process has proved fruitful, but it has not included all interested parties directly. Other stakeholders represented by the state or the Corps negotiators include: metropolitan Atlanta residents; residents of other municipalities that use the river for water supply or wastewater disposal: recreational and resident users of Lake Lanier and other reservoirs; industrial and agricultural water users; navigation interests; environmentalists in Georgia and Alabama; other federal agencies, such as the Fish and Wildlife Service, the Environmental Protection Agency, the U.S. Geologic Survey, the National Oceanic and Atmospheric Administration, and the Southeastern Power Administration.

Box 15

The Potomac River Basin: Interorganizational Cooperation to Interconnect Water Storage

For decades, analyses of water supply in the Washington, DC, metropolitan area predicted an impending water crisis. Plans for addressing the crisis invariably included the construction and operation of several (in one plan, as many as **16**) major new reservoirs. Clearly, such plans potentially involved considerable expenses and environmental impacts.

A **1977** study of the situation by the U.S. Army Corps of Engineers concluded that the region would not necessarily be short of water if existing supplies and storage were used more efficiently. A potential solution to the situation lay in coordinating the activities of water suppliers. Over the next five years (a fraction of the time needed for designing, financing, and constructing surface storage facilities), officials of **25** water supply agencies in the area formed a regional task force that worked with the Corps on improving water storage capacity management. In July **1982**, eight agreements were signed for maintaining flows of the Potomac River, allocating water in periods of low flow, coordinating the operation of existing storage facilities, and sharing the costs of future storage capacity expansions, if needed.

A special concern was the potential environmental effects, especially on the tidal estuary downstream from Washington, from either reduced Potomac flows or the construction plans that had been thought necessary earlier. The coordination plans, instead, provide for the maintenance of sufficient flow in the Potomac to preserve environmental values.

These interorganizational arrangements are estimated to have saved between \$200 million and \$1 billion compared to the plans for constructing additional storage. Only one small *new physical facility was required in the metropolitan Washington area*, and adequate water supplies and storage are assured to 2020. In fact, the Potomac River system and its reservoirs are believed to have enough capacity to supply the region's anticipated **2010** population even in a drought as bad as the worst on record.

- (5) Governmental reorganizations affecting water programs are under consideration; and
- (6) The public is being asked to cooperate in cutting water use during a drought emergency.

Supporting Effective Involvement

Decisionmaking for drought preparedness is highly complex and getting more complex every year. It is a daunting responsibility to:

- (1) Ensure that nontechnical citizens and elected officials understand the key facts;
- (2) Get diverse interest groups to see each other's viewpoints;
- (3) Get separate governments and agencies to see how their responsibilities interrelate; and
- (4) Establish constructive interactions among all the players.

Computer-assisted techniques are becoming available to help meet this decisionmaking challenge. Two such devices were reviewed for the National Drought Study by William B. Lord (see Box 16, page 20).

Drought Simulation

One of the computer-assisted devices—**STELLA II**—is a general purpose simulation program based on differential equations. It employs a graphical user interface and other “user-friendly” features that speed up the process of creating a model directly with the officials and other stakeholders. This involvement in creating the model gives the users confidence in the process when they use it to address real policy issues.

Box 16 Highlights

Drought preparedness planning increasingly is characterized by:

- Growing complexity;
- Reduced emphasis on conventional water development structures (such as dams) and increased emphasis on management options (such as conservation);
- Reduced emphasis on federal government money and activity and increased emphasis on state and local money and activity; and
- increased emphasis on shared responsibilities, a wider range of objectives and stakeholders, institutional changes, intergovernmental relations, and dispute resolution processes.

Two distinct, but related, types of decision processes are needed to cope with drought.

1. Strategic long-range planning to "drought proof" the region as much as is practicable before a drought occurs.
2. Tactical real-time decisionmaking during times when drought conditions exceed those taken care of by drought proofing.

Both of these decision processes can be assisted by computerized decision support systems.

Strategic planning can assist in two ways:

1. Identifying the growing range of values that need water, and assisting in finding societal trade-offs among them. MATS (Multi-Attribute Tradeoff System, developed by the U.S. Bureau of Reclamation) is suitable for this purpose.
2. Accurately simulating the physical, institutional, and societal behaviors in the water region under varying drought conditions, using interactive "gaming" exercises with the key stakeholders and decisionmakers. The STELLA II model was used successfully for this purpose in the four local drought planning studies prepared as part of the National Drought Plan.

Tactical drought planning and readiness can be enhanced by the use of simulation models such as STELLA II.

Source: William B. Lord, "Decision Making in Drought Preparedness Studies."

STELLA II simulates not just hydrologic and engineering systems but also the populations served, institutions and regulations, and a wide range of alternative long-term strategies and immediate tactical steps that might be used to help solve drought problems.

STELLA II was used in the Corps' four drought planning studies to allow the stakeholders to interact in exploring the likely impacts and consequences of their policy options. Hypothetical "what if" games allowed the players to interact in a less threatening way, to discover and avoid mistakes and share innovations. Bringing diverse players together in the gaming situation builds rapport that can be helpful later when they must work together to make real drought-related decisions.

Use of the STELLA II simulation model had the following results:

James River Basin Study (Virginia)—The workshop made it obvious to a wide range of affected parties that state law offered no help in solving drought problems.

Cedar-Green River Basins Study (Washington)—One workshop with technical experts demonstrated the effectiveness of proposed technical solutions to a "virtual drought." A second workshop with close staff advisors to the governor and mayors demonstrated how regional cooperation could help achieve better drought solutions and improve public relations.

Kanawha River Study (West Virginia)—The workshop familiarized many stakeholders with the economic effects of alternative proposals for the Corps' management of the river, and is expected to reduce future criticisms compared to those heard during the 1988 drought.

Marais des Cygnes-Osage River Basin Study (Kansas-Missouri)—The workshop helped demonstrate the effects of different water laws in the two states and bring the

affected parties together more than had been possible in the past.

Alternative Dispute Resolution

Alternative dispute resolution, which has come into greater use in recent years, uses negotiation, mediation, arbitration, and facilitation. Negotiated rulemaking is a related technique. If the parties agree to use these techniques, rather than submitting to a formal judicial or rulemaking process, assistance is available (see **Box 17**).

In 1990, all federal agencies were given authority and encouragement to use these techniques (see **Box 18**). Many state and local governments also are moving in this direction.

Overcoming Barriers

The techniques of involvement are no panacea. Elected officials may be too busy with other issues or not sufficiently interested to participate. Reporters may have better stories to cover. Some stakeholders may see their interests better served by going to court than by

Box 17

Resources for Assistance with Alternative Dispute Resolution and Negotiated Rulemaking

Administrative Conference of the U.S.
1120 L Street, NW, Suite 500
Washington, DC 20037-1568
(202) 254-7020

National Institute for Dispute Resolution
1726 M Street, NW, Suite 500
Washington, DC 20036
(202) 466-4764

Many state governments and universities, as well as private practitioners, provide dispute resolution services.

*These organizations maintain rosters of qualified mediators and facilitators.

Box 78

Federal Authority for ADR and Negotiated Rulemaking

Two federal laws enacted in November 1990 amended the **Administrative Procedure Act** to include and encourage the use of alternative dispute resolution and negotiated rulemaking.

The **Administrative Dispute Resolution Act** (101 STAT 2736) requires each federal agency to promote dispute resolution as an alternative to litigation by (1) designating a senior official as the agency's Dispute Resolution Specialist; (2) providing training for agency personnel, especially those responsible for implementing dispute resolution; (3) reviewing the agency's contracts, grants, and other assistance programs to ensure that dispute resolution is authorized and promoted; and (4) adopting a policy governing the potential use of dispute resolution techniques in consultation with the Administrative Conference of the United States and the Federal Mediation and Conciliation Service.

The Negotiated Rulemaking Act (101 STAT. 4969) allows federal agencies to encourage early and continuing participation in the rulemaking process by representatives of potentially affected interests, toward the purpose of achieving consensus on the text of a proposed rule.

joining in a negotiation or a simulation exercise or a coordinating process.

The sincerity, objectivity, and openness of the planning process, and user friendly support, are likely to be contagious. The more stakeholders who get involved, the greater will be the attraction to join. To help overcome reluctance to involvement in the planning process, **work** groups should be convened by an organization having adequate geographic scope and objectivity to gain the confidence of all parties.

The problem of missing players should be dealt with constructively. They should be sent all materials prepared for meetings and should be polled for opinions on the issues and invited to send representatives. Issues most needing

their input should be highlighted, and personal briefings should be offered. **As** the process moves along, special opportunities for involvement should be offered.

Intergovernmental and interagency coordination processes yield positive results only with great effort. **To** often, protecting turf becomes paramount. Laws and procedures may be invoked to close **off** discussion **of** potential solutions to problems. These barriers to cooperation may be lowered by freely sharing the knowledge gained in the planning process with all parties.

Capitalize on Real Droughts

It helps to take advantage of a real drought. During a drought, it is difficult to plan; there is too much else to **do**, and nerves are too frayed to allow objective reflection. Immediately following a drought, while the event **is** still fresh—as is the resulting public, political, and institutional turmoil—interest in planning will be high. This may be the best time to involve new players in the process and to reevaluate previously developed plans and processes to see how the drought could have been handled better.

This point **is** illustrated in *Lessons Learned from the California Drought: 1987-1992*, which is part **of** the National Drought Study series. Among the lessons were several that showed the importance **of** organizational, legislative, legal, and public involvement factors (see **Box 19**). This drought focused public attention on the shortcomings of the existing water management systems and the need to reform water laws, institutions, and management processes to avoid even greater hardships from future droughts as California's population and economy continue to grow.

The catalytic power of a drought is also illustrated by a California case in which consumers of the San Gabriel River watershed in the Los Angeles metropolitan area withstood the **1945-1965** drought with limited harm. The institutional arrangements developed during

Box 19

Drought Governance and Management Lessons from California

Strategic Planning

The surest way to mitigate the adverse social, environmental, and economic impacts of a sustained drought is to obtain more water through long-term strategic planning that involves all the relevant parties.

Water in aquifers (usually managed by different institutions than surface water) continues to be the most effective strategic weapon against drought.

Local and regional interconnections among water supply **systems** (usually governed and managed by multiple institutions) proved to be good insurance against severe water shortages.

Land use regulation (administered by multiple local governments) must be the mechanism for urban growth management policies that accept limited water supply.

The nature of social, environmental, and economic impacts of a sustained drought demands more careful and realistic drought planning and decisionmaking processes.

Drought Response

Early drought response actions by governing officials and managers and proper timing of tactical measures are essential in short-term management of droughts.

The success of drought response plans should **be** measured in terms of minimizing and equitably redistributing the *Impacts* of shortages through the political process.

The overall success of water rationing plans depends **on** their design and reliance on increases in water rates. Market forces are an effective way of reallocating restricted water supplies.

Mass media can play a positive role in drought response, especially if guidelines are followed.

Institutional Change

Severe droughts can expose some inadequacies in the performance and roles of state and federal water institutions that would not otherwise be apparent.

Severe drought can change longstanding relationships and balances of power in the competition for water.

those years (see Box 20) linked water user organizations, water agencies, and related decision-makers in a governing system that allocated both surface and groundwater supplies among competing interests, while seeking supplemental sources to accommodate future growth. With small modifications, those institutions coped with the 1987-1992 drought, despite the additional growth that had occurred throughout the watershed.

The need to keep drought contingency plans

current is illustrated by the case of the recent drought in the Missouri River Basin, where the assumptions about relative needs made in 1944 were challenged politically and judicially in the 1990s (see Box 21, page 24).

Interagency Coordination

Despite the hydrologic unity of the water resource and ecological elements of a basin, many separate public and private organizations exercise different responsibilities within a ba-

Box 20

The San Gabriel River Watershed: Basin and Watershed Governance Structures Created by Water Users

Southern California's rapid growth and urbanization in the 1920s and 1930s led to some critical overdrafts on local water supplies, especially in the heavily developed San Gabriel watershed, which encompasses much of the Los Angeles-Long Beach metropolitan area. Even the availability of imported Colorado River water through the facilities of the Metropolitan Water District of Southern California (MWD) did not stem the deterioration of local supplies. Unrestrained by California water law, most pumpers preferred extracting dwindling underground supplies to the more expensive imported water.

An extended drought that began in 1945 intensified efforts of pumpers in the four groundwater basins of the watershed to understand and respond to their situation. Users in the small Raymond Basin at the upper end of the watershed negotiated a stipulated judgment defining and limiting their pumping rights in order to stabilize the basin, on which they depended for most of their water. Users in the West Basin at the downstream end of the watershed formed the West Basin Water Conservation Group, reorganized as the West Basin Water Association in 1946. Similar associations were formed in the Central Basin in 1950 and in the Main San Gabriel Basin in 1955.

The associations became forums for the discussion of basin water conditions and possible responses to them. The responses included the formation of municipal water districts to provide access to imported supplemental water, the ne-

gotiation of limitations on pumping from the local groundwater supplies, and the establishment of artificial recharge programs to replenish the groundwater basins with imported water. In the West and Central basins, freshwater injection barriers were created along the coast to halt the spread of seawater intrusion.

Water users also created a San Gabriel River watershed governance structure. Those in the downstream Central and West basins brought a suit in 1959 against the upstream users to force a firm allocation of the waters of the river. Negotiating committees for the upper and lower areas worked out a formula for dividing the river's flow each year based on rainfall conditions in the upper area, and set up a watershed governance structure to monitor compliance with the judgment and consider modifications.

These basin and watershed governance arrangements were crafted over several years by the water users. Their efforts were supported by the work of the California legislature, the California Department of Water Resources, and the Los Angeles County Flood Control District (now part of the county Department of Public Works). Their success in eliminating overdraft in one of the nation's most heavily developed metropolitan regions, even though the drought that began in 1945 held on for 20 years, indicates that sound water resource management can be closely tailored to local situations with the leadership of local water users.

Box 21

The Missouri River Basin: Multiple Interests and Uses Collide in a Drought

In the late **1980s** and early **1990s**, the Missouri River Basin, which includes part or all of ten states, experienced its worst drought since the **1930s**. Upstream, the U.S. Army Corps of Engineers operates six dams on the Missouri River. Downstream, between Sioux City, Iowa, and St. Louis, the Corps operates **735** miles of the river for navigation. The river is tapped for municipal and industrial uses along its entire reach.

Under normal weather conditions, the Corps can operate the facilities to satisfy all project purposes. With the recent drought, the Corps was unable to meet all users' demands, and competition for the remaining supplies intensified, particularly between upper states' recreation and irrigation interests and lower states' navigation interests.

The U.S. General Accounting Office (GAO) found that the Corps was following drought contingency plans for the Missouri River system that were based on **1944** assumptions about the amount of water needed for navigation and irrigation, which no longer reflect conditions. In particular, those plans give lower priority to recreational uses.

When the Congress approved the Missouri River reservoir system in **1944**, the Corps estimated the ultimate navigation demand on the river at 12 million tons per year. However, at its highest, it was **3.3** million tons in **1977**. By **1988**, it had declined to 2.2 million tons. Under drought operations, despite releases from upstream reservoirs to assure downstream flows, navigation fell to **1.4** million tons in **1990**.

Upstream, the reservoir system was anticipated to provide irrigation water for 2.2 million acres of farmland, but some of the facilities were never constructed. For example, the **1944** legislation envisioned more than **900,000** acres of irrigation in South Dakota, but the Congress never approved funding for more than **24,000** acres. At the same time, the dams and reservoirs inundated about **530,000** acres of prime bottom land in the state. Together, Montana, North Dakota, and South Dakota lost about 1.2 million acres of bottom land to the reservoirs in exchange for

Washington's promises of irrigation projects that never materialized.

The upper states have developed recreational fishing and boating industries around the reservoirs that generate more income than irrigation uses. According to U.S. Sen. Byron Dorgan (D-N.D.), the Corps' drought operation calls for lowering reservoir levels for the sake of a **\$14** million navigation industry while sacrificing a **\$67** million recreation industry upstream. Downstream interests respond that navigation has suffered from the drought, and the Corps' operations simply spread the suffering around rather than making downstreamers bear it all. Without arguing the merits of navigation versus fishing, the Corps maintains that its operations must reflect recreation's lower priority as set forth in the **1944** law. The Corps contends that only the Congress can change those priorities.

In May **1990**, a federal district judge in Bismarck, North Dakota, sided with Montana, North Dakota, and South Dakota, and ordered the Corps to limit releases from Lake Oahe (in North and South Dakota) in order to preserve the walleye spawn, which the states associated with **\$20** million from fishing tourism. The Corps appealed, arguing that releases were necessary to protect navigation and nesting areas for two endangered bird species downstream.

The U.S. Justice Department represented the Corps, and argued that reservoir system management decisions were not subject to judicial review. A three-judge panel of the Eighth Circuit Court of Appeals voted **2-1** to stay the district judge's order. The judges accepted the Corps' argument that the courts should not interfere with its complex reservoir-management decisions.

In February **1991**, Montana, North Dakota, and South Dakota filed a suit in federal court challenging the Corps' practice of categorizing all project purposes as either primary or secondary. In the meantime, the Corps has set up regional conferences seeking comments to help update the Missouri River Master Manual that guides its operation of the system.

sin. The drought planning process, therefore, seeks to coordinate many organizations.

The formal tools of interorganizational coordination are contracts, compacts, agreements, and memoranda of understanding. These tools can be used in drought planning to:

- Gather and share information about water conditions;
- Interconnect independent water supply systems;
- Establish contingency plans for responding to drought conditions with appropriate facility operations, water pricing, and conservation strategies;
- Agree on trigger mechanisms to activate these contingency plans; and
- Evaluate the process.

Many such agreements have been developed. For example, in the extremely water-short southern region of Orange County, California, water supply agencies have created a system of interconnections and use agreements to share scarce supplies during drought or when localized interruptions of service result from damage to supply lines or storage facilities. Such coordination has saved each agency money.

In Solano County, California, water coordination contracts have tied local underground water supplies together with state and federal government surface water supplies to form a more reliable conjunctive management system for municipal, agricultural, military, and other purposes (see Box 22).

For Idaho's drought management plan, the Department of Water Resources (IDWR) analyzes forecast data concerning the upcoming year's water supply and notifies the governor if a shortfall is expected. Upon the direction of the governor, IDWR assembles a water supply committee to organize and coordinate drought-related activities.

Box 22

The Solano Project: Stabilizing a Water Supply through Interjurisdictional Contracting

The Solano Project, built in the 1960s by the U.S. Bureau of Reclamation, captures the waters of Putah Creek from the mountains in northern California's Napa and Lake counties, and directs their controlled flows toward the farmland and cities of Solano County, one of the fastest growing counties in the state. Two local agencies, the Solano County Flood Control and Water Conservation District and the Solano Irrigation District, were organized to contract with the Bureau for the Solano Project and the construction and operation of a water distribution system.

With the aid of an interest-free loan from the Bureau, the irrigation district built the \$15 million distribution system that conveys Putah Creek water through its territory. The Bureau entered into a Master Water Contract with the Flood Control and Water Conservation District for the control and distribution of water from the Solano Project. The flood control district subcontracted its responsibilities to the irrigation district. The Bureau contracted the operation of the Solano Project headworks to the district, which also has acquired the licenses to construct and operate hydroelectric facilities at the headworks.

As a result, the Solano Irrigation District is in a position to operate all aspects of the Solano Project headworks and distribution system for conveying surface water supplies into and through most of Solano County. As increasing portions of the county urbanized since the 1960s, the district entered into agreements with municipalities to supply water.

The Putah Plain Groundwater Basin is located within Solano County, mostly within the territory of the Solano irrigation District. With its operation of the Solano Project facilities, the district is able to pursue a sophisticated conjunctive management program that takes advantage of surface water supplies when they are available and relies on stored groundwater supplies when surface water is more scarce or in those parts of its territory that are hard to reach with surface water. This conjunctive management program has helped protect Solano County's cities and farms from drought.

The Idaho water supply committee is composed of representatives of IDWR, the state Bureau of Disaster Services, Department of Agriculture, Department of Fish and Game, and Division of Environmental Quality, plus the Cooperative Extension Service of the University of Idaho, and the U.S. Bureau of Reclamation, Army Corps of Engineers, U.S. Geological Survey, U.S. Forest Service, and National Weather Service. The state plan provides for subcommittees dealing with water data, public information, and different water use categories.

The committee reviews water supply information and develops and oversees the implementation of drought mitigation measures, including conservation. The committee is charged with monitoring and evaluating results and designing adjustments to the drought plan.

The prior specification of this interagency, intergovernmental committee facilitates inter-organizational coordination by providing a forum for addressing all critical areas of need. Information sharing, specification of operating procedures for physical facilities, design and implementation of conservation measures, and evaluation of results can all occur within the framework of this committee. The annual monitoring of conditions keeps this mechanism ready to meet contingencies.

Establishing Follow-Through

Planning without action has no effect. Thus, the planning process needs to go a step beyond determining *what* should be done to determine *how* and by *whom* it will be done.

The planning process is ideally suited to making these decisions because it involves all the parties and facilitates constructive interaction. The plan should not be considered complete until it identifies the parties responsible for implementing each recommendation and gets their commitment to take on their assigned responsibilities.

New Organizations and Laws. If new organizations or new laws are needed, the plan should specify how they will be enacted.

Agreements, Contracts, and Compacts. If interagency or intergovernmental agreements and contracts (or even interstate compacts) are needed, the plan should spell them out and provide for their negotiation. Studies that cross state lines may be particularly difficult. If adjoining states have significantly different water laws and political traditions (e.g., Kansas and Missouri), coordination will be more difficult.

Trigger Mechanisms. Permanent mechanisms should be set up to trigger coordinated drought response activities by all the appropriate parties.

Readiness. A program should be established to ensure readiness to respond to drought emergencies. These emergencies come along only now and then, plans get old and perhaps forgotten. A drought plan may be obsolete or too unfamiliar to be of much use if it has not been kept alive. In the Potomac River Basin, annual drought drills are held in which the key players manage a simulated drought (see Box 23).

Budgets. Budgets needed to expand water

Box 23

The Potomac River Basin: Improving Analysis and Readiness through Drought Simulation

A drought management simulation is conducted annually by the Interstate Commission on the Potomac River Basin and the three largest water utilities in the region. The week-plus exercise allows managers to employ and balance various tools, including three storage reservoirs, computer models that help maximize use of stored water, methods of sharing among water managers data about river flow and water demands, and a series of agreements among the utilities for imposing water conservation measures.

supplies, establish water conservation programs, interconnect existing supplies, and maintain the planning and drought-drill processes will need to be coordinated and enacted.

These key implementation activities cannot be left to chance. If they are not in the plan, and if the planning process does not create commitment by the responsible parties—by virtue of their having been involved—there is a strong likelihood that the plan will not be implemented.

Conclusion

Water managers and drought planners need the political process and the public support it can bring. They should work as hard (or harder) to bring political partners—and the other stakeholder's who are necessary to build a workable consensus—into the planning process as they do to perfect the physical elements of the plan. Developing the political elements of drought plans often may be more demanding than developing the physical elements.

This report has emphasized the need to:

- *Prepare thorough studies* of the legal issues, the political cultures, and all of the institutional, political, and other stakeholders' interests in drought planning and management.
- *Develop the drought management plan through an open and visible involvement process* that (1) embraces all the players and brings them in; (2) informs them as thoroughly as possible about the physical, social, political, and economic factors relevant to the plan; (3) facilitates interaction; and (4) resolves conflicts fairly and equitably. The process should include the mass media and the general public.
- *Include all of the necessary implementation elements in the plan*, and get the key decisionmakers to buy in sufficiently to

take the responsibility for following through with needed actions.

Specialists will be needed to help the drought planners with these tasks:

- Lawyers for the legal studies;
- Political and social scientists for the studies of political cultures and stakeholders; and
- Citizen participation experts, meeting facilitators, conflict resolution experts, and experts skilled in computer modeling and decision-support systems.

Droughts are not easily predicted, and the demands for water (including instream uses) have been growing more rapidly than supplies in recent years. Thus, drought planning needs to be flexible and constantly under review.

Notes

¹The papers on governance issues prepared for the National Drought Study are:

William B. Lord, "Decision Making in Drought Preparedness Studies"—establishes a framework for understanding the different types of decisions in governing water and managing droughts, and describes some support tools that can help planning decisionmakers. Lord describes three levels of decisions: constitutional, collective choice, and operational.

Hanna J. Cortner, "Reconciling Citizen, Analyst, and Manager Roles in Democratic Governance: Public Involvement Challenges in the 1990s"—traces the evolution of citizen involvement through four eras (closed participation, maximum feasible participation, environmental activism, and collaborative decision building) and describes how the sometimes divergent goals of citizens, managers, and analysts can be reconciled in the current era of collaborative decision building for water resources management.

Charles L. Lancaster, "Assessment of Water Law and Drought Management"—examines broad trends and nine specific issues in contemporary water law, and draws implications for water managers, including the need to change some laws.

Vivian E. Watts, "Enacting a Virginia Water Management Plan"—part of the James River Basin drought planning case study, shows how operational water managers can identify the need for legislative change and directly help to sensitize the state political climate to this need.

David S. Harrison, Helen Birss, and Deen Ruiz, "Water Governance in the Cedar and Green River Ba-

sins” —includes a detailed stakeholder analysis of virtually all the public and private parties having interests in water policies in the two adjacent basins. It also provides managers, analysts, political actors, and others in the basin with a scorecard on the players that they can rely on as they work to improve drought preparedness.

²The membership of the Advisory Commission on Intergovernmental Relations includes 3 private citizens and 3 members of the federal executive branch, appointed directly by the President; 4 governors (nominated by the National Governors’ Association), 4 mayors (nominated by the U.S. Conference of Mayors and the National League of Cities), 3 state legislators (nominated by the National Conference of State Legislatures), 3 elected

county officials (nominated by the National Association of Counties), appointed by the President; 3 members of the U.S. Senate, appointed by the President of the Senate; and 3 members of the U.S. House of Representatives, appointed by the Speaker of the House. Members serve two-year terms and may be reappointed if they remain in office.

³William B. Lord and Douglas S. Kenney, “Resolving Interstate Water Conflicts: The Impact Approach,” *Intergovernmental Perspective* 19 (Winter 1993): 19-23.

⁴See Lord.

⁵See Lancaster.

⁶See Harrison, Birss, and Ruiz.

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