

Issue Brief for Congress

Received through the CRS Web

Western Water Resource Issues

Updated August 22, 2002

Betsy A. Cody
Resources, Science, and Industry Division

CONTENTS

SUMMARY

MOST RECENT DEVELOPMENTS

BACKGROUND AND ANALYSIS

Legislative and Oversight Issues

 Security of Reclamation Facilities

 Klamath River Basin

 Title Transfer

 Project Construction

 California Bay-Delta/CALFED

 Rural Water Supply Projects

 Title 16 Projects

LEGISLATION

FOR ADDITIONAL READING

Western Water Resource Issues

SUMMARY

For more than a century, the federal government has constructed water resource projects for a variety of purposes including flood control, navigation, power generation, and irrigation. While most municipal and industrial water supplies have been built by non-federal entities, most of the large, federal water supply projects in the West, including Hoover and Grand Coulee dams, were constructed by the Bureau of Reclamation (Department of the Interior) to provide water for irrigation.

Growing populations and changing values have increased demands on water supplies and river systems, resulting in water use and management conflicts throughout the country, particularly in the West, where the population is expected to increase 30% in the next 20-25 years. In many western states, agricultural needs are often in direct conflict with urban needs, as well as with water demand for threatened and endangered species, recreation, and scenic enjoyment.

Debate over western water resources revolves around the issue of how best to plan for and manage the use of this renewable, yet sometimes scarce and increasingly sought after, resource. Some observers advocate enhancing water supplies, by building, for

example, new storage or diversion projects, expanding old ones, or funding water reclamation and reuse facilities. Others emphasize the need to manage existing supplies more efficiently — through conservation, revision of policies that encourage inefficient use of water, and establishment of market mechanisms to allocate water.

The 107th Congress is considering a number of bills on western water issues, including several title transfer and wastewater reclamation and reuse bills. Several bills addressing implementation of a Record of Decision on a program (known as CALFED) to restore fish and wildlife habitat and address California water supply/quality issues have been introduced. Additionally, several oversight issues may be addressed, including oversight of the Central Valley Project Improvement Act (e.g., contract renewals and water allocation), and management of the Columbia, Snake, and Colorado River Systems. The 107th Congress may also consider one or more Indian water rights settlement bills. In light of events September 11, 2001, the Congress has increased appropriations levels for security activities to protect the Bureau's critical infrastructure.

MOST RECENT DEVELOPMENTS

On July 25, 2002, the House Subcommittee on Water and Power marked up the Colorado River Quantification Settlement Facilitation Act (H.R. 5123), but the bill was not reported from the subcommittee. H.R. 5123 provides that four Southern California Water Agencies “should contribute a combined \$50 million to mitigate the effects of the water transfers on the Salton Sea” and would eliminate the liability of the agencies under any federal law with respect to the water transfers. H.R. 5123 would also authorize an additional \$60 million in federal funds for habitat restoration projects at or near the Salton Sea.

The House Resources Committee conducted a field hearing on June 14 to examine the progress of California in reducing its reliance on water from the Colorado River. California was allocated 4.4 million acre feet of water per year from an interstate compact created in 1922. For several years, California has been using more than its allocation of water under the compact, while other participating states developed projects and grew enough to use their full allocations. Participating states in the compact have recently begun to demand their share of the water and have requested that California reduce its use of Colorado River water.

On May 31, 2002, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service both issued Final Biological Opinions finding jeopardy on the Bureau’s 10-year Operation Plan for the Klamath Project; however, on June 3, 2002, the Bureau formally rejected both Final Biological Opinions, but opted instead to operate under a one-year plan that it asserts complies with the Opinions. The action pertains to the issue of how much water farmers and other water uses in the Klamath River Basin will receive from Bureau of Reclamation irrigation projects in the Upper Basin.

On June 5, the Senate Energy and Resources Committee approved and ordered reported an amendment (introduced by Senator Feinstein) as a substitute to S. 1768 that would reauthorize the California Bay-Delta Restoration Program (CALFED). The bill was subsequently reported on June 24 and placed on the Senate Legislative Calendar. The amendment reduces the authorization for Stage 1 activities under the CALFED Program from 5 years to 3 years, reduces the authorization for appropriations from \$2.4 billion to \$1.6 billion, and includes authorization for funding for a list of specific activities under each of the CALFED Program components. A new bill (H.R. 4657) authorizing implementation of the CALFED Program was introduced by Representative Napolitano on May 2nd. This bill is similar to the earlier version of S. 1768 except that it includes authorization for certain water re-use and recycling projects, as well as studies on desalination. On November 7, the House Resources Committee marked up and ordered reported H.R. 3208 (reported on February 14, 2002, H.Rept. 107-360, Part I.), a bill to authorize certain water supply and environmental activities associated with the CALFED program, as well as other programs. The bill effectively replaces H.R. 1985, which had been marked up by the Water and Power Subcommittee on September 13, 2001.

BACKGROUND AND ANALYSIS

For more than a century, the federal government has been involved in developing water projects for a variety of purposes including flood control, navigation, power generation, and irrigation. Most major water projects, such as large dams and diversions, were constructed by either the Bureau of Reclamation (Bureau), in the Department of the Interior, or the U.S. Army Corps of Engineers (Corps), in the Department of Defense. Traditionally, the Corps has built and maintained projects designed primarily for flood control, navigation, and power generation, whereas Bureau projects were designed primarily to facilitate settlement of the West by storing and providing reliable supplies of water for irrigation and “reclamation” of arid lands. While both agencies supply water for some municipal and industrial uses, they do so largely as a secondary responsibility in connection with larger multi-purpose projects. Most of the Nation’s public municipal water systems have been built by local communities under prevailing state water laws.

Today, the Bureau operates nearly 350 storage reservoirs and approximately 250 diversion dams – including some of the largest dams in the world, such as Hoover Dam on the Colorado River and Grand Coulee Dam on the Columbia River. In total, the Bureau’s projects provide water to approximately 9 million acres of farmland and nearly 31 million people in 17 western states. The Bureau also operates 58 power plants. Because of the strategic importance of the Bureau’s largest facilities, the Bureau has heightened security at all key facilities to protect projects in the wake of the terrorist attacks on New York and the Pentagon on September 11, 2001.

Most Bureau water supply projects were built under authority granted to the Secretary of the Interior in the Reclamation Act of 1902, or through individual project authorizations. The original intent of the Reclamation Act was to encourage families to settle and farm lands in the arid and semi-arid West where precipitation is typically 30% to 50% of what it is in the East. Construction of reclamation projects expanded greatly during the 1930s and 1940s, and continued rapidly until the late 1960s and early 1970s. By the late 1960s, a combination of changing national priorities and local needs, increasing construction costs, and the development of most prime locations for water works contributed to a decline in new construction of major water works nationwide. Water supply for traditional off-stream uses — such as municipal, industrial, and agricultural uses — was increasingly in direct competition with a growing interest in allocating water to maintain or enhance in-stream uses, such as recreation, scenic enjoyment, and fisheries and wildlife habitat.

During the 1970s, construction of new projects slowed to a handful of major works, culminating in the completion of the Tellico dam project in Tennessee and the Tennessee Tombigbee waterway through Alabama and Mississippi. These projects pitted conservation and environmental groups, as well as some fiscal conservatives, against the traditional water resources development community. New on the scene was the National Environmental Policy Act of 1970 (NEPA), which for the first time required an assessment of the environmental effects of federal projects, and provided for more public scrutiny of such projects. In 1978, President Carter announced that future federal water policy would focus on improving water resources management, constructing only projects that were economically viable, cooperating with state and local entities, and sustaining environmental quality. The Reagan Administration continued to oppose large projects, contending they

were fiscally unsound. New construction of federally financed water projects virtually stopped until Congress passed the Water Resources Development Act (WRDA) of 1986, which addressed Corps projects and policies. Federal water research and planning activities were also reduced during the early years of the Reagan Administration, which felt that states should have a greater role in carrying out such activities. Consistent with this outlook, President Reagan abolished the Water Resources Council, an umbrella agency established in 1968 to coordinate federal water policy and to assess the status of the nation's water resource and development needs.

Congress subsequently scaled back several remaining authorized projects, changed repayment and cost-share structures, and passed laws that altered project operations and water delivery programs. For example, in 1982 Congress passed the Reclamation Reform Act, which altered the Bureau's water pricing policies for some users. The Act revised acreage limitation requirements and charges for water received to irrigate leased lands. Congress soon increased local entities' to share construction costs for Corps water resource projects with passage of the 1986 WRDA.

Over the last decade, both the Corps and the Bureau have undertaken projects or programs aimed at mitigating or preventing environmental degradation due in part to the construction and operation of large water projects. The agencies have pursued these actions through administrative efforts and congressional mandates, as well as in response to court actions. Currently, the federal government is involved in several restoration initiatives, including the Florida Everglades, the California Bay-Delta, and the Columbia and Snake River basins in the Pacific Northwest. These initiatives have been quite controversial. Each involves many stakeholders at the local and regional level (water users, landowners, farmers, commercial and sports fishermen, urban water suppliers and users, navigational interests, hydropower customers and providers, recreationists, and environmentalists) and have been years in the making. At the same time, demand for traditional or new water resource projects continues — particularly for ways to augment local water supplies, maintain or improve navigation, and control or prevent floods and shoreline erosion. In addition, demand from some sectors for a few long-discussed large water supply projects continues (e.g., the Animas-La Plata Project (CO), the Garrison Diversion Unit (ND), and the Auburn Dam (CA)).

Legislative and Oversight Issues

The 107th Congress is considering several water resource issues in legislation ranging from transferring title of federal facilities to local project users, to individual project authorizations and agency policy changes (e.g., reoperation of water project facilities in the Central Valley of California and in the Colorado and Columbia River Basins). Oversight of ongoing agency activities, such as water management in the Klamath River Basin, implementation of the Central Valley Project Act (P.L. 102-575, Title 34), and authorization of a program to carry out activities affecting the delta confluence of the San Joaquin and Sacramento Rivers at the San Francisco Bay (Bay-Delta, or CALFED) are also being discussed. Funding and policy direction through the annual Energy and Water Appropriations bill also influences the construction and operation of projects. (See CRS Report **RL31007**, *Appropriations for FY2002: Energy and Water Development*.) In

particular, appropriations language concerning funding (or lack thereof) for the CALFED program has been the subject of much debate.

Security of Reclamation Facilities

Security remains heightened at Bureau facilities in the wake of terrorist attacks in New York and Washington D.C. on September 11, 2001. The Bureau initially closed visitor facilities and cancelled tours at all facilities. While most visitor facilities have reopened, tours, some facilities remain closed to tours. Additionally, roads over some dams remain closed at night. Legislation to strengthen federal law enforcement at Bureau facilities was introduced following the September 11 attacks (H.R. 2925 and S. 1480). The House passed H.R. 2925 on October 23; the Senate passed the bill on October 30. It became P.L. 107-69 on November 12, 2001. For more information on water supply infrastructure more generally, see the Water Infrastructure Supply page in the CRS electronic briefing book on terrorism.

Because Bureau facilities were not directly affected by September 11 events, it did not receive funding in the first two releases of emergency supplemental appropriations; however, the agency will receive \$30.3 million for security at Bureau facilities as part of the third cluster of emergency supplemental funding included in Division B, Chapter 5, of the FY2002 Defense Appropriations bill (H.R. 3338, P.L. 107-117).

Klamath River Basin

On February 27, the Bureau of Reclamation (Bureau) issued its final 2002 biological assessment (a process necessary under the Endangered Species Act (ESA)) for operations of its Klamath Project for the 2002-2012 water years. Given projected water conditions, the Bureau fully expects to deliver water to farmers in the federal project area for the 2002 growing season and proposes actions to meet water demands over the next 10 years. On May 31, 2002, after issuing temporary draft opinions, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service both issued Final Biological Opinions on the Bureau's 10-year Operation Plan for the Project. The agencies found that the Bureau's proposed action is likely to jeopardize the continued existence of the two listed suckers and coho salmon, as well as result in the adverse modification of proposed critical habitat; however, both Opinions also included "reasonable and prudent alternatives" for operating the Project that would remove the jeopardizing effects of the proposed action. However, on June 3, 2002, the Bureau formally rejected both Final Biological Opinions, but opted instead to operate under a one-year plan that it asserts complies with the Opinions.

These are a few of the latest developments in a controversy that erupted nearly a year ago when the Bureau announced it would not release water from Upper Klamath Lake during the 2001 growing season to approximately 200,000 acres of farm and pasture lands within the roughly 235,000-acre Klamath project service area. The area straddles the Oregon/California border and has been the site of increasingly complex water management issues involving several tribes, fishermen, farmers, environmentalists, and recreationists. The Bureau based its 2001 announcement on two biological opinions issued under the ESA by the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS). These opinions concluded that the Bureau's proposed operation of the Klamath project for the 2001 water year would jeopardize the continued existence of the two species of suckers and the coho salmon, and would harm, but not jeopardize, the continued existence

of the bald eagles which use nearby refuges. The Klamath area had experienced significantly low precipitation and according to the Bureau's April 6 announcement, the current year was "expected to be one of the driest years since the Project began in 1907...." Operation of the project even in normal water years is controversial because of the many demands for water throughout the Klamath River basin.

In response to the biological opinions, the Bureau immediately announced on April 6, 2001, that it would deliver very little water to farmers in the area. This announcement was generally supported by fishermen who depend on lake storage and seasonal flows to support commercial and recreational fishing, tribes who assert priority water rights, and by environmentalists. However, many farmers and others in the surrounding community who also depend on those waters were opposed to the action. Some protesters desperate to release water from the lake on several occasions pried open Bureau facilities to release water into irrigation canals. Since then, the Bureau has installed new security measures to guard the Klamath irrigation headgates.

Because many disagreed over the fundamental guidance contained in the 2001 biological opinions, the Secretary of the Interior sought and secured review of the scientific decisions by the National Academy of Sciences (NAS). On February 6, 2002, the Academy released its Interim Report from the Committee on Endangered and Threatened Fishes in the Klamath River Basin. The Committee concluded that there was insufficient scientific support for FWS and NMFS recommendations to maintain minimum water levels in Upper Klamath Lake and increase minimum flows in the Klamath River mainstem. While the report noted all other components of the biological opinions appeared to have scientific support, it stated these critical decisions did not. At a House Resources Committee oversight hearing on March 13, William Lewis, Chairman of the NAS Committee, noted that "[d]espite the availability of a substantial amount of data collected by federal scientists and others, no clear connection has been documented between low water level in Upper Klamath Lake and conditions that are adverse to the welfare to [sic] the suckers."¹ He also noted that the NAS Committee found no "...sound scientific basis for NMFS recommendations on increased minimum flows in the Klamath River main stem." Further, the Committee concluded there was no sound scientific basis for operating the lake at the lower levels proposed in the Bureau's 2001 biological assessment. In other words, the Committee found there were insufficient scientific data to support either of the management regimes proposed by federal agencies for the 2001 growing season.

Congress has reacted to the controversy in a number of ways. Most recently, the House approved the conference report for H.R. 2646, the 2002 farm bill (H.Rept. 107-424), which includes \$50 million in mandatory spending for water conservation activities in the Klamath Basin (Title II, subtitle D, §2301 ("§1240I")). The bill also authorizes study of options for improving fish passage at Chiloquin Dam, including dam removal. The House Resources Committee held an oversight hearing on March 13, 2002, to discuss findings of the NAS interim report on threatened and endangered Klamath Basin fishes. During last session, Congress provided \$20 million to eligible farmers in the basin as part of the FY2001 supplemental appropriations bill (H.R. 2216, §2104; P.L. 107-20). Nearly \$15.5 million was

¹ William M. Lewis, Jr., Ph.D. Statement before the House Committee on Resources, March 13, 2002. p. 6.

provided for the Klamath project as part of the FY2002 Energy and Water appropriations bill (H.R. 2311, P.L. 107-66); the Administration had requested nearly \$13 million for FY02 and is requesting \$14.3 million for FY03. Two significant amendments were defeated last session: 1) an amendment to the Commerce, Justice, State appropriations bill to provide \$200 million to farmers to compensate for the loss of water was rejected on a point of order July 18 (H.Amdt. 178 to H.R. 2500 (amendment number 1 as printed in the Congressional Record)); and 2) a Senate amendment (S.Amdt. 899) to the FY2002 Interior Appropriations bill (H.R. 2217), which would have prohibited the use of funds to manage water flows under the most recent biological opinions, was rejected on a 52-48 vote to table the amendment (Roll call Vote No. 232, July 12, 2001). The latter amendment would have directed water flows to be managed as set forth under two earlier biological opinions until the Fish and Wildlife Service took certain actions identified in a 1993 recovery plan for the Lost River and Shortnose suckers.

In November, the House passed H.R. 2828, a bill to refund and waive Bureau of Reclamation operation and maintenance charges to certain Klamath project water users. The bill has been referred to the Senate Committee on Energy and Natural Resources; and on July 31, 2002, the committee ordered the bill reported without amendment. A stand alone bill (H.R. 2389) has also been introduced to compensate individuals in the Klamath area for their economic losses due to the Bureau's decision. The bill was referred to the House Judiciary Committee – to date, there has been no action on the bill. Additionally, a provision directing the Secretary of Agriculture to establish a Klamath Basin Interagency Task Force (§262) was included in Senate-passed version of the farm bill (H.R. 2646). The language would have directed \$175 million of Commodity Credit Corporation funds to be used for a variety of Task Force related activities. Of the total, \$30 million would have been made available to the four Tribes in the Klamath Basin: the Klamath, Yurok, Hoopa, and Karuk. House and Senate conferees struck the language and replaced it with \$50 million in mandatory funding (to be transferred from the Commodity Credit Corporation) for water conservation activities in the Klamath Basin.

Relatedly, §215 of the Senate-passed farm bill would have authorized a new water conservation program under the Conservation Reserve Enhancement Program, whereby states could arrange with willing sellers and lessors to secure water rights for land taken out of agricultural production. The original version of §215, debated in the Senate December 12, 2001, would have authorized the Department of Agriculture to give *priority* to the leasing or purchase from willing sellers of water rights on up to 1.1 million acres of land enrolled in the Conservation Reserve Program. Many western Senators objected to the original language on the grounds it might abrogate state water rights, create a new type of federal water right, or force farmers who wish to participate in the Conservation Reserve Program to put their water in jeopardy to do so. Sponsors of the provision argued that such concerns were already addressed by authorizing only willing transfers or sales. The provision was subsequently amended to address some states' rights concerns; however, Senate leaders eventually halted debate on the farm bill altogether until the beginning of second session of the 107th. Section 215 was substantially rewritten, offered as an amendment by Senator Reid, and approved during passage of the Senate farm bill in early February 2002. The language was ultimately deleted in conference.

Debate over how and if area farmers and others dependent on the agricultural economy of the area ought to be compensated is likely to continue. Some have called for a re-

examination of water uses in the basin, including the possibility of retiring farm lands from production. The status of water rights throughout the basin is the subject of an ongoing water rights adjudication process at the state level. (For more information on the Klamath project issues, see CRS Report RL31098 and CRS Issue Brief IB10072.) Relatedly, on March 19, Secretary Norton announced a series of upcoming meetings with the Klamath Tribes to work on long-term solutions to the issues facing stakeholders in the Klamath River Basin. On March 1, President Bush announced the creation of a Klamath River Basin Federal Working Group to address economic and natural resource issues in the basin.

Title Transfer

Congress more and more is considering legislation that would transfer the ownership (title) of individual Bureau of Reclamation water supply projects to current water users. These “title transfer” bills vary depending on the circumstances of each project; however, some general issues apply. Transfer issues range from questions regarding a project’s worth and valuation to legal and policy questions regarding the transfer’s affect on other area water users, fish and wildlife, future project operations, and future management of lands associated with the project. So far, two title transfer bills have been introduced in the 107th Congress: Lower Yellowstone (H.R. 2202 and S. 1148). The bills are very similar, but not identical. Congress is also considering the transfer of lands near Elephant Butte and Caballo reservoirs in New Mexico (H.R. 706), which currently are leased for cabin sites. The House Resources Committee held a field hearing on H.R. 706 on December 10, 2001. The bill passed the House under suspension of the rules on March 19, 2002, and was sent to the Senate Committee on Energy and Natural Resources. Hearings were held and this bill was ordered reported without amendment on July 31, 2002.

The Clinton Administration first actively negotiated title transfer on a voluntary basis with interested water/irrigation districts beginning in 1995 when it announced a policy “framework” to establish a process for negotiating title transfers. While some districts pursued the Administration’s framework process, others sought direct legislative authority for transfers. In general, Congress must authorize transfer of title to reclamation facilities (32 Stat. 389; 43 USC 498), regardless of the process used to get to a transfer agreement.

The 106th Congress enacted 10 title transfer bills for projects in eight states: Wellton-Mohawk, AZ (P.L. 106-221); Clear Creek, CA (P.L. 106-566, Title IV), Sugar Pine, CA (P.L. 106-566, Title V), and Sly Park, CA (P.L. 106-377, Division B); Northern Colorado Conservancy District, CO (P.L. 106-367); Nampa-Meridian, ID (P.L. 106-466); Middle Loup, NE (P.L. 106-366); Griffith, NV (P.L. 106-249); Carlsbad, NM (P.L. 106-220); and Palmetto Bend, TX (P.L. 106-512).

Two title transfer bills were enacted at the end of the 105th Congress: 1) transfer of certain Minidoka project facilities to the Burley Irrigation District, ID (S. 538, P.L. 105-351); and, 2) transfer of the Canadian River Project, TX, pending prepayment of the district’s debt on the project (H.R. 3687, P.L. 105-316). The Burley title transfer was completed on February 24, 2000, and the Canadian River transfer was completed in May, 1999. (Another title transfer bill was enacted during the first session of the 105th Congress — Oroville-Tonasket (H.R. 412, P.L. 105-9); however, this transfer is somewhat different from the others in that it was developed in response to a settlement agreement between the Bureau and an irrigation district in Washington State.)

A central issue with title transfer legislation is whether the transfers should be mandated or simply authorized. Some argue that the transfers are “minor land transactions” and advocate that Congress direct they take place within a certain time period. Others strongly disagree. Debate mostly centers on the role the National Environmental Policy Act (NEPA) would and should play prior to a project’s transfer. Environmentalists generally fear that a directed transfer with or without specific NEPA language would effectively allow the Bureau and project transfer proponents to avoid assessing and/or mitigating environmental effects of the proposed transfers. Conversely, project proponents have pursued directed transfers to avoid what they view are unnecessary delays and to ensure the transfers take place. For example, some title transfer legislation directs the transfer to occur “in accordance with all applicable law,” while other legislation directs the transfer take place pursuant to an agreement already negotiated with project water users. Two laws recently enacted (P.L. 106-220 and P.L. 106-221) authorize the transfers; whereas, others (P.L. 106-249, P.L. 106-377, and P.L. 106-512) direct the transfer.

Other discussions center on the role the Endangered Species Act (ESA) might play on project operations after the transfer. One of the main concerns for environmentalists appears to be that once the project is out of federal ownership there will no longer be a legal obligation for the district to consult with other federal entities on the impact of project operations on threatened or endangered species as is now required of the Bureau under Section 7 of the ESA. Additionally, environmentalists and others fear that once out of federal hands there will be little if any public scrutiny of project operations. Conversely, project proponents are likely to favor private operations.

Controversies regarding the application of NEPA and ESA to project title transfers, as well as the question of whether to direct or authorize the transfers, are likely to remain at issue. Other issues involve concerns about the overall costs of the transfers, who should pay for costs associated with the transfer, effects on third parties, liability, the valuation of project facilities and lands (and treatment of mineral or other receipts), and financial compensation for the projects. Related to many of the issues outlined above is the question of how these projects might be operated in the future. Although the House Resources Committee has noted it contemplates that facilities would be maintained and managed without significant changes, and in some cases bill language states the projects shall be managed for the purposes for which the project was authorized, transfer bills approved by the committees have been silent on enforcement issues and in describing what might occur if the new owners change operations (other than they must comply with all applicable laws at that time). Little has been said, for example, about what might occur if new project owners decided to partition project lands for new homes and convert irrigation water to domestic use.

Project Construction

California Bay-Delta/CALFED. The authorization of an annual appropriation of \$143 million for implementing portions of an ecosystem protection plan and long-term restoration projects for the San Francisco Bay/San Joaquin and Sacramento rivers Delta (Bay-Delta, also known as the CALFED program) expired September 30, 2000. The initial authorization for CALFED funding (P.L. 104-208, Division E) came on the heels of a 1994 agreement among state and federal agencies, urban, agricultural, and environmental interests to protect the Bay-Delta while satisfying key needs of various involved interests. The process was initiated to address critical water quality, water supply, and fish and wildlife

habitat issues in the 738,000 acre Bay-Delta estuary and has grown into a comprehensive effort to address long-term water supply/quality issues for most of the state.

Appropriators have been reluctant to fund the program absent an explicit authorization from the authorizing committees. No funds were included for CALFED in the Energy and Water Development Appropriations bill for FY2001, and none were included for the CALFED *program* for FY2002. However, appropriators included \$30 million for FY2002 for Central Valley Project (California) activities which support the CALFED program. While the language is similar to earlier Senate language recommending \$40 million for CALFED-related activities, the conference report directs funding towards several specific water supply projects, including: \$7.5 million to the Delta Division for oversight activities; \$1 million for planning activities associated with enlarging Los Vaqueros Reservoir; \$3 million to construct the Tracy Test Fish Facility; \$2.5 million to investigate storage in the Upper San Joaquin watershed; \$12.5 million for the Environmental Water Account; \$0.75 to the Sacramento River Division to continue planning activities related to Sites Reservoir; and \$1.9 million to continue evaluating potential impacts of raising Shasta Dam. (For more information on appropriations issues, see CRS Report RL31007, *Appropriations for FY2002: Energy and Water Development*.)

Six bills have been introduced to authorize a CALFED program. Two bills authorizing appropriations for the program were introduced on May 24 and May 25, 2001 (H.R. 1985 and S. 796, respectively). Both bills would authorize certain activities outlined in an August 2000 record of decision (ROD) on the CALFED program; however, neither bill appears to authorize implementation of the ROD in its entirety. Additionally, while similar, the bills differ in several respects, including approaches to establishing a “governance structure” for the program, authorization of several water supply projects, study and report requirements, use of water from an Environmental Water Account, and water supply “assurances” to certain water users south of the Delta. On September 13, the House Resources subcommittee on Water and Power marked up H.R. 1985. Five amendments were offered; three were accepted and two were withdrawn. The most controversial amendments had to do with water supply “assurances” language and project construction authorization. These two amendments were withdrawn; however, it was agreed the provisions would be the subject of discussion prior to or during full committee mark-up.

On November 7, the House Resources Committee marked up and ordered reported H.R. 3208, in lieu of H.R. 1985. An amendment modifying the “assurances” language – arguably bringing it more in line with the Record of Decision – was adopted by the committee. However, some Members continued to voice concern that the language might create a new class of water rights recipients for project water. A revised version of the construction authorization provision was eliminated from the bill, while a controversial amendment applying Davis-Bacon prevailing wage rate requirements to projects constructed under the bill was accepted. H.R. 3208 was reported from the Committee February 14, 2002 (H.Rept. 107-360, Part I).

On December 5, Senators Feinstein and Boxer introduced a new CALFED bill, S. 1768. The bill would authorize the Secretary of the Interior to implement the CALFED program largely as framed in the August 2001 ROD. The bill does not include many of the more controversial items, such as the assurances language and “expedited” project authorization procedures, contained in the earlier introduced bills. On June 5, the Senate Energy and

Resources Committee approved and ordered reported an amendment (introduced by Senator Feinstein) as a substitute to S. 1768 that would reauthorize the California Bay-Delta Restoration Program (CALFED). The amendment reduces the authorization of the CALFED Program from 5 years to 3 years for Stage 1 activities, reduces the authorization for appropriations from \$2.4 billion to \$1.6 billion, and includes authorization for funding a list of specific activities under each of the CALFED Program components.² The CALFED components and activities listed in S. 1768 come from the ROD. The amendment to S. 1768 also provides for activities and reports that are aimed toward increasing program management, oversight and coordination. Furthermore, an annual report called for by S.1768 will include a section that states whether CALFED is progressing in a balanced fashion. An evaluation of balanced progress among the CALFED components is expected to be derived from statements about the progress and implementation of several project activities ranging from the implementation of a comprehensive science program to the improvement of water supply reliability. On May 2, Representative Napolitano introduced H.R. 4657, which is similar to the *introduced* version of S. 1768, but also includes authorization for certain water recycling and re-use projects, as well as studies for desalination projects.

The primary or “lead” federal agencies involved in the CALFED process include: the Bureau of Reclamation and the Fish and Wildlife Service, both within the Department of the Interior; the Environmental Protection Agency; the National Marine Fisheries Service (Department of Commerce); the U.S. Army Corps of Engineers (Department of Defense); and the Natural Resources Conservation Service (Department of Agriculture). State agencies include: the Resources Agency (Department of Water Resources, Department of Fish and Game, Reclamation Board, and Delta Protection Commission); the California Environmental Protection Agency (including the State Water Resources Control Board); and the Department of Food and Agriculture. To date, federal funding has been provided to provide fish screens for existing water diversions, pollution control measures, and management of fish, riparian and estuarine habitat. The funding has been in addition to funds already authorized for projects and programs under the Central Valley Project Improvement Act (Title 34, P.L. 102-575) and other previously authorized projects and programs.

Rural Water Supply Projects. Beginning with authorization of the WEB Rural Water Supply Act in 1980 (P.L. 96-355), Congress has authorized the Bureau to fund the construction of several “rural water supply” projects and oversee construction of another, with funding coming from the Department of Agriculture. These projects have individual authorizations, but all are generally aimed at providing water for municipal and industrial (M&I) uses in rural areas — a departure from the historical mission of providing water for irrigation, with M&I use as an incidental project purpose. To date, two identical rural water supply bills have been introduced in the 107th Congress: H.R. 1946 and S. 934. These bills would direct the Secretary to construct the Rocky Boy’s/North Central Montana Regional Water System to serve the Chippewa Cree Tribe and non-Indian water suppliers in North Central Montana. A third bill, H.R. 3223, to supply water to the Jicarilla Apache Reservation has also been introduced. It is not clear if the project would supply water to non-reservation lands.

² CALFED program components include: water storage, conveyance, water use efficiency, water transfers, environmental water account, water management, ecosystem restoration, watersheds, water quality, levee stability, and science.

Three rural water supply project authorizations were enacted during the 106th Congress: Lewis and Clark (P.L. 106-246, Title IV); Perkins County (P.L. 106-136); and Fort Peck (P.L. 106-382). The 105th Congress authorized the Fall River project (P.L. 105-352); however, it gives responsibility to the Secretary of Agriculture for the project, while authorizing the Bureau to oversee construction.

These projects have been somewhat controversial, largely due to the relatively large share of federal construction costs proposed. Typically, the Bureau requires that people benefitting from a reclamation project repay 100% of the construction costs (plus interest) attributed to M&I project purposes. For example, if a project's purpose is 50% irrigation, 30% flood control and 20% M&I, M&I water users would pay (reimburse the federal government) for 100% of their 20% of construction costs of the project, plus interest (the federal cost share would be 0% of the 20% cost allocated to M&I purposes). In contrast, the federal cost share (non-reimbursable component) for the Bureau's "rural water supply" projects typically ranges from 75% to 85%. Some have raised concerns that these projects have the potential to overwhelm the Bureau's budget. For example, the federal contribution to the Lewis and Clark project is estimated at \$214 million. For perspective, the Bureau's budget ranges in the neighborhood of approximately \$800 million (net current authority) annually. Prior to the recent authorizations, the Bureau had approximately 60 authorized projects in various stages of construction with projected construction costs for completion of \$4.9 billion. Outstanding construction authorizations now total approximately \$7 billion.

Some also fear that these projects are outside the realm of those historically constructed by the Bureau and believe they would be better handled via other existing federal water quality or water supply programs, such as the USDA's Rural Utility Service or the EPA's state revolving loan fund. However, as designed, the projects do not fit EPA or USDA criteria, and thus project proponents have looked to the Bureau for funding. An additional concern with the Lewis and Clark legislation was that it would authorize projects outside of the Bureau of Reclamation's historic service area (outside the 17 western states). For information on other federal water supply programs, see CRS Report RL30478.

Title 16 Projects. Title 16 of P.L. 102-575 directs the Secretary of the Interior to develop a program to "investigate and identify" opportunities to reclaim and reuse wastewater and naturally impaired ground and surface water. The original Act authorized construction of 5 reclamation wastewater projects and 6 wastewater and groundwater recycling/reclamation studies. The Act was amended in 1996 (P.L. 104-206) to authorize another 18 construction projects and an additional study, and again in 1998 (P.L. 105-321) and 2000 (P.L. 106-554, Division B, Section 106) to authorize two more construction projects. Water reclaimed via Title 16 projects may be used for M&I water supply (non-potable purposes only), irrigation supply, groundwater recharge, fish and wildlife enhancement, or outdoor recreation. To date, nine Title 16 bills have been introduced in the 107th Congress, three of which address financing of previously authorized projects (H.R. 131, H.R. 685, H.R. 1245, H.R. 1251 (increase funding), H.R. 1261 (imposing limits on funding), H.R. 1729 (increase ceiling on funding), H.R. 2115, S. 491, and S. 1385).

The general purpose of Title 16 projects is to provide supplemental water supplies by recycling/reusing agricultural drainage water, wastewater, brackish surface and groundwater, and other sources of contaminated water. Projects may be permanent or for demonstration purposes. Project construction costs are shared by a local project sponsor or sponsors and

the federal government. The federal share is generally limited to a maximum of 25% of total project costs and in most cases the federal share is non-reimbursable, resulting in a *de facto* grant to the local project sponsor(s). Congress limited the federal share of individual projects to \$20 million beginning in 1996 (P.L. 104-266). The federal share of feasibility studies is limited to 50% of the total, except in cases of “financial hardship”; however, the federal share must be reimbursed. The Secretary may also accept in-kind services that are determined to positively contribute to the study.

The Bureau’s water reclamation and wastewater recycling program is limited to projects and studies in the 17 western states authorized in the Reclamation Act of 1902, as amended (32 Stat. 388), unless specifically authorized by Congress.³ Authorized recipients of program assistance include “legally organized non-federal entities” (e.g., irrigation districts, water districts, and municipalities). Construction funding is generally limited to projects where: 1) an appraisal investigation and feasibility study have been completed and approved by the Secretary; 2) the Secretary has determined the project sponsor is capable of funding the non-federal share of project costs; and 3) the local sponsor has entered a cost-share agreement committing to funding its share.

The Bureau noted in its FY2001 budget justifications that it would focus its work on projects that are: “1) economically justified and environmentally acceptable in a watershed context, (2) not eligible for funding under another Federal program, and (3) directly address Administration priorities for the Reclamation program such as providing instream flows for federally endangered or threatened species, meeting the needs of Native American communities, and meeting international commitments.” The FY2002 justifications note the Bureau’s primary focus will be on ongoing projects for which the agency has requested funds in prior years. Unlike other water supply or wastewater treatment programs run by the EPA, USDA, or HUD, the Bureau’s Title 16 projects are statutorily authorized projects. While the Bureau has the authority to undertake general appraisal investigations and feasibility studies, it has interpreted the Title 16 language as requiring specific congressional authorization for the construction of new projects. Total funding for the program for FY2002 is approximately \$36 million – nearly \$5.5 million more than enacted for FY2001.

LEGISLATION

P.L. 107-69, H.R. 2925

Amends the Reclamation Recreation Management Act of 1992 to provide for the security of dams, facilities, and resources under jurisdiction of the Bureau of Reclamation. Introduced September 21, 2001; referred to the House Committee on Resources. Committee consideration and mark-up held October 3; ordered to be reported (amended) by Unanimous Consent. Passed the House by voice vote under suspension of the rules on October 23, 2001. Received in the Senate October 24. Passed Senate without amendment by Unanimous Consent October 30. Became Public Law No. 107-69 on Nov. 12.

³ Section 103(a)(4) of P.L. 106-566 directs the Secretary of the Interior to study recycling, reclamation, and reuse of water and wastewater for agricultural and non-agricultural uses in the state of Hawaii.

H.R. 131 (Miller, Gary)

Amends the Reclamation Wastewater and Groundwater Study and Facilities Act to authorize the Secretary of the Interior to participate in the Inland Empire regional water recycling project, to authorize the Secretary to carry out a program to assist agencies in projects to construct regional brine lines in California, and to authorize the Secretary to participate in the Lower Chino Dairy Area desalination demonstration and reclamation project. Introduced Jan. 3, 2001; referred to Committee on Resources. Referred to the Subcommittee on Water and Power February 15, 2001.

H.R. 685 (Miller, George)

Amends the Reclamation Wastewater and Groundwater Study and Facilities Act to authorize certain projects in California for the use or reuse of reclaimed water and for the design and construction of demonstration and permanent facilities for that purpose, and for other purposes. Introduced February 14, 2001; referred to Committee on Resources. Referred to the Subcommittee on Water and Power February 23, 2001.

H.R. 706 (Skeen)

Directs the Secretary of the Interior to convey certain properties in the vicinity of the Elephant Butte Reservoir and the Caballo Reservoir, New Mexico. Introduced February 14, 2001; referred to the House Committee on Resources. Referred to the Subcommittee on Water and Power on February 28. Subcommittee field hearing held December 10, 2001. Reported from full committee (amended) March 7, 2002 (H.Rept. 107-368); markup held February 27, 2002. Passed House March 19 under suspension of the rules. Referred to the Senate Committee on Energy and Natural Resources March 20, 2002. Subcommittee hearings were held on June 6, 2002, and the bill was ordered reported by the Committee on Energy and Natural Resources without amendment on July 31, 2002.

H.R. 1245 (McKeon)

Amends the Reclamation Wastewater and Groundwater Study and Facilities Act to authorize the Secretary of the Interior to participate in the design, planning, and construction of a project to reclaim and reuse wastewater within and outside of the service area of the Castaic Lake Water Agency, California. Introduced March 27, 2001; referred to House Committee on Resources. Referred to the Subcommittee on Water and Power April 2, 2001.

H.R. 1251 (Napolitano)

Amends the Reclamation Projects Authorization and Adjustment Act of 1992 to increase the federal share of the costs of the San Gabriel Basin demonstration project. Introduced March 27, 2001; referred to Committee on Resources. Referred to the Subcommittee on Water and Power April 2, 2001.

H.R. 1261 (Horn)

Amends the Reclamation Projects Authorization and Adjustment Act of 1992 to impose a limit on the federal share of the costs of the Long Beach Desalinization Research and Development Project in Los Angeles County, California. Introduced March 28, 2001; referred to the Committee on Resources. Referred to the Subcommittee on Water and Power April 2, 2001.

H.R. 1729 (Sanchez)

Amends the Reclamation Wastewater and Groundwater Study and Facilities Act to increase the ceiling on the Federal share of the costs of phase I of the Orange County, California, Regional Water Reclamation Project. Introduced May 3, 2001; referred to Committee on Resources May 8, 2001.

H.R. 1946 (Rehberg), S. 934 (Burns)

The identical bills require the Secretary of the Interior to construct the Rocky Boy's/North Central Montana Regional Water System in the State of Montana, to offer to enter into an agreement with the Chippewa Cree Tribe to plan, design, construct, operate, maintain and replace the Rocky Boy's Rural Water System, and to provide assistance to the North Central Montana Regional Water Authority for the planning, design, and construction of the noncore system, and for other purposes. H.R. 1946 introduced May 22, 2001; referred to Committee on Resources, Subcommittee on Water and Power May 31, 2001. Subcommittee hearings held April 24, 2002. S. 934 introduced May 22, 2001; referred to Committee on Indian Affairs. This bill was discharged with unanimous consent and referred to the Senate Committee on Energy and Natural Resources, Subcommittee on Water and Power on May 16, 2002, with the condition that if it was reported it would return to the Committee on Indian Affairs. Subcommittee hearings held July 31, 2002.

H.R. 1985 (Calvert)

Authorizes funding through the Secretary of the Interior for the implementation of a comprehensive program in California to achieve increased water yield and environmental benefits, as well as improved water system reliability, water quality, water use efficiency, watershed management, water transfers, and levee protection. Introduced May 24, 2001; referred to Committee on Resources and in addition to the Committee on Transportation and Infrastructure, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned. Referred to the House Resources Subcommittee on Water and Power June 6; referred to the House Transportation and Infrastructure Subcommittee on Water Resources and Environment May 25. (The bill would authorize certain CALFED program operations.) Subcommittee on Water and Power held hearings July 26; markup held September 13, 2001 and sent to full committee. Full Resources Committee markup held November 11; the committee marked up H.R. 3208 in lieu of H.R. 1985 and ordered it reported, as amended, by recorded vote of 24-18.

H.R. 2115 (Smith, Adam)

Amends the Reclamation Wastewater and Groundwater Study and Facilities Act to authorize the Secretary of the Interior to participate in the design, planning, and construction of a project to reclaim and reuse wastewater within and outside of the service area of the Lakehaven Utility District, Washington. Introduced June 18, 2001; referred to Committee on Resources. Markup held October 17; ordered to be reported by voice vote. Reported Nov. 27 (H.Rept. 107-302). Passed the House by voice vote under suspension of the rules Dec. 5. Received in Senate Dec. 6; referred to Committee on Energy and Natural Resources, Subcommittee on Water and Power. Subcommittee hearings were held June 6, 2002. The Committee on Energy and Natural Resources marked up H.R. 2115 on July 31, 2002, and ordered it reported without amendment.

H.R. 2202 (Rehberg), S. 1148 (Burns)

The nearly identical bills would convey the Lower Yellowstone Irrigation Project, the Savage Unit of the Pick-Sloan Missouri Basin Program, and the Intake Irrigation Project to the pertinent irrigation districts. H.R. 2202 introduced June 14, 2001; referred to Committee on Resources. Referred to the subcommittee on Water and Power on June 20. Subcommittee hearings were held June 5, 2002. S. 1148 introduced June 29, 2001; referred to Committee on Energy and Natural Resources.

H.R. 2389 (Herger)

Provides for the compensation of persons of the Klamath Basin who were economically harmed as a result of the implementation of the Endangered Species Act of 1973. Introduced June 28, 2001; referred to the House Committee on the Judiciary. Referred to Subcommittee on Immigration and Claims on July 16, 2001.

H.R. 2404 (Miller, George)

California Water Quality and Reliability Act of 2001. Authorizes federal agency participation and financial assistance for programs and for infrastructure improvements for the purposes of increasing deliverable water supplies, conserving water and energy, restoring ecosystems, and enhancing environmental quality in the State of California, and for other purposes. Introduced June 28, 2001; referred to Committee on Resources. Referred to the subcommittee on Water and Power July 10. Subcommittee hearings held July 26.

H.R. 2565 (Cannon)

Amends the Central Utah Project Completion Act to clarify the responsibilities of the Secretary of the Interior with respect to the Central Utah Project, to redirect unexpended budget authority for the Central Utah Project for wastewater treatment and reuse and other purposes, to provide for prepayment of repayment contracts for municipal and industrial water delivery facilities, and to eliminate a deadline for such prepayment. Introduced July 19, 2001; referred to House Committee on Resources, Subcommittee on Water and Power, July 26, 2001.

H.R. 2828 (Walden)

Authorizes refunds of amounts collected from Klamath Project irrigation and drainage districts for operation and maintenance of the Project's transferred and reserved works for water year 2001, and for other purposes. Introduced August 2, 2001; referred to the House Committee on Resources. Referred to the Subcommittee on Water and Power, August 10. Subcommittee consideration and markup held on November 7; reported (amended) by voice vote. Full committee reported, amended, on November 13 (H.Rept. 107-284). Passed the House by voice vote under suspension of the rules November 13. Received in Senate Nov. 14; referred to Committee on Energy and Natural Resources, Subcommittee on Water and Power. Subcommittee hearings were held on June 6, 2002, and the bill was ordered reported by the Committee on Energy and Natural Resources without amendment on July 31, 2002.

H.R. 3208 (Calvert)

Authorizes funding through the Secretary of the Interior for the implementation of a comprehensive program in California to achieve increased water yield and environmental benefits (CALFED), as well as improved water system reliability, water quality, water use efficiency, watershed management, water transfers, and levee protection. Introduced November 1, 2001; referred to the House Committee on Resources, and in addition to the

Committee on Transportation and Infrastructure, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned. Committee consideration and mark-up held November 7; ordered to be reported (amended) by recorded vote (24 - 18). Reported February 14, 2002 (H.Rept. 107-360, Part I). House Transportation Committee granted an extension on February 14, 2002, for further consideration ending not later than March 14, 2002. Referred sequentially to House Committee on Education and the Workforce on February 14. Discharged from both committees on March 14 and placed on Union Calendar.

H.R. 4657 (Napolitano)

Authorizes the Secretary of the Interior to implement the Calfed Bay-Delta Program. Introduced May 2, 2002; referred to Committee on Resources and in addition to the Committee on Transportation and Infrastructure, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned. On May 14, 2002, the bill was referred to the Subcommittee on Water and Power and an executive comment was requested from the Department of the Interior.

H.R. 5123 (Hunter)

Provides funds for restoration projects at the Salton Sea and eliminates the liability of several water agencies from effects of water transfers on the Salton Sea. Introduced July 15, 2002; referred to Committee on Resources, Subcommittee on Water and Power. Subcommittee markup and hearing held on July 25, 2002, but the bill was not reported.

H.R. 5136 (Hunter)

Amends the Salton Sea Reclamation Act of 1998 to reauthorize activities relating to river reclamation and wetlands projects for the Alamo River and New River, Imperial County, California. Introduced July 16, 2002; referred to Committee on Resources. On August 9, 2002, referred to the Subcommittee on Water and Power.

S. 116 (Feingold)

Amends the Reclamation Reform Act of 1982 to clarify the acreage limitations and incorporate a means test for certain farm operations, and for other purposes. Introduced January 22, 2001; referred to Committee on Energy and Natural Resources.

S. 491 (Campbell)

Amends the Reclamation Wastewater and Groundwater Study and Facilities Act to authorize the Secretary of the Interior to participate in design, planning, and construction of the Denver Water Reuse project. Introduced March 8, 2001; referred to Committee on Energy and Natural Resources. Reported with amendment in the nature of a substitute (S. Rept. 107-25), June 5. Passed Senate, amended, by unanimous consent August 3. Amended in Senate by unanimous consent after passage by unanimous consent September 6.

S. 976 (Feinstein)

Provides authorization and funding for the enhancement of ecosystems, water supply, and water quality of the State of California. Introduced May 25, 2001; referred to Energy and Natural Resources Committee. Subcommittee on Water and Power held hearings July 19, 2001 (S. Hrg. 107-253). (The bill would authorize certain CALFED activities.)

S. 1385 (Cantwell)

Authorizes the Secretary of the Interior, pursuant to the provisions of the Reclamation Wastewater and Groundwater Study and Facilities Act to participate in the design, planning, and construction of the Lakehaven water reclamation project for the reclamation and reuse of water. Introduced August 3, 2001; referred to Senate Committee on Energy and Natural Resources. Subcommittee on Water and Power held hearings June 6, 2002.

S. 1480 (Bingaman, by request)

Amends the Reclamation Recreation Management Act of 1992 in order to provide for the security of dams, facilities, and resources under the jurisdiction of the Bureau of Reclamation. Introduced October 1, 2001; referred to the Committee on Energy and Natural Resources. Committee on Energy and Natural Resources hearings held October 9 (S. Hrg. 107-335). Nearly identical House bill (H.R. 2925) that became law November 12.

S. 1768 (Feinstein)

Authorizes the Secretary of the Interior to implement the CALFED Bay-Delta Program. Introduced Dec. 5, 2001; referred to Senate Committee on Energy and Natural Resources. Mark ups held on May 15, and June 5; ordered reported on June 5 with an amendment in the nature of a substitute. S. 1768 was reported on June 24 with additional views filed and placed on Senate Legislative Calendar under general orders.

FOR ADDITIONAL READING

Beck, Robert E., ed. *Waters and Water Rights*. Charlottesville, VA: The Michie Co., 1991.

Getches, David H. *Water Law in a Nutshell*, 2nd ed. St. Paul: West Publishing Co., 1990.

National Research Council, Committee on the Future of Irrigation in the Face of Competing Demands. *A New Era for Irrigation*. Washington, DC: National Academy Press, 1996.

———. Committee on Western Water Management. *Water Transfers in the West: Efficiency, Equity, and the Environment*. Washington, DC: National Academy Press, 1992.

Reisner, Marc. *Cadillac Desert, The American West and Its Disappearing Water*. New York: Viking Press, 1986.

Rogers, Peter. *America's Water, Federal Roles and Responsibilities*. Cambridge: MIT Press, 1996.

Simon, Benjamin M. *Devolution of Federally Constructed Irrigation Projects*. A Dissertation submitted to the faculty of the Columbian School of Arts and sciences, George Washington University. August 31, 2001.

Wahl, Richard. *Markets for Federal Water, Subsidies, Property Rights and the Bureau of Reclamation*. Washington DC: Resources for the Future, 1989.

Western Water Policy Review Advisory Commission. *Water in the West: Challenge for the Next Century*. Springfield, VA: National Technical Information Service, 1998.