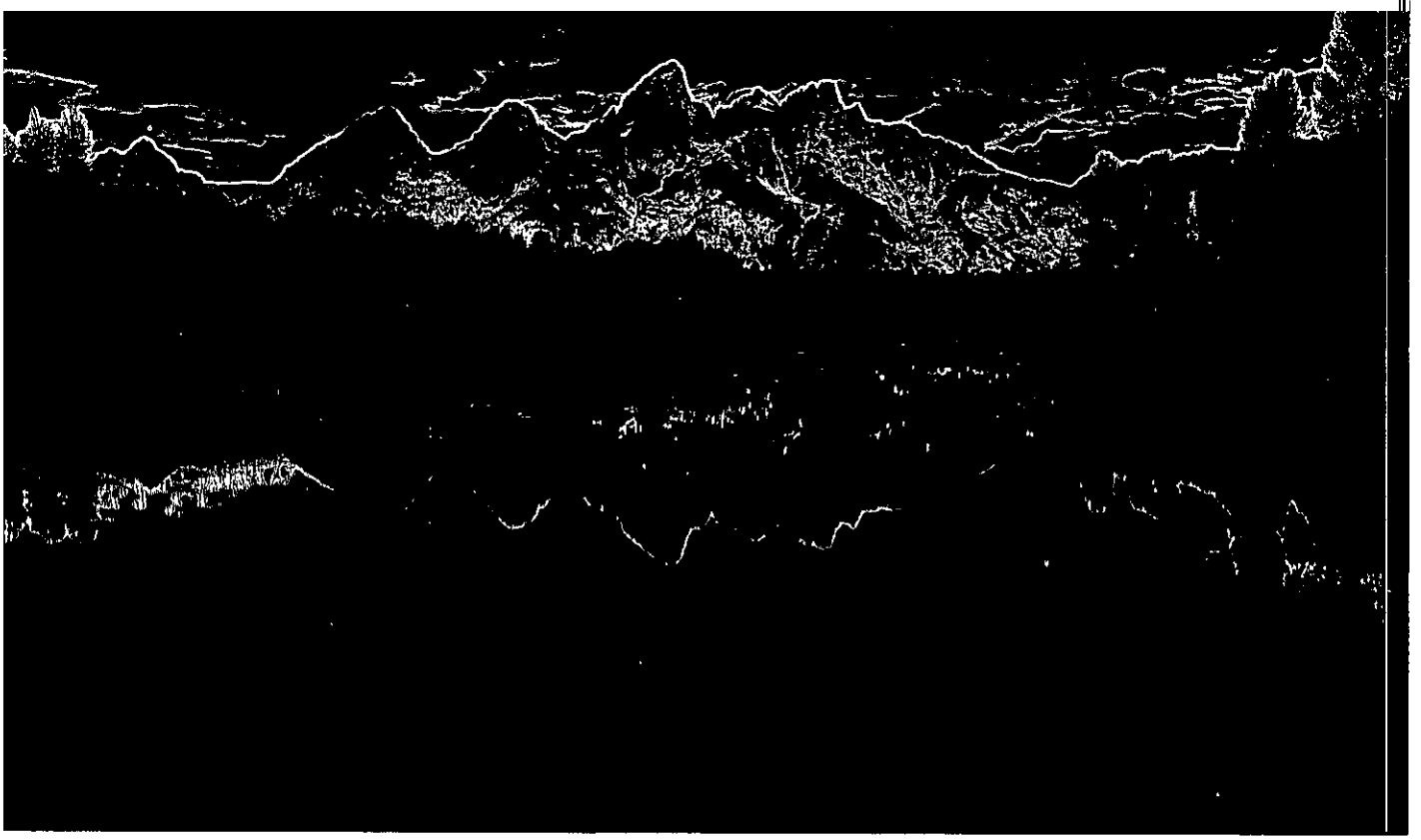

PIONEERING NEW SOLUTIONS: DIRECTING OUR DESTINY

A Pilot Project Report

Western Governors' Association

June 1992

Foreword by
Governor Mike Sullivan
Chairman

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WGA is an independent non-partisan organization of seventeen western states, one Pacific commonwealth, and two territories. Established in 1984, its purpose is to strengthen the policymaking and management capacity of member states and their role in the federal system. It serves the interest of the governors across a range of functional concerns, including environmental management, water, public lands and coastal waters, international trade, fiscal policy, human services, economic development, energy and related issues.

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by Governor Mike Sullivan, Wyoming

The theme of my year as chairman of the Western Governors' Association was as simple as can be: How can we do what we do a little better than we've done. Yet, to those in the field and in the trenches, we know that such a simple goal can also be a great challenge. Change does not come easily. Breaking with the past can be unsettling.

States, with more resources than local governments and less bureaucracy than our federal brethren, have become the great laboratories of governance. In the West, particularly, perhaps because we are the "youngest" section of the nation, or because our endless vistas do not allow for limits on our thinking, the states have sought new solutions to old problems.

I was deeply gratified at how my colleagues, their staffs, my staff, the staff at WGA and those at every level of government in the West rallied to this cause -- as well as those in education, private business and private foundations. Many suggestions were made for opportunities for new approaches and a number of projects were undertaken.

The old saying how the tough get going when the going gets tough was clearly true in our endeavors. Despite a time when we are all doing more with less, we did not shy away from tough issues or from taking responsibility for creating solutions, piloting new approaches and developing needed capacity.

The report contains a mix of examples of innovations, both at the state and regional levels. One involves my own state. Wyoming has pilot tested the use of electronic benefit transfer, otherwise known as SmartCards, to deliver benefits for the Women, Infants and Children program. The experiment is the first of its kind in the country. Preliminary evaluations show that the program is cost effective, reliable, preferred by all parties, and has the potential to be expanded easily to additional programs, areas, and uses. In fact, we are working with four other western states to expand the program into a "health passport."

Another pilot extends geographically to a sub-region of the West -- the Great Plains, only it includes states and provinces from two other nations, Canada and Mexico. The Great Plains Project is an experimental project to protect migratory species and the ecosystems which support them. This is one of the first efforts to assess the health of an entire "landscape," using new data tools such as gap analysis, developing new response tools, and promoting sustainability for both human and wildlife populations on the Great Plains. The first important step is exchanging information and coordinating protection measures. Joint international projects may be undertaken down the road if needed. We have been pleased to work with Mike Hayden, a friend and former colleague, on this project in his capacity as Assistant U.S. Secretary for Fish and Wildlife and National Parks.

Two pilots involve innovation in water management. One involves negotiations with the Federal Energy Regulatory Commission to reach a Memorandum of Agreement on hydro licensing and relicensing. Commission Chairman Martin Allday has recognized the value of FERC and states getting out of the courtroom and into cooperation. Seven areas are being addressed in order to smooth the way for applicants, state administrators, and FERC regulators. This too may be expanded down the road if findings warrant. Another pilot involves California's innovations last year with water banking.

This report also contains examples of innovations at the regional level on water, environmental, and energy management as well as regional higher education initiatives. Other initiatives have also gotten underway -- in environmental management, relations with Mexico on border issues and public lands -- but they are still in preliminary stages.

During the past year there were victories, large and small, victories planned and victories unexpected, but the greatest victory of all is that we tried new approaches to old concerns. The implications and benefits of these victories will be weighed by what we do to build upon them. Even the farthest along of any of our pilots is only a beginning, and there is a vast array of other issues which also cry out for fresh ideas.

It seems essential that we set our sights on what we want to accomplish and hang in there for the long term. Collaboration, funding, working through legislative processes, educating local stakeholders so that they can help craft solutions, are necessary and valuable, but they take time. We are an impatient people. Those immigrants who settled the West were anxious to reach a final destination, but they recognized that it was foolish to rush ahead of the elements and stopped along the watering holes. We, too, as we pioneer in governance and push toward the goals ahead, must be wise enough to carefully mark our way, but above all, we must persevere.

STATE PILOTS

WYOMING PIONEERS NEW TECHNOLOGY TO DELIVER HEALTH AND WELFARE ASSISTANCE

Wyoming Tests Use of Smartcards

The State of Wyoming is pilot testing the use of electronic benefit transfer (EBT) in Natrona County, Wyoming to deliver benefits for the Women, Infants and Children (WIC) program. The WIC program provides certain foods (e.g., milk) to low income pregnant expectant mothers and small children to ensure healthy babies. The Wyoming experiment is the first of its kind in the country. A preliminary evaluation of the pilot test by the University of Wyoming shows that the program is cost effective, preferred by all parties, and applicable state-wide with a few technical and hardware changes.

"The Wyoming experiment is the first of its kind in the country."

EBT uses on-line credit cards or off-line "SmartCards" to record, update, and subtract participants' food and nutrition benefits directly, without the use of paper coupons and checks. The on-line version works in a similar fashion to a credit card transaction, contacting a central computer for benefits verification at the time of purchase. Demonstration projects using on-line systems are currently underway in Maryland, Minnesota, New Mexico, and Pennsylvania. However, Wyoming is the first state to test the off-line system which records benefits directly on a computer chip stored in a wallet-sized card that does not require any telecommunications for the transaction to occur.

". . . renew benefits each month by modem, with the WIC office down-loading benefits to the card at the grocery store."

The process in the off-line demonstration for the delivery of WIC benefits in Natrona County works independently of the central computer. Each participant is issued a card with a embedded 16K microchip (expandable to 64K) which tracks the available WIC benefits. At the grocery store, the checker inserts the card into a reader, the participant enters her PIN, and the value of the eligible food items are automatically subtracted from the allotment on the card. The participant must renew benefits on the card every month. In the Wyoming demonstration, the participants must go to the local WIC office to do this. However, participants could potentially renew benefits each month by modem, with the WIC office down-loading benefits to the card at the grocery store.

The application of technology to federal transfer programs has been made possible by advances in telecommunications, data processing, and card technology. EBT uses communications and point-of-sale technological infrastructure already in place to track, quickly and easily, a variety of transactions. For off-line EBT, the transactions require relatively inexpensive computer card readers to be placed in check-out lanes at the grocery stores. Information from the card readers is aggregated at day's end by the store's computer and, during the night when phone rates are cheapest, information on total WIC purchases is sent to the state WIC office for approval. Upon approval, the state instructs the bank to transfer funds electronically to the merchants. The whole process saves weeks of time compared to the traditional check/coupon system.

Results of the Wyoming Evaluation

Impacts on WIC Participants

". . . more convenient and easier to use than the paper checks."

Participants found the SmartCard far more convenient than paper checks at the store. There were no significant differences between SmartCard users and paper check users with respect to convenience at the WIC office where benefits are issued. A significantly lower number of SmartCard users expressed feelings of stigma or discrimination during their WIC transactions compared to paper coupon users. Most SmartCard users said that overall, the cards were more convenient and easier to use than the paper checks. It is interesting to note that focus group interviews and survey data showed a significant preference for the SmartCards among recipients despite the fact that SmartCard users, on average, reported more problems with the actual use of the card than did paper check users with checks. The reported problems included the limited number of check-out lanes for SmartCard transactions (generally, only two lanes were designated for SmartCard transactions), occasional difficulties with the card readers, and some inadequately trained checkers.

Impacts on Cooperating Retailers

The SmartCard grocery stores experienced total monthly cost savings of $53.83 over the paper coupon stores. Total costs for the SmartCard stores were $42.85, compared to $98.40 for the paper check stores. The bulk of the savings with the SmartCard system can be attributed to the elimination of a $.17 per WIC check processing fee charged by the bank. Quality of service to the participants, an important consideration for the grocery store, was measured by calculating a "scan time" (from greeting to announcement of the total bill) and a "payment time" (from

announcement of the total bill to either leaving the check-out lane or greeting the next customer). There were no significant differences in scan times or payment times between SmartCard users and paper check users. Interviews show that store managers generally prefer the SmartCard system because it reduces the chances of checker and administrative errors, and it frees checkers from the responsibility of monitoring items for eligibility. In summary, the cooperating retailers indicated that the SmartCard improved the quality of service and was preferred for cost and administrative aspects.

Impacts on State and Local WIC Staff

Cost estimates performed by the WIC staff show monthly costs of $902.01 in May and $841.09 in October for the paper check system. This compares favorably to the estimated $1,138.55 for the SmartCard system. When itemized costs are compared between the two systems, the SmartCard's higher cost is due to the purchase of card readers (amortized over 60 months) for the experiment group stores. If this cost is eliminated, the SmartCard costs drop to $694.42 for October. In summary, administrative of the WIC program would be lower for the SmartCard system if the necessary card readers were purchased by the grocery stores rather than by the WIC office.

". . . preferred for cost and administrative aspects."

The final recommendations of the evaluation conclude that "The overall effect on participants of implementing a SmartCard system for the delivery of WIC benefits would be an unqualified positive effect" (Moore 1991). Similarly, retailers and WIC staff were extremely supportive of the SmartCard system.

". . . top twenty-five innovations in the country from over 1500 candidate projects."

Wyoming Pilot Recognized Nationally

Wyoming's pilot test of SmartCards off-line has garnered national attention. The Ford Foundation, in conjunction with the John F. Kennedy School of Government at Harvard, has selected the Wyoming pilot as one of the top twenty-five innovations in the country from over 1500 candidate projects. If the project is selected as one of the top ten later this year, Wyoming will receive a $100,000 award. In addition, the national industry group for SmartCard technology voted the Wyoming pilot as the year's best application of this type of technology.

Expanding on the Wyoming Pilot: the "Health Passport"

The WIC information takes up very little space on each computer chip. The SmartCard system could therefore be expanded to record transactions for other federal and state transfer programs,

health and immunization records, pharmacy purchases, and a host of other related health and nutrition information for the individual. An expansion such as this embodies the concept of a "health passport".

". . . provide services and benefits in an efficient, effective and non-duplicative manner."

The concept of a "health passport" is "to apply emerging technology...to improve access to statewide health services by families and individuals" (Williams 1992). The health passport is the extension of Electronic Benefits Transfer to other state and federal programs and health records, to provide services and benefits in an efficient, effective and non-duplicative manner. A study performed by the consulting firm of Arthur Andersen in 1990 showed that 43% of WIC mothers in Wyoming also participated in Medicaid; 33% in AFDC; and 46% in the Food Stamp program. These figures show the linkages that already exist on the receiving end of the programs. The health passport can be used to link the delivery of these programs.

The WIC director for the state of Wyoming, Terry Williams, outlined six basic benefits to off-line EBT in the development of a health passport.

1. It is fully interactive with currently available technology.
2. It is "user friendly", being activated simply with a Personal Identification Number.
3. It allows quick retrieval and addition of information.
4. It is highly secure.
5. It is portable, allowing both public and private health and benefits providers to integrate their programs on a single card for the participant.
6. It provides a highly accurate database for tracking benefits and evaluating overall program effectiveness and overlap. (Williams 1992)

". . . designing a test of a health passport using SmartCards in four states"

Wyoming and the Western Governors' Association are designing a test of a health passport using SmartCards in four states -- Idaho, North Dakota, Oregon, and Montana. The project will run for four years and test the integration of the WIC program in each state with one other program such as Medicaid, Food Stamps, pre-natal care, migrant health services, Headstart, or immunization records. The idea is to expand the SmartCard to other programs one at a time in order to isolate any special

circumstances, effects, or interactions specific to the added program. Ultimately, the goal is to deliver all EBT programs and health records for every eligible individual on one card.

FERC AND WESTERN STATES STRENGTHEN WORKING RELATIONSHIPS

States and the Federal Energy Regulatory Commission (FERC) have traditionally been at odds over relative authority under the Federal Power Act. A workshop sponsored by both WGA and the Western States Water Council in Park City, Utah a year ago, however, suggested the possibility of negotiating some of the differences to help both FERC and the states. As a consequence, Commission Chairman Martin Allday and WGA Chairman Mike Sullivan directed their respective staffs to seek opportunities for working together to improve FERC/state relations and the governance process.

". . . incomplete understandings of each other's roles, mandates, and processes."

Over the past year, WGA, the Western States Water Council, and FERC have held four meetings with state and FERC representatives to identify and carry out cooperative efforts. At the first meeting it became clear that both FERC and the states had very incomplete understandings of each other's roles, mandates, and processes. As a result, both sides agreed to prepare a Memorandum of Agreement to coordinate processes for licensing and relicensing hydroelectric facilities. The states of California, Idaho, Montana, Oregon, and Washington are taking the lead.

". . . learn from actual experience and test possible improvements. "

Issues being addressed include planning, developing the record for decisions, state participation in the FERC licensing process, securing necessary state water rights for FERC licensees, enforcing license conditions, resolving post-permitting conflicts, and ensuring dam safety. To help perfect the agreement, FERC and the states agreed to pick several projects to monitor as they progressed through the process. That would let negotiators learn from actual experience and test possible improvements. Hopefully, it will provide permitees with a problem solving mechanism as well.

During the discussions, other opportunities for action emerged. FERC changed language in a rule-making on fish flows and, in a draft environmental impact statement, recognized for the first time the need for applicants to secure state water rights. As a result of the talks, Washington has drawn up a separate

agreement with FERC for dam safety, and California is considering following suit.

After the Memorandum of Agreement is concluded, the western states and FERC have agreed to consider whether a broader, longer term assessment of the effectiveness of the process is needed. Both industry and environmental interests have indicated they are willing to participate, and so are federal agencies which are also affected by FERC actions.

Although FERC hydro licenses and processes are complex, expensive, and far reaching in their impacts, they are of limited interest to most people. The negotiations, if successful, will go a long way towards reducing costs, time, litigation, and general aggravation. The Memorandum of Agreement promises to be a little-heralded but significant model for improving governance.

". . . need to assess and protect the health of this resource before it reaches a crisis state. "

GREAT PLAINS GOVERNORS ACCEPT CHALLENGE TO MANAGE WILDLIFE ACROSS BORDERS

The western governors have invited their Mexican and Canadian counterparts to join with them in an experimental program to enhance the management of Great Plains (Central Flyway) migratory species and the ecosystems which support them. The governors see a pressing need to assess and protect the health of this resource before it reaches a crisis state. They want to bring responsible parties together -- from different countries, levels of government, business interests, nongovernmental organizations, and related projects -- in a coordinated effort to achieve sustainability for the region's human and wildlife populations.

". . . from all three nations to assess the status of flyway populations and of actions needed to protect necessary habitats."

The program will combine the exchange of information on species and their habitats with development of an integrated set of policies and mechanisms to improve stewardship. Case studies will be assessed to identify promising new approaches, and several demonstration projects will be selected to test new management regimes. While the massive scope and complexity of this problem call for innovation, the governors intend to ensure that any proposed cures aren't worse than the disease.

Getting Started

When Mike Hayden was governor of Kansas, the state appropriated $20,000,000 for restoration of Cheyenne Bottoms, a critical staging area for shorebirds as well as other migrating birds. The governor was concerned that if other states, Canadian

provinces, and Mexican states didn't also protect their parts of the flyway, the Kansas investment would be for naught. He asked WGA to serve as a convener for parties from all three nations to assess the status of flyway populations and of actions needed to protect necessary habitats.

At the 1991 WGA annual meeting in Rapid City, South Dakota, western governors, western premiers, and Mexican border governors met together for the first time. Agreement was reached to work together on a number of projects, including Governor Hayden's challenge to address the central flyway. A subsequent staff environmental policy forum in Winnipeg was convened to identify potential joint projects, and general agreement was reached that a Great Plains program should be cooperatively pursued.

Plans for the program have been refined since then. WGA has signed a cooperative agreement with the U. S. Fish and Wildlife Service to provide funding for the initiative. The Midwestern regional office of The Nature Conservancy and the International Association of Fish and Wildlife Agencies have contributed to the program's design. Representatives from Canadian provinces and the Canadian Wildlife Service, Mexican states and the Secretariat of Urban and Environmental Development (SEDUE), and numerous ongoing Great Plains conservation programs also have provided advice.

". . . improving the information base, enlarging and integrating the management tools, and addressing local concerns."

What next?

The program has three key tasks -- improving the information base, enlarging and integrating the management tools, and addressing local concerns. For the first task, The Nature Conservancy and U.S. Fish and Wildlife Service are collecting baseline information on the flyway. This information will be used to prepare summaries on species which migrate over some or all of the flyway. Critical information will include population distributions and trends to identify species needs and possible distress, and the institutional context for habitat protection (overlapping jurisdictions or gaps). Information will also be sought on economic and cultural values. An analysis of this information will be reported to the governors addressing whether management programs correspond adequately to species needs, and identifying areas of potential concern.

The second task involves enlarging and integrating the set of management tools available to meet the twin goals of sustainable human and wildlife populations. Good wildlife management practices are the most common means to protect sensitive areas.

Other strategies employed include land use regulation, land purchase, and litigation. These approaches all suffer from a tendency to be narrow, failing to take into account and balance competing needs. Often, they also result in resentment over loss of control by the "losing" party.

". . . identifying a broader range of policies and actions which the governors can promote as elements of a comprehensive solution."

WGA will be taking the lead on identifying a broader range of policies and actions which the governors can promote as elements of a comprehensive solution. These are likely to include agricultural, tax, and economic development policies, collaborative problem solving and consensus building, land management and wildlife management techniques, debt for nature swaps, and environmental policies and regulations. Selected case studies will be examined to identify promising models and innovative approaches. They will provide such technical details as species data, management techniques, impacts and outcomes, and funding options.

The third task, addressing local concerns, focuses on the users of these tools and those who are impacted. A special effort will be made to identify the competing interests whose cooperation will be necessary for advances to be made. Innovations for structuring local input and integrating it into management practices will be sought from the case studies.

". . . partnerships with organizations conducting related programs will be sought out . . ."

If findings warrant it, case studies will be used to guide demonstration projects which incorporate results from all three tasks. Participating states and provinces will confer with local communities, interest groups and others to identify candidate projects. Projects which focus on priority species/locations, demonstrate enhanced management, and incorporate local input will be sought.

Throughout the project, partnerships with organizations conducting related programs will be sought out, including the North American Waterfowl Management Plan, the Prairie Steward Partnership (Minnesota), The Nature Conservancy, the Western Hemisphere Shorebird Reserve Network, Partners in Flight, and others. The Environmental Protection Agency and the U. S. Department of Agriculture also have programs which contribute to protecting the flyway and will be encouraged to participate.

The Trilateral Interests

States and provinces from each of the three nations have ideas to contribute and gains to be made through participation in the project. Great concentrations of birds winter in Mexico; therefore, sound management of wintering grounds is critical for their well-being. Mexican states have new responsibilities in resource management and environmental protection, and collaboration could strengthen their efforts.

Critical breeding grounds for many species are located in Canada. Canada has placed strong emphasis on waterfowl and wetlands management (especially the province of Manitoba), and also has considerable experience in balancing wildlife management and economic development.

The U.S. has the longest stretch of the flyway, although the birds spend the least time here. While traveling, they depend on critical areas of habitat for sufficient food and resting places. Given the large concentrations in these areas, their degradation would lead to significant negative impacts. Many organizations in the U.S. have built up a track record supporting mitigation and enhancement which offer lessons for new initiatives. Clearly, each nation brings expertise and experience to the program.

". . . borders, whether institutional, state or national, are often simply lines on a map that cut across programs and can weaken their efficacy."

The western governors have come to recognize that borders, whether institutional, state or national, are often simply lines on a map that cut across programs and can weaken their efficacy. The North American West defies man-made boundaries, and wise stewardship relies upon our realization that we are in many ways, despite cultural and historical differences, one people and one land. The governors clearly recognize the need for innovations in cooperative management, and offer their Great Plains Program as an important experiment toward this end.

CALIFORNIA INNOVATES WITH WATER BANKING

". . . is one of the largest experiments in the country in controlled water marketing."

California's Emergency Water Bank, created in response to a four-year drought, is one of the largest experiments in the country in controlled water marketing. It allowed the state to move water to areas of critical needs during the drought. It also demonstrated the effect of pricing on both the supply of and demand for water -- that a significant amount of water could be made available in response to higher prices for water, and that urban providers would weigh and balance water conservation, tiered water pricing, and water saving technology with the state's selling price. Idaho has had a successful state water bank since 1979, but it has had more restrictions and has been used on a more limited scale.

California's water bank experience is an important innovation for dealing with limited supplies and increasing demands.

Historically, the national agenda to settle the arid West and promote economic growth meant that water was brought to the region through large federal projects. The water system that emerged is one of the West's primary assets, allowing development to take place which otherwise would have been impossible. Western water law evolved to protect users' investments based on secure water rights. This emphasis on security of rights, however, has presented barriers to transfer of water rights to other places or other uses.

". . . By allowing the market to send price signals about the value of water, incentives are provided for users to improve their efficiency and transfer their conserved water for a profit."

Today, growth in the West, combined with environmental and other concerns, has created more demands on the western water system than it can supply. In addition, public values have expanded beyond economic development to include efficiency of use, adequate instream flows, environmental protection, aesthetics and culture. True to economic theory, when the demand increases on a limited supply, the value of the resource increases. Evidence suggests that absent the barriers put in place in an earlier era, significant amounts of water would move to other uses in response to price signals.

The western governors have been leaders in encouraging needed changes such as water marketing to meet new demands. WGA's 1986 landmark report, "Western Water: Tuning the System" and a subsequent blue ribbon task force assembled by the governors endorsed efficiency enhancement as a primary goal of western water policy. The governors stated their belief that states should play the pivotal role in promoting more efficient use of water in the West through such means as voluntary water transfers, salvage and conservation of water, and conjunctive use of substitutable supplies of water.

Water marketing is increasingly being used as an option for providing water during times of low supply and for new uses. By allowing the market to send price signals about the value of water, incentives are provided for users to improve their efficiency and transfer their conserved water for a profit. Water banks are a tool to store conserved water and facilitate transfers.

California's Drought

In 1991, after four years of drought during which annual run-off averaged only slightly more than half of the normal amount, California was facing a critical water supply outlook. Major reservoir storage was down to 54 percent of average. For urban

water users the drought translated into stringent water rationing. Agricultural users faced severe cutbacks in production. Environmental needs were critically affected.

The Emergency Water Bank

Responding to the dire situation, Governor Pete Wilson created a state-operated emergency drought water bank to facilitate market-like water transfers. Under the water banking program, some farmers agreed to fallow their land or use ground water instead of surface water to irrigate their crops. They allowed their allotment of water from upstream reservoirs to be deposited in a storage "bank". This banked water was then available for purchase by customers with critical needs. These needs included drinking water, health, sanitation, fire protection, urgent agricultural needs (e.g. vines and trees), other municipal, industrial and agricultural uses, protection of fish and wildlife, and carryover storage for 1992. Water was then moved to meet critical needs through coordinated operation of California's state and federal water projects -- one of the world's largest "plumbing" systems.

". . . state-operated emergency drought water bank to facilitate market-like water transfers."

Most of the transfers of water were from the northern part of the state to the southern part. To get from the northern reservoirs to the southern aqueducts, the water passed through the Sacramento-San Joaqin Delta, a labyrinth of levees, islands and channels. Giant pumps pulled fresh water from northern rivers through the delta to fill the aqueducts at the delta's southern end. Excess freshwater, "carriage water", and careful timing was required of all of the transfers through the delta to maintain its environmental quality by preventing seawater intrusion or the concentration of other pollutants as large volumes of freshwater were removed from the delta.

". . . The state retained control over the bank to minimize third party impacts and to make sure that critical needs were met."

The state retained control over the bank to minimize third party impacts and to make sure that critical needs were met. The Department of Water Resources (DWR) was given the responsibility for operating the water bank including purchasing water from voluntary sellers and selling it to entities demonstrating a need.

A Water Purchase Committee was formed consisting of urban and agricultural public water supply agencies. The Committee worked with DWR to negotiate contracts and coordinate distribution through a centralized water transfer process.

DWR established a purchase price for water at $125/acre-foot, based on a decision that a fixed price was more efficient than negotiating a price with each individual seller. Because the water

bank initially focused on purchasing water from fallowed farmland, DWR recognized that the fixed price would have to provide a net income to the farmer similar to what he or she would have earned from farming plus an additional amount as an incentive to enter into a contract. DWR examined detailed farm budgets, spoke with potential sellers and buyers, and received advice from agricultural economists to arrive at the price of $125/acre-foot. The selling price was set at $175/acre-foot to cover the bank's purchase price, additional water to meet carriage water requirements for moving water through the Delta, and to meet delivery, monitoring and administrative costs.

". . . nearly 400,000 acre-feet of water were sold by the bank to cover critical urban and agricultural uses."

The Results

Ultimately, over 820,000 acre-feet of water were purchased for the water bank through 348 contracts. Of this, 51% of all the transferable water was freed up by fallowing or not irrigating farmland and transferring conserved irrigation water to the bank; 32% by switching from surface water supplies to groundwater; and 17% by transferring locally stored water to the bank. Due to heavy March rains the anticipated demand for the water did not fully materialize. Nevertheless, nearly 400,000 acre-feet of water were sold by the bank to cover critical urban and agricultural uses. About a quarter of the remaining water was used as "carriage water" for transferring contracted water through the Delta. The State Water Project (SWP) kept the remainder in upstream reservoirs as carryover water for 1992.

"Employment and economic gains generated in the water-importing regions of California outweighed the losses of water-exporting regions."

Positive Outcomes

Employment and economic gains generated in the water-importing regions of California outweighed the losses of water-exporting regions. A recent study prepared for DWR by three consultants, Richard Howitt, Nancy Moore, and Rodney Smith, determined that 1,153 jobs and $45 million resulted from the bank in importing agricultural regions. This exceeded the estimated 162 jobs and $13 million lost in exporting rural regions. Conservative estimates of benefits to urban areas from bank allocations were $91 million. These findings represent substantial overall benefits to California generated by the water bank.

Numerous anecdotes on the positive impacts and the win-win results of the bank were also recorded in the study. For example, millions of dollars of crops and urban landscaping survived the drought due to water bank reallocations. At the same time, some farmers that sold their irrigation water were able to harvest full or partial crops due to favorable timing of rains and a mild summer. Though there were complaints that farmers were allowed to

receive water bank payments as well as harvest a crop, it demonstrated greater flexibility in water supplies than previously demonstrated on this scale. In addition, sellers reported that they used their proceeds from bank sales to improve their lands. Improvements such as laser leveling and deep soils work, well and irrigation system enhancements, completion of deferred farm maintenance, and debt service and retirement were all reported.

The California water bank demonstrated the operational flexibility of the federal government's Central Valley Project (CVP) and the SWP. It showed how the projects' extensive "plumbing" could move water to areas of need, and how they could be managed to convey water through the Delta to minimize the impacts to and even supplement flows at critical times for fisheries. Finally, the pricing mechanism forced municipal and agricultural users to decide whether they needed all of their water and, if so, where they would get it. This advanced the areas of water conservation and reuse, conjunctive use techniques, and timing of deliveries to increase efficiency.

". . . advanced the areas of water conservation and reuse, conjunctive use techniques, and timing of deliveries to increase efficiency."

Third Party Impacts

Local Economies

Unintended effects on local agriculturally-based economies, the environment, and groundwater basins were the third party impacts of greatest concern. A preliminary assessment done by DWR identified certain crops that were fallowed and the general degree of impact that was expected to the industries and communities dependent on them. They identified the corn crop industries as bearing the heaviest overall economic impacts because corn accounted for more than one-third of the acreage that was fallowed or not irrigated. Similarly, there were significant impacts expected to industries related to sugar beet, asparagus, wheat and pasture crops.

The subsequent external evaluation done by Howitt, Moore and Smith, however, suggested that the acreage fallowed was well within the range of normal fluctuations. The anticipated dramatic impacts did not occur. In fact, in major agricultural counties the estimated reductions in total county income and the estimated loss in total employment were all under 1 percent. Though there are individual reports about hardships suffered by individual businesses, at this time negative effects do not appear to be widespread. This conclusion, however, is the subject of an in-depth study presently under way.

". . . water bank clearly made special efforts to minimize the impacts . . ."

". . . unexpected environmental consequence of fallowing corn crops and controlling weeds was the loss of a large portion of the winter food supply and nesting habitat for resident and wintering migratory waterfowl of the Central Valley flyway."

Environmental Impacts

Though the water bank clearly made special efforts to minimize the impacts to the environment during its operation, representatives of fish and wildlife groups were concerned about the water quality of the delta and the lack of mechanisms to allocate water for fish and wildlife. The water bank intended to treat the environment as another user to which it would sell water at $125/acre-foot. However, opportunities to purchase water at lower prices provided less costly alternatives to help meet fish and wildlife needs. Over 45,000 acre-feet of water was purchased for $50/acre-foot or less by the bank on behalf of the Department of Fish and Game. In addition the bank arranged for delivery of about 2,500 acre-feet of water to waterfowl areas where reduced tailwater resulted in water shortages. Despite these effort some environmental needs remained unmet. Delays in funding by the legislature inhibited the Department of Fish and Game's ability to purchase additional water to meet these needs.

In addition, an unexpected environmental consequence of fallowing corn crops and controlling weeds was the loss of a large portion of the winter food supply and nesting habitat for resident and wintering migratory waterfowl of the Central Valley flyway. This flyway provides wintering habitat for 20 percent of the continental waterfowl population, including 60 percent of the Pacific Flyway birds. Since less than 10 percent of the original Central Valley wetland acreage still exists, crop waste and nesting habitat is critical to the flyway's continued viability. According to the California Waterfowl Association, waterfowl typically consume about 100 pounds of waste corn and about 250 pounds of waste rice per acre. They estimated that nearly 6 million pounds of waste corn and 1.5 million pounds of waste rice were not available due to fallowing. In addition, about 6,000 acre-feet of rice tailwater which provided habitat were not available.

Groundwater Impacts

Possible negative impacts on groundwater resources were also of concern. During the drought, California dependence on groundwater increased from 40% to 60%. The shifts to groundwater were predominantly in the Sacramento Valley which covers the northern part of the Central Valley, where overdraft is presently not a problem. Sellers agreed to pump groundwater to irrigate crops and allow surface water to be transferred to the bank. Since irrigators in the Sacramento Valley have usually relied on surface water supplies, the hydrology and interconnections between basins and surface water supplies are not well understood. To address concerns about the effects of

exporting groundwater for use outside of the basin, contracts with land owners who shifted to groundwater and transferred surface water to the bank required that the seller meter the groundwater being pumped. The local water district, instead of the land owner, then released an equal amount of surface water to the bank in order to ensure that the pumped groundwater was used on lands overlying its source.

Some counties which rely heavily on groundwater resources and have documented ground subsidence from groundwater use were able to negotiate a monitoring program to study water levels and quality, aquifer characteristics, and subsidence, and to update the county water plans. This program was jointly funded by the water bank and the water sellers through 2 percent payments to the counties on any transfer of groundwater.

The impacts on groundwater did not appear to be great in the Sacramento Valley. Given that the groundwater of the Sacramento Valley is believed to be hydraulically connected to the Sacramento River, a concern exists that if groundwater use continues at the 1991 rate, non-bank and bank participants alike could experience reduced flows in the Sacramento River. They could also suffer lowered groundwater levels, increased pumping costs or costs for deepening wells, and subsidence. Changes in groundwater quality and the potential loss of the resource are long-term impacts of concern.

Unlike the Sacramento Valley, groundwater impacts in the San Joaquin Valley at the southern end of the Central Valley were dramatic. The annual overdraft jumped from an average of 1.2 -2 million acre-feet per year to 11 million acre-feet as farmers opted to pump their groundwater for their crops rather than pay $175 per acre-foot to the water bank or fallow their land. Though this overdraft is more a result of the drought and curtailed surface supplies than of the operations of the water bank, the choice to use groundwater by many of the farmers and the ongoing depleting of the resource indicates a price-induced response. This suggests possible room for modification in future water bank pricing or policy.

". . . dispelled two myths that have been used by critics of water marketing for years: 1) farmers won't sell their water, and 2) if they do, cities will buy so much of it that the agricultural economy and rural economy will be devastated."

Lessons

1) The 1991 water bank dispelled two myths that have been used by critics of water marketing for years: 1) farmers won't sell their water, and 2) if they do, cities will buy so much of it that the agricultural economy and rural economy will be devastated. The first myth emerged from agricultural users concerns about losing their water permanently under western water law's "use it or lose

it" requirement. No one expected that farmers would flag themselves as having "excess" water to sell. The second myth emerged from the observed thirst of urban areas and their interest in securing water for their growth, which historically has resulted in urban purchase and transfer of rural water rights. This myth has persisted in the face of evidence that only ten percent of agricultural's water use would need to be transferred to meet the needs of the projected population growth for the entire state well beyond 2010.

". . . The bottom line was that as much water was made available through the emergency water bank as would have been provided by a new dam costing about $3 billion -- and at virtually no direct public cost."

Neither myth has proven true. The water consultant, Richard Howitt, reported that at least three times as much water was sold to the water bank than was expected. The bottom line was that as much water was made available through the emergency water bank as would have been provided by a new dam costing about $3 billion -- and at virtually no direct public cost. In addition, cities did not buy all the available water in the bank. Apparently many cities balanced the benefits of tiered pricing and water-saving technology against the state's water bank selling price.

2) The high level involvement from Governor Wilson and DWR was critical to the emergency water bank's success. Sellers indicated to Howitt, et al. that, given all the uncertainty of the bank operations, they would not have sold water to the water bank if they had not had high-level assurances that DWR would stand by their contracts. Participants in the bank also expressed their preference that DWR manage the water sales in the midst of unresolved regulatory, legal, and political issues concerning trading water in California. Reduced transaction (staffing) costs, the need for consistency, and the ability of DWR to receive prompt approval from the State Water Resources Control Board were some of the reasons given for this preference. Doug Wheeler, California's Secretary for Resources, also emphasized the importance of state administration of the water bank to protect public interests under extraordinary circumstances.

3) Water came from places that state planners wouldn't have chosen. Market mechanisms drew out parties that were in a short-term position to transfer water. Caution was expressed about the economic findings, however. Though impacts to local economies may not have been as significant as was initially believed, many businesses indicated that they can survive one year of loss, but not consecutive or frequent losses. More could be done in the future to address both actual effects and the fears of effects. Specifically, the state could provide as much advance notice as possible to both the farmers and the local farm economies as well as make efforts to spread out possible negative

effects by restricting the amount of water transferred from any one locality.

4) The water bank experience demonstrated the disadvantages of setting a fixed price early in the season. Because the water bank established a fixed price to sellers, the state's flexibility to respond to supply changes was limited. Record rains fell in March just after the bank's buying price to sellers was set. The increased water supply caused a decrease in the demand for water. As a result, SWP, the underwriter for the Water Bank, ended up picking up the tab for more than 200,000 acre-feet of surplus water because there was no pricing mechanism to respond to the supply and demand shifts.

"The water bank experience demonstrated the disadvantages of setting a fixed price early in the season."

5) Environmental impacts will need to be addressed under future large-scale water banking efforts. In 1991, given the extremely critical nature of the drought, the bank was able to use the emergency exemption in CEQA, therefore avoiding the need to prepare an environmental impact report. This was never challenged. However, the environmental impacts and the potential local economic impacts from longer-term land fallowing are now more clearly understood. It is unlikely that fallowing land will be done again without the preparation of an environmental impact report.

The 1992 water bank dropped the purchase price for water to $50/acre-foot because of lower demands based on critical needs. At this price, there is no economic incentive for farmers to fallow their land. As a result, only those with groundwater alternatives or stored water will be encouraged to participate. Hence, the environmental and local economic impacts that occurred when extensive farmland was fallowed will not occur. This approach does not acknowledge the long-term concerns about the sustainability of and impacts to groundwater resources. There is also much less water available for transfer without fallowing land. For example, in contrast to 1991's 800,000 acre-foot water bank, this year's bank has only located 30,000 acre-feet for transfer at $50/acre-foot as of May 1992. If the state has to move large amounts to respond to continuing growth demands or drought conditions, the state will have to prepare an environmental impact report and find ways to address third party impacts.

Conclusions

The California emergency water bank experience demonstrates that a large-scale water transfer program can be implemented in less than 100 days with the help of the entire water community. It shows how a state could act quickly in the face of uncertainty and

demonstrates California's willingness to take a critical look at their activities to glean lessons and make adjustments.

"A forum of diverse California water interests all agreed that the water bank was a success, particularly given the short time frame within which it was pulled together."

A forum of diverse California water interests all agreed that the water bank was a success, particularly given the short time frame within which it was pulled together. One water user called it "a user friendly way to start water marketing." However, some pointed out that if the bank became institutionalized instead of just a response to an emergency situation, changes would have to be made. Many of the elements suggested for modification highlight historic questions or obstacles to water marketing: if it is a public water project, should farmers be able to reap the benefits of transfers; do individual growers or users have a right to transfer, buy, or sell water without obstruction by a district; how is the public interest addressed; should growers be able to receive multiple payments for fallowing their land under the water bank and under other federal programs; and how can bureaucratic turf obstacles be removed.

"As with any bold innovation, new questions will arise that need to be answered."

As with any bold innovation, new questions will arise that need to be answered. In addition to institutional, legal and political questions, environmental concerns need attention. Adjustments will need to be made to meet needs for fish and wildlife, wetlands, instream flows, water quality and endangered species. Groundwater resources need to be better understood and managed in a sustainable way. These environmental questions lead to broader questions about California's "carrying capacity" and how long it can continue past rates of growth and development.

Innovations can also open the door to more innovations. Creative multi-party agreements were negotiated in the midst of the drought to meet a variety of environmental and economic needs. In addition, there are numerous innovative examples of new water banking endeavors that are in place or being explored. The U.S. Bureau of Reclamation has conducted pilot studies of using wetlands for water storage to increase the amount of water available through the Central Valley Project. Storage in wetlands can improve the quality of the water stored, and releases from the wetlands can be timed to help the migration and spawning of salmon as well. Offstream storage of winter flows in rice fields outside of the growing season is being considered as well.

Using the islands in the California Delta (presently used for intensive farming) for storing water is another possibility for off-stream storage and flyway habitat. Water could be released from the islands to improve the quality of the Delta as well. New conjunctive use projects (injecting surplus surface water into

groundwater aquifers for future use) are being explored by the Metropolitan Water district of Southern California and Arvin-Edison Water Storage District (Kern County). Conjunctive use is already being applied around the West for urban and agricultural supplies in areas like Seattle, Washington and in Kern County, where a water bank has a subsurface storage capacity of approximately 1 million acre-feet. On a regional scale, California is proposing a water bank on the Colorado River that would function like an escrow account and be administered by a special forum created by the Colorado River basin states.

"On a regional scale, California is proposing a water bank on the Colorado River that would function like an escrow account and be administered by a special forum created by the Colorado River basin states."

These new efforts have been or will be part of solutions to many of the historic obstacles to water marketing. The positive response to California's Emergency Drought Water Bank, Idaho's long-term success with water banks, and local demonstrations of water banking innovations indicate that water banks may be an increasingly valuable tool to deal with rising demands on limited supplies in this era of change.

OTHER STATE PILOTS UNDERWAY

Mineral Revenue Collections/Audits. Royalties collection from mineral leasing on federal lands is presently done through the Minerals Management Service (MMS), a branch of the U.S. Department of Interior. In the last two fiscal years, the Congress has deducted 25% of the cost of collecting and distributing these royalties -- $68 million -- from the state share. The states believe this "cost" is excessive.

Working with the western Congressional delegation, WGA supported action directing the MMS to work with the Bureau of Land Management, the Forest Service, and the states to determine the extent to which states can collect mineral royalties more efficiently and less expensively than the federal government. The MMS also has been directed to report in its FY 93 budget request recommendations for revising its methodology for assessing mineral royalty collection and distribution costs by state.

". . . determine the extent to which states can collect mineral royalties more efficiently and less expensively than the federal government."

Improving Water Quality on Public Lands. Idaho's Department of Environmental Quality, the state's Department of Lands, the University of Idaho, the U.S. Forest Service Intermountain Forest Research Station, private interests and landowners, and Latah County are working cooperatively on a forest harvest and haul road restoration and stabilization project. The two-year project is designed to demonstrate the water quality gains which can be made from restoring forest harvest and haul roads. These roads

are the largest contributors of sediment to the local streams. The pilot is also demonstrating workable methods for restoration guided by modeling tools, as well as new partnerships in resource management.

". . . identify, communicate and coordinate actions related to the management of the region's public lands and resources."

Improving State/Federal Coordination of Land Management Plan Implementation. Oregon, the Bureau of Land Management (BLM), and the Forest Service (FS) are now finalizing a Memorandum of Understanding which will provide a process to identify, communicate and coordinate actions related to the management of the region's public lands and resources. The MOU provides a mechanism for continuing involvement in the development, implementation, monitoring and revision of land management decisions and land use plans. It also provides a framework for supervisors of individual programs and organizational units as they plan, implement and monitor land use actions.

Negotiations to develop the MOU have already resulted in closer cooperation between the three signatories who, together with Washington State, now hold regular meetings to share information on a broad range of regional natural resources issues. They discuss and provide information and input on BLM planning, FS plan implementation and plan adjustments (in particular proposed adjustments to the region's forest plans necessitated by the northern spotted owl recovery plan), and overall forest health. These regular meetings have been valuable in facilitating communication and information exchange on major regional issues. In addition, the relationships that have developed over the past year have created important new institutional linkages.

REGIONAL INNOVATIONS

WESTERN WATER MANAGEMENT EVOLVES RAPIDLY

The Park City Workshops

There is a growing "multiple crunch" in water management -- near-gridlock arising from changing demands for water resources in a period of rapid urban growth, recognition of Indian water rights, concern for instream and other environmental values, lack of support for new water projects, scarce public funds, conflicting and overlapping laws and programs, and polarized positions among competing parties.

Under the leadership of Governors George Sinner and Fife Symington, WGA joined with the Western States Water Council to sponsor a workshop in Park City, Utah to explore innovative solutions to the "multiple crunch" problem. The workshop attracted an unusual mix of representatives of the major players in water management -- state and federal agencies with water development and environmental responsibilities, tribes, local water utilities, environmental advocates, water users of all kinds, academics and elected officials.

Excited by the opportunities for change, participants called for a second workshop to clarify emerging "public interest" considerations in water and to explore how to respond to these interests in law and management practice. The first two workshops resulted in a set of guiding principles, an outline of characteristics of water policies and institutions for implementing the principles, and criteria for determining the public interest. A third workshop tested and refined these results through a series of case studies. The aggregate product has been called the "Park City Paradigm", a broadly supported new vision of what western water management should look like and how it should function.

". . . set of guiding principles, an outline of characteristics of water policies and institutions for implementing the principles, and criteria for determining the public interest."

Findings from the Workshops

The status quo isn't working well -- we are trying to solve new problems with old mechanisms.

There is a need for high level leadership to present a vision of the new paradigm that incorporates and broadens the historic emphasis on physical development of water for economic growth.

"Developing technical solutions and getting them implemented is less a problem than overcoming the reluctance to negotiate in good faith."

Developing technical solutions and getting them implemented is less a problem than overcoming the reluctance to negotiate in good faith. Attitudes, resources and motivation were seen as major obstacles to solving the region's water problems.

There are at least four levels of government that are essential to water management: federal, state, tribal and local (or watershed).

The federal level has the responsibility to address and represent overarching national concerns and interest. It should continue to exercise trust responsibilities, provide research on and financial support for national goals, and operate federal projects and systems.

States have the primary role in water resources management, including allocation of water supplies, administration of water rights, implementation of water quality protection programs, and protection of public water resources values. States should affirm responsibility for integrating public values now protected primarily by the federal government, by fashioning water laws and institutions responsive to the entire range of water values and interests, including those not traditionally recognized in water law and administration.

Indian tribes, as an aspect of their self-governing status, have authority over water on their reservation. Assertion of this authority varies from reservation to reservation, but tribes are expanding their capacity and management activities. Tribes asserting more authority over management of their water resources need to work with state and federal management agencies to coordinate allocation of supply, protection of water quality, and stewardship over the hydrological resource.

Local and substate/regional governments and private entities provide the greatest variety of institutions providing water resource services. These services include urban and industrial water supply, wastewater collection and treatment, irrigation, drainage, recreation, fish and wildlife enhancement, and environmental amenities. Traditionally, local entities have addressed single purpose functions. In the future, they must increasingly operate in the context of comprehensive regional development and resource protection.

The "problemshed" is the appropriate level to resolve complex water problems. The "problemshed" is the area that encompasses the problem to be solved and all the affected interests. The

problem should be solved at the lowest appropriate level of government.

Changing organizations was not seen as a priority. Changing institutional missions, decisionmaking processes, and empowerment, particularly at the "problemshed" level, was.

Park City Products

The Park City Principles:

Principles to guide water management at any level evolved from the first workshop. Although some criticize them as "motherhood and apple pie" they have now been affirmed in several tests of their usefulness. More than just ideals, they provide a reference point for managers to let them achieve what they want and avoid gridlock.

"More than just ideals, they provide a reference point for managers to let them achieve what they want and avoid gridlock."

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

Problems should be approached in a holistic or systemic way that recognizes cross-cutting issues, cross-border impacts and concerns, and the multiple needs within the broader problemshed. The capacity to exercise governmental authority at problemshed levels must be provided to enable and facilitate direct interactions and accommodate interests among affected parties.

The policy framework should be responsive, valuing diversity and economic, social and environmental considerations. Policies must be flexible and yet provide some level of predictability. In addition, they must be able to adapt to changing conditions, needs, and values, accommodate complexity, and allow managers to act in the face of uncertainty.

Authority and accountability should be decentralized within national policy parameters. This includes a general federal policy of recognizing and supporting the key role of states in water management as well as delegation to states and tribes of specific water-related federal programs patterned after the model of water quality enforcement.

Negotiation and market-based approaches as well as performance standards are preferred over command and control methods.

Broadly based state participation in federal program policy development and administration is encouraged, as is comparable federal participation in state fora and processes.

The Park City Criteria:

"The second workshop in water management defined "the public interest" -- what those interests are, who gets to speak for them, when they should be considered, and how they should be accommodated."

The second workshop in water management defined "the public interest" -- what those interests are, who gets to speak for them, when they should be considered, and how they should be accommodated. The following criteria were identified as measures or goals to guide a process to define the public interest.

equity -- all interests are treated fairly;

efficiency -- the process is expeditious while allowing fair treatment;

accessibility -- the process is accessible to all affected interests, even those without agency funding or senior positions;

feasibility -- the results can be implemented;

efficacy -- the results get the job done;

certainty balanced with flexibility -- the process balances the need for certainty among water rights holders with the need for flexibility to meet new needs or to adapt to improved ways of doing things.

The Park City Paradoxes:

At the third workshop it was recognized that there is no pat formula for good water management. Continuing tension from the following paradoxes will always require special attention as solutions to problems are crafted:

- the tradeoff between certainty and flexibility.
- the tradeoff between federal mandates as motivators for states and others to solve their own problems, as necessary sideboards for problem-solving, and as the cause of "Rube Goldberg" solutions (solutions distorted into perverse configurations by efforts to avoid triggering federal processes or sanctions).

- the tradeoff between data sufficiency and overkill (recognizing there is frequently a need to act in the face of incomplete information).

- the tradeoff between public involvement and expeditious decisionmaking.

- the tradeoff between fragmentation and tidy but potentially narrow and unrepresentative systems.

- the tradeoffs between individual rights and the public interest.

- the problem of "multiple problemsheds" (a basin with a number of issues, each of which involves a different problemshed. For example, the Missouri River Basin involves one set of states and interests if Corps operations are considered, another set if hydro generation is considered, and still another if water issues on a watershed basis are considered.

"States should begin playing a pivotal role by assessing their capacity to manage water."

Building on Park City

Strengthening State Capacity

The findings from the workshop and the Park City Principles yielded several recommendations. States should begin playing a pivotal role by assessing their capacity to manage water. Values and demands are changing, and, in order to respond appropriately, states will need to be able to determine the public interest -- balancing between current uses and rights and future needs. Assessing the public interest will require a review of current planning, policy, and decisionmaking processes. New skills for staff may require additional education.

". . . states. . . will need to provide the necessary technical assistance and resources."

The concept of the "problemshed" must be incorporated into important decisions. Oftentimes, the most effective level for implementing solutions will be the watershed -- relying on local people who understand the problem, the area, and how to make solutions work. Yet, states will need to provide the necessary technical assistance and resources. If states want to play a pivotal role, perhaps even assuming responsibility for additional federal water programs, they will need to internalize the values and concerns currently assumed by federal agencies. They will also need to step up to what has been a very problematic issue throughout the twentieth century -- designing and implementing effective mechanisms for basin management.

Clearly, a paradigm shift is underway, and official action is needed to secure it. Recommendations from the workshops on how that might occur include:

"Clearly, a paradigm shift is underway, and official action is needed to secure it."

A Blue Ribbon Panel chartered by the governors with participation of federal agencies, states, tribes and users to build understanding and support for the Park City principles in water policy-making and institution-building, and in the conduct of ongoing decisionmaking.

An accord such as the Great Lakes Charter, agreed to by states spelling out goals, principles, and mechanisms needed for basin and/or regional cooperation.

One or more of WGA's "Bringing the West to Washington" roundtables to convey to federal agencies, congressional committees, and others how states would like to work with federal programs to achieve more effective water management.

Findings of the Park City workshops disseminated more widely by forming a speakers' bureau, convening workshops, publishing materials, and developing videos.

Creating Partnerships with Federal Agencies

"Federal representatives pointed out that they are reexamining their roles and seeking opportunities for states and federal agencies to forge new arrangements."

Federal representatives pointed out that they are reexamining their roles and seeking opportunities for states and federal agencies to forge new arrangements. A better understanding of how the federal government addresses the public interest is needed -- what laws define it, how it is protected, and how it gets integrated into existing programs. Once that is understood, opportunities for partnerships and delegation to states will become easier.

Specific ideas for working together have emerged from the workshops. These include collaboration with FERC on licensing procedures, with the Corps of Engineers on the national drought study, and with The Fish and Wildlife Service on endangered species, cooperating with the Congressional Research Service on an upcoming water seminar, working with EPA on the Clean Water Act and 404 assumption, and cooperating with university-based water research institutes to analyze federal statutes and clarify public interest requirements.

Perhaps the most exciting result of the Park City workshops is the recognition that no one interest acting alone can solve the

problems and that participation by all interested and affected stakeholders is necessary. Each interest must act both in its own realm and in concert, to make the system work better.

GOVERNORS COOPERATE AND INNOVATE ON REGIONAL WASTE MANAGEMENT POLICY

"Western governors, recognizing that impacts from waste management decisions are not constrained by state boundaries, have embraced or invented regional mechanisms to deal with waste management policy."

Western governors, recognizing that impacts from waste management decisions are not constrained by state boundaries, have embraced or invented regional mechanisms to deal with waste management policy. These mechanisms have included a regional agreement on hazardous waste management capacity, a collaborative regional effort to develop a proposed federal mine waste regulation, and a regional waste protocol for sharing information on interstate impacts of in-state waste management decisions.

Hazardous Waste Dialogue

Congress, in 1987, amended the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), to require the governor of each state and territory to assure that their state has sufficient capacity to treat, store and dispose of all hazardous waste generated in the state for the next twenty years. In 1989, the first year requiring the assurance, no western state or Pacific territory had the capacity to handle all the types of hazardous waste produced in that state. It was also not feasible for any state to reach the goal through waste minimization. The penalty for not assuring capacity was the loss of Superfund construction money.

In response to this situation Governor Sullivan initiated an innovative regional response, which other western governors endorsed, to develop an interstate regional capacity assurance agreement. Thirteen western states and one Pacific territory joined the 1989 agreement.

The regional agreement places both the waste generated and the management capacity for hazardous waste into a collective or regional portfolio. This regional demand and supply picture is presented to EPA as a single total for the West. Additionally, the regional agreement does not make any attempt at assigning a geographic location for the development of new capacity, but rather presents the regional picture.

Governor Sullivan also recognized that without a forum for the states to discuss and resolve interstate waste issues, the

". . . states, industry, environmental groups, and federal agencies have been involved in an innovative approach to propose new federal regulations over the past year."

agreement would be short lived, or viewed as another imposition by the federal government. Therefore, a regional dialogue was established to discuss and resolve interstate waste management issues. Specific issues which have been discussed through the dialogue include: evaluating the changing picture of management capacity (both the emerging and retiring capacity), completing the 1991 and 1992 capacity assurance plan updates, examining the factors causing waste to move between states, monitoring states' progress in implementing waste minimization programs, and examining the states decision-making processes for moving cleanup waste off-site for treatment and disposal.

In 1991, Governor Bangerter of Utah assumed the "lead governor" role from Governor Sullivan, who became the vice-chair of WGA. Under Governor Bangerter's leadership, three additional states have signed the regional agreement. The West has also begun implementing aggressive state waste minimization programs and permitting additional treatment and disposal capacity to meet its changing economic structure.

Initially, the regional agreement served as a vehicle for the states to develop an understanding of their hazardous waste markets. The agreement also provided a process for resolving interstate issues prior to their escalation into border wars evident in other regions. In order to complete the picture of the western hazardous waste market, the flows and reasons for those flows between the West and its neighbors, Canada and Mexico, must be understood.

Cooperative Mine Waste Regulation Development

Through a grant from the Environmental Protection Agency, states, industry, environmental groups, and federal agencies have been involved in an innovative approach to propose new federal regulations over the past year. While States have been responsible for regulating mining and mine wastes, national concerns regarding the uneven nature of regulatory coverage among states moved both EPA and Congress to think about a national mining regulatory structure. Rather than develop draft regulations within the Agency, EPA provided funding to affected interest groups to develop position papers and work toward a consensus. The EPA created the Policy Dialogue Committee comprised of representatives of the affected stakeholders groups and hired the Keystone Center to facilitate the discussions.

Under Governor Bangerter's leadership, WGA established a Mine Waste Task Force with representatives of the major non-coal mining states -- from the West and from other regions.

The Task Force has both state mining and state environmental protection agency representation. The Task Force has proposed that, rather than develop a duplicative federal regulatory structure, the federal program rely on existing state programs. In addition, the Task Force position gave states flexibility in designing state-specific programs to meet broad national goals rather than relying on a traditional "one size fits all" regulatory approach.

The state representatives have moved the other interest groups toward a middle ground position. Representatives Swift (WA), Schaefer (CO), and Richardson (NM) adopted the states' position and incorporated it into proposed legislation reauthorizing the Resource Conservation and Recovery Act. The Task Force will continue to work in partnership with EPA to develop guidelines and subsequent regulations to incorporate the legislative mandate into EPA regulation.

". . . waste issues do not conform to political boundaries and policies adopted to manage waste in one state will impact waste management in another state, the western governors negotiated and signed an innovative regional waste protocol last year. "

Regional Waste Protocol

Few states have the capacity to treat and dispose of all types of wastes generated within their borders. Western states are dependent on one another for the management of solid, biomedical, hazardous, and low level radioactive waste. The federal government, primarily through the Department of Energy and the Department of Defense, has created significant waste sites in the West. In many western states, the magnitude of the problems at these sites dwarfs other waste management problems.

Recognizing these realities and that waste issues do not conform to political boundaries and policies adopted to manage waste in one state will impact waste management in another state, the western governors negotiated and signed an innovative regional waste protocol last year.

The purposes of the protocol are to enhance communication among western state governors on waste management issues, to establish a notification process for affected neighboring states on waste facility siting decisions, and to establish regional principles for waste management.

The governors pledged to take the following steps:

1. to encourage the minimization of waste in private production processes and to do everything economically and environmentally practical to ensure that wastes generated in their states are treated and disposed of in-state before resorting to export.

2. to notify and consult with each other over state decisions regarding waste management that may impact other western states. Issues which will trigger notification and opportunity for comment include: facility siting, fee levels, changes in statutes or regulations, cleanup wastes, and transportation impacts.

3. to share information on state-federal agreements for federal site cleanup to ensure that each state in the region has the best agreement possible. This information sharing will occur at least annually.

4. to share information on successful state waste management strategies.

5. to cooperate to the degree possible to develop regional markets for recycled products. This cooperation will include, but not be limited to, working toward common standards and definitions for recycled materials and ensuring that state policies do not discourage the interstate flow of materials for legitimate recycling.

6. to continue to work cooperatively to ensure that the West is treated fairly in national waste management policy decisions. This will include, but not be limited to, supporting Congressional action to give states more control of out-of-state solid waste, including differential fees and regional agreements or compacts.

". . . frustrations that national environmental policy does not always account for regional variations in climate, topography, rainfall, and settlement patterns as well as realizations that traditional command and control strategies may not always be effective in curbing pollution."

Creating a New Framework for Environmental Policy

Working cooperatively on policy development for specific waste streams and signing the regional waste protocol has generated broader discussions among governors on environmental policy in the region. These discussions have centered around frustrations that national environmental policy does not always account for regional variations in climate, topography, rainfall, and settlement patterns as well as realizations that traditional command and control strategies may not always be effective in curbing pollution.

The governors took up these concerns with EPA Administrator Bill Reilly last year and he agreed that a new framework for environmental policy in the region needs to be developed and tested. In response, WGA is embarking on a project in which states and federal agencies will work together in new ways with other concerned individuals and organizations.

To realize this new framework, the project will integrate and test four policy innovations that offer great hope for solving western problems: ecosystem management/geographic targeting; comparative risk analysis; employment of effective combinations of alternative strategies (e.g. market based incentives) to address top priority environmental risks; and the building of consensus partnerships. To illustrate the new framework, demonstration projects will be designed by states, in cooperation with EPA and other key players, and it is anticipated that some of the projects will receive waivers and funding to move to fruition.

Governor Pete Wilson is WGA lead governor for the project, lending his name and the prestige of his office to assist with obtaining any necessary administrative or congressional waivers for the demonstration projects. The project will be a central focus of incoming Chairman Governor Fife Symington and is the outgrowth of current Chairman Governor Mile Sullivan's efforts in improving governance in the West.

"The goal of the project is greater progress in meeting regional environmental challenges . . ."

The goal of the project is greater progress in meeting regional environmental challenges -- through approaches that are more effective than the status-quo, targeted on the most serious environmental risks, more suited to the specific geographic circumstances encountered in the West, more easily internalized by western businesses and industries, and more clearly understood by the public. The project should also yield benefits beyond specific reports produced and demonstrations conducted. It will engender a more productive partnership for addressing environmental concerns, composed of a wider group of stakeholders and with fewer unintended consequences and political surprises. Furthermore, the West may be able to harvest more resources for special western environmental concerns despite tight state and federal budgets through creative planning and innovations. Supporters of the project will be helping the West found a new, more responsible legacy toward its environment at a time of crucial challenges.

". . . resource limitations and significant environmental and energy demands of the 1990s require new approaches . . ."

INNOVATIONS IN ENERGY

Western Interstate Energy Board

The search for better ways to meet environmental and energy objectives has been a long-term initiative in the West. Throughout the 1980s, successful new institutional innovations, such as the creation of joint federal-state coal leasing teams to determine where, when and under what conditions to lease federal coal, have shown how environmental and energy objectives can be met through innovation in governance.

". . . put energy efficiency on an equal footing with supply-side electricity generation options."

"Two western states have adopted, and more are considering establishing, procedures for accounting for environmental externalities of electricity generation."

But the resource limitations and significant environmental and energy demands of the 1990s require new approaches, including methods which harness the power of the market place. Major initiatives are underway in the West to alter the incentive structures in order to achieve energy and environmental objectives. While the use of market-based alternatives has great theoretical appeal, difficult issues must be addressed if the West is to capture the economic efficiencies embodied in market-based solutions. Following are a few examples of innovations in governance being pursued by western states and the Western Interstate Energy Board.

Energy Efficiency

Western states and utilities have taken the lead in changing traditional utility ratemaking policies to put energy efficiency on an equal footing with supply-side electricity generation options. Regulatory incentives, such as shared savings and compensation for lost revenues, alter the traditional utility focus on supply-side options. Bidding for new demand-side and supply-side resources has introduced competition into the electricity sector and vastly expanded the economical resource options available to meet the West's electricity needs. Much remains to be learned about attributes of successful utility efficiency programs and appropriate regulatory incentives. The sharing of experiences among states on the successes and failures of regulatory innovations plays an important role in keeping costs to ratepayers low and providing fair treatment to the region's utilities. The Energy Board is providing the forum for western states to learn from each another's experiences.

Environmental Externalities

Economists of all stripes have argued that for the market to reach optimum economic decisions, the price of a product must reflect its full costs and benefits to society. The difficulty is in translating this principle into practice. Two western states have adopted, and more are considering establishing, procedures for accounting for environmental externalities of electricity generation. This extremely difficult task is made more complex by the fully integrated character of the western electricity system, which also includes parts of western Canada and Mexico. Appropriate procedures will need to be developed if environmental externalities from electricity production and use are to be accurately reflected in the electricity market place. This will require new approaches within each state and coordinated action among the states. The Western Interstate Energy Board, working with the Western Conference of Public Service Commissioners

and western utilities, are working for an appropriate accounting for environmental externalities from electricity production.

Electricity Trades for Environmental Protection

For many years, western utilities have bought and sold electricity among themselves to improve their economic position. The diversity in the electrical loads and generation sources in the West have made such sales economic. These power sales have contributed to the creation of a vast transmission network in the West. This transmission system can also be used to facilitate electricity exchanges to improve the environment. For example, increased electricity exchanges between the Northwest and Southwest can help increase water flows during critical times to protect fish in the Columbia River system, while reducing air emissions during high pollution times in the Southwest. The Western Interstate Energy Board has been fostering the discussion among states and utilities on the expansion of such exchanges.

New Technologies

There are many traditional state functions, such as regulation of coal mine reclamation, which are designed to protect the environment while allowing needed energy development to occur. New computer technologies are available to speed state review of mining plans, increase public access and understanding of mining issues, and reduce permitting demands on industry. Such technologies, however, are frequently beyond the financial and personnel resources of individual states or federal agencies. Joint access to needed computer hardware and software can resolve these resource limits and reduce the inherent friction between states and federal agencies on technical issues. The Western Interstate Energy Board is working with the federal Office of Surface Mining to expand access to such technologies and related training by state coal mine reclamation agencies.

The introduction by the State of Utah and other states of portable solar-power water pumps into ranching activities can help resolve the long-term western problem of protecting riparian habitat from damage from cattle grazing. Portable solar water pumps allow stock access to water supplies while permitting critical habitat areas to be fenced off. The portability of the technology allows ranchers to move the equipment to different pastures with the herd. Such innovative application of technology has helped to resolve traditional land management disputes by protecting the environment while permitting productive use of the land.

"New computer technologies are available to speed state review of mining plans, increase public access and understanding of mining issues, and reduce permitting demands on industry."

INNOVATIONS IN HIGHER EDUCATION

Western Interstate Commission for Higher Education (WICHE)

Seeking a More Diverse College Faculty

". . . an increasingly diverse student composition requires an equally diverse faculty . . ."

The face of our college campuses has changed. A new generation of students is infused with increasing numbers of ethnic and racial minorities, many of them from different educational, economic, linguistic, and social backgrounds. Colleges and universities enroll more part-time and older students who must juggle education demands against current employment or the uncertainties of career retraining, and more displaced homemakers and single parents who lack the traditional family support systems. Studies make it clear that an increasingly diverse student composition requires an equally diverse faculty if educational success is to be optimized. As state higher education systems adjust to serve this "new majority" of ethnically and racially divergent students, it becomes imperative to diversify the teaching ranks as well.

Historically, however, very few Hispanic, African-American, and Native American students proceeded through doctoral programs and into college teaching and research careers. Numerous efforts are underway throughout the nation to attract minority group students into undergraduate programs, but less has been done to increase the pool of minorities who continue their education through graduate programs and into academic ranks.

In the West, former Governor Garrey Carruthers provided impetus for a program to develop more minority members in his state of New Mexico. That effort, along with a similar interest developed by Arizona's state higher education agency, came before the Western Interstate Commission for Higher Education (WICHE) in 1990 for discussion and action.

Over the past 18 months, WICHE has designed its response, a regional Minority Doctoral Scholars Program aimed at increasing the pool of minority students in graduate programs. Supported by recent grants from two national foundations, WICHE is spearheading an intensive 18-month planning period in which it will work with interested states to shape a practical program that will attract and support minority students in doctoral programs followed by academic service in their home state or elsewhere in our region.

Higher Education and the Economy of the West

Higher education's linkage to the economy of each state and to the entire region is being re-evaluated -- and hopefully strengthened -- as government and the private sector grapple with the new realities of international economic competition.

Initially, the discussion focused on immediate goals and actions, such as correcting skill deficiencies and fostering technology transfer from research laboratories to commercial enterprises. As our economic re-adjustment extended over time, it became apparent that a multitude of issues are integral to higher education's role in today's knowledge-based and global economy. A broader and deeper understanding of those roles is essential in fashioning higher education's positive contribution to new economic demands.

"Higher education's linkage to the economy of each state and to the entire region is being re-evaluated . . ."

The Western Interstate Commission for Higher Education (WICHE) is completing a two-year study that analyzes higher education's significant and complex relationship to the economy. The regional commission, appointed by western governors, this month issues recommendations for colleges, universities, states, and localities to collaborate and change in productive ways to buttress higher education's involvement and contributions to the economy.

An overriding issue in the West is higher education's need to adjust to an increasingly diverse student clientele, many of whom are from disadvantaged backgrounds. Some specifics that can be used to meet the economic and student requirements of the 1990s include the following: a greater commitment to effective collaboration with other educational and economic segments; more effective use of educational technologies; a revised and stronger undergraduate curriculum, especially one that stresses global understanding; and increasing the productivity of faculty through incentives and revised rewards structures.

This effort charts a path by which state government, public education, and the private sector can work closely together in order to fortify and to strengthen the links between them.

MAKING INDIAN WATER RIGHTS SETTLEMENTS WORK

Western States Water Council

The Western States Water Council cosponsored with the Native American Rights Fund an innovative symposium on the

". . . an important and perhaps historic effort by Indian and non-Indian people to engage each other in addressing a very contentious issue in the West: the quantification of Indian water rights."

settlement of Indian water right claims last September in Albuquerque, New Mexico. Over 200 individuals representing the Administration and Congress, states and tribes from around the West, public and private water users, and other interests participated. The symposium was arranged to provide an opportunity to learn about the methodology of Indian water right settlements. Two special events supplemented several panel discussions. First, at the invitation of Governor Harry Early, participants attended the St. Joseph's Day Fiesta at the Pueblo of Laguna on one afternoon, which set the tone for the many hundreds of informal social interactions that surrounded the symposium. The second event was a luncheon featuring Eluid Martinez , New Mexico's State Engineer, and New Mexico Attorney General, Tom Udall, both of whom emphasized their state's commitment to negotiations and cooperation with the pueblos and the tribes.

Describing the symposium, John Thorson, the Arizona General Stream Adjudication Special Master, said the symposium was "an important and perhaps historic effort by Indian and non-Indian people to engage each other in addressing a very contentious issue in the West: the quantification of Indian water rights." He described the effort of the two sponsoring organizations as one "to explore how this quantification can proceed in a way that minimizes litigation and builds relationships for long term water management. Their leadership in sponsoring the symposium will undoubtedly accelerate the fragile trust and good feeling that is developing between state and tribal governments and among western people."

Mr. Thorson's favorable comments, soon to be published in a law review article, were echoed by many other participants. As a result, the Water Council and the Native American Rights Fund are sponsoring a second symposium on the subject of the settlement of Indian reserved water right claims to be held this September in Albuquerque. This symposium will feature a similar format and will address some of the same subjects, but will also address difficult issues of administration of water rights within the exterior boundaries of an Indian reservation, and the off-reservation lease and sale of Indian water rights.

This improvement in relationships builds on the efforts of the Ad Hoc Group on Indian Water Rights and signifies the trend toward cooperation rather than confrontation in dealing with important water management issues in the West.

CONCLUSIONS

For much of its history, governance in the West was predicated on two notions: that our vast natural resources would provide a seemingly limitless source of income, and that certain major development projects, like water and transportation, would be addressed through the largess of federal appropriations and incentives.

The world has changed. Our natural resources are not infinite or always accessible, so our imagination and creativity must be limitless. Not only is the federal government no longer in a position to solve so many of our problems, but we recognize it is not desirable to be so reliant on others. Instead, we must be full partners with our national leaders, with each other, with the private sector and with all people who reside within our borders.

Through the pilot projects and regional innovations described in this report, the western governors have looked for practical combinations and feasible measures to solve the region's problems and serve the public interest. The chief goal of these efforts has been to move from promising theory to demonstrated practice by taking on problems that are manageable and representative of broad regional concerns and attacking them with creativity and open mindedness.

The lessons in this report are manifest and encouraging: the equivalent of a three billion dollar water reservoir was obtained at little public expense by allowing market mechanisms and economic incentives to govern water supply and demand in lieu of dams and canals. A new technology, SmartCards, was applied to the problem of delivering food and medicine to eligible women with infant children, resulting in less cost to the store owner, less frustration for the recipient and great promise for integration and lower administrative costs for benefit programs under the "health passport" initiative. Shared concern and renewed interest in new paradigm for regional water policy has been developed from among competing interests and agencies. The same is true for the region's approaches to environmental policy.

The prospects for the future described in this report are bright: state and provincial governments are testing the notion of working together to protect migratory birds in the "Great Plains" program. Their action would come before costly and controversial regulatory protections are tripped, such as U.S. endangered species provisions, and their efforts will bring contributions from three different countries to the table in ways that may instruct future international environmental projects. By developing "A New Framework for Environmental Policy" the region is stepping up to the task of defining its own environmental agenda cooperatively with EPA and other interests. This effort will focus scarce resources on innovative solutions to the problems that pose the highest risks to our health, ecosystems and quality of life. And, by looking at market opportunities at home and abroad for the region's environmental services and technology industry and by helping new technologies emerge, a hugely expensive clean-up effort at public and private facilities in the West may be able to pay back dividends through commercial opportunities.

These lessons and future prospects -- for better policy and a stronger, more competitive region -- have come only after great effort. And, more effort will be required. Here in the West, the most geographically expansive region in the nation, we value a good neighbor whether to help plant a tree or put out a fire. The West must now merge this same spirit of cooperation, collaboration and conciliation with the region's can-do spirit to replace any lingering view that our problems can be solved by someone else. Let the message be sent forth that the West has come into its own, and that we are ready to lead the nation into better ways to govern and to serve.

Western Governors' Association
600 17th Streeet
Suite 1705, South Tower
Denver, Colorado 80202