

Auburn Dam  
Auburn Folsom Unit  
American River Division  
Central Valley Project

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2009

Reformatted, reedited, reprinted by  
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June 2013

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# **Auburn Dam: Auburn-Folsom South Unit**

## **American River Division: Central Valley Project**

In its different stages, Auburn Dam had been designed to be the tallest earthfill dam and then the thinnest concrete arch dam in the world. Perhaps few foresaw in 1965 when Congress authorized the Auburn-Folsom South Unit of the massive Central Valley Project that Auburn Dam, if constructed, would have been one of the last large-scale, expensive dam projects in the United States. Its planned height of 699 ft. rivaled other Bureau of Reclamation construction projects such as Hoover and Glen Canyon dams. Even initial expenditures were sizable; during years of planning and study, the government spent \$300 million on a diversion tunnel, foundation work, studies testing seismic conditions, cost-benefit analysis, and dam design, but none of this ever led to ultimate completion of the project. Aside from perhaps Glen Canyon Dam, no Reclamation water project has been more controversial or sustained a rockier trajectory than Auburn Dam. Conceived originally as a multipurpose project primarily catering to irrigation and water interests in central California, the dam became a battleground where diverse interests debated on a local and even national stage for nearly half a century over the project's cost feasibility, dam safety, water rights, and environmental concerns.

### **Project Location**

Stephen Johnson wrote of California's Central Valley, of which he was intimately familiar, that the region

is so big that it doesn't seem like a valley. It is stacks of statistics so impressive and large that they quickly lose meaning. It is also a land whose anonymity is cause for concern, because what goes on here is not

usually made of high drama, but of long-term change and consequences that are easy to miss, and possibly devastating.<sup>1</sup>

Even if the land is “too vast to understand easily,” as Johnson posits, it is still possible to describe its physical dimensions. In size the Central Valley is 430 miles long and averages 50 miles wide—more than a third of the state—bounded entirely by mountains. The Cascade Range rises to the north, the Sierra Nevada to the east, and the coastal range to the west. Two major river systems—the Sacramento, and the San Joaquin—drain the valley; the rivers run nearly the length of the valley before converging at the Sacramento-San Joaquin Delta, southwest of Sacramento, before flowing out to the Pacific Ocean through San Francisco Bay.

The American River, a Sacramento River tributary, is located about mid-way between the northern and southern extremities of the Central Valley in Sacramento, Placer, and El Dorado counties at the edge of the river. Nestled in the foothills of the Sierra Nevada 35 miles east of Sacramento, lies the community of Auburn. Reclamation planners designed Auburn Dam to store water from mountains and to capture flood runoff with the potential to devastate the populous country below. Auburn Dam, like other strategically placed dams on the major tributaries flowing westward into the two main north-south running rivers, the Sacramento and the San Joaquin, was one element in the larger Central Valley Project (CVP) system.

### **Historic Setting**

The site of Auburn Dam was the traditional homeland of what one archeologist has called “a vibrant nation of friendly, happy people.” The Nisenan people of the Maidu

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<sup>1</sup> Robert Dawson, Gerald Haslam, and Stephen Johnson, *The Great Central Valley: California's Heartland* (Berkeley and Los Angeles: University of California Press, 1992), vii-viii, 5.

Tribe were non-agricultural people who sustained large village populations in the valleys of the American, Bear, and Yuba rivers. The Nisenan living along the foothills of the Sierra Nevada were few in numbers and relied on small game and seeds and nuts for sustenance. Unfortunately, when in the nineteenth century the Spanish and later American explorers, traders, and settlers made contact with these peaceful people, the native peoples were highly susceptible to disease and targets of ethnocentric violence particularly by gold seekers.<sup>2</sup>

Among the first permanent residents in the central valley of California was Swiss-born entrepreneur John Sutter who settled on a tract of land near the junction of the Sacramento and American rivers; the future site of the California capitol, Sacramento. Sutter soon gained the favor of the governing Mexican officials who awarded him a large land grant and Mexican citizenship. His fort became the destination for settlers and the center of the gold rush that swept California in the mid nineteenth century. At Sutter's sawmill at Coloma on the South Fork of the American River, not far from present Auburn, John Marshall discovered gold in 1848. Despite Sutter's desperate attempts to keep the discovery secret, word leaked out and in the next few years men from all over the world descended on California—80,000 of them in the first years of the rush.

In short order mining camps sprung up along the foothills of the Sierra Nevada, like lights of a switchboard. Placerville—named after the common method of extracting gold from streams and rivers and the first big camp of the rush—followed Coloma. Gold fever reached Auburn in May 1848; structures built in the 1850s created a foundation for what is today a shipping and fruit-growing town. North of Auburn, the community of

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<sup>2</sup> Norman L. Wilson, "The Nisenan People,"  
<http://www.placercountyhistoricalsociety.org/Histories/nisenan.htm>.

Grass Valley near the Bear and Yuba rivers lured miners seeking gold quartz. Larger centers like Sacramento, Stockton, and Marysville provided goods and entertainment to the outlying mining camps and towns. Auburn endured because it lay on a fairly well traveled transportation corridor out of Sacramento. Occupied prior to the rush by pioneer fruit culturist Claude Chana, the original town was founded in 1848, then built up into a more permanent Old Town, and later thrived as a shipping and fruit producing town.<sup>3</sup>

The regional rush for gold provides a starting point to understand development and conflict of the state's water resources. Gold miners built small dams on rivers sloping down the Sierra Nevada's foothills and diverted the water to their dredging, panning, and sluicing operations. Reportedly, some of these diversion dams remained in operation until the mid-twentieth century when floods washed them out or when larger dams—like Folsom—replaced them.<sup>4</sup> When hydraulic mining replaced placer mining, the debris from the hills found its way into the streams and rivers, raising the stream beds and forcing the water to overflow into the surrounding areas. People built levies to keep the streams and rivers in their beds, but gradually rising stream beds forced people to construct higher and higher levies—to the point that the beds might be higher than the surrounding area. Regardless, it was no easy task to control the rivers, a reality of great importance to early ranching and agricultural-based settlers. In late 1861 and 1862 the Sacramento and American rivers flooded so severely a large portion of the Sacramento

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<sup>3</sup> Howard R. Lamar, ed., *The New Encyclopedia of the American West* (New Haven, Connecticut: Yale University Press, 1998), 437-38, 68.

<sup>4</sup> U.S. Department of the Interior, Water and Power Resources Service, *Project Data* (Denver: United States Government Printing Office, 1981), 177.

Valley became a large shallow sea. For a brief time the state government was forced to abandon Sacramento and move to San Francisco.<sup>5</sup>

From the early days to the present the quest for flood protection has been a pressing task in the Central Valley. After the 1862 flood, citizens of Sacramento raised the streets on the east side of the river by as much fourteen feet. Sacramento officials also re-channeled the American River in its last two miles; the new “river” joined the Sacramento River about a mile upstream of the original location. Later, State Engineer William Hammond Hall pursued the idea of developing an integrated, comprehensive flood control plan for the Sacramento Valley by constructing a system of levees, weirs and bypass channels. The U.S. Army Corps of Engineers also surveyed the American River watershed and issued recommendations to control the river’s erratic flow. Neither the state nor the Army Corps took action at that time, although the public continued to clamor for engineered waterways to prevent wanton flooding. Finally, after violent floods devastated the Sacramento Valley in 1902 and 1909 the federal government appropriated some funds for flood control. In 1917 California took the initiative to solve its water problems and conducted comprehensive surveys in the Sacramento Valley.<sup>6</sup>

The end game was not merely flood control. Agriculturalists and politicians believed that the state’s water resources ought to be controlled and utilized to the last drop. In the Central Valley the problem was water allocation—the possibility of

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<sup>5</sup> Dawson, et al., *The Great Central Valley*, 187-88; William Joe Simonds, “The American River Division,” unpublished manuscript, Bureau of Reclamation History Program, Denver.

<sup>6</sup> SAFCA (Sacramento Area Flood Control Agency), “Sacramento Area Flood History,” <http://www.safca.org/floodrisk/index.html>; Linda Lorraine Nash, “Transforming the Central Valley: Body, Identity, and Environment in California, 1850-1970,” PhD diss., University of Washington, 2000, 195; for a comprehensive examination of California’s efforts to control flooding in the Sacramento Valley see Robert Kelly, *Battling the Inland Sea: Floods, Public Policy, and the Sacramento Valley*, foreword by David N. Kennedy (Berkeley: University of California Press, 1989).

diverting water from the well-watered northern part of the state to the drier yet fertile valleys to the south where farms and towns could be established. This had been a nineteenth century impulse as well—in 1873 Army Corps of Engineers’ senior engineer Barton S. Alexander led a commission that proposed a series of canals to transport water from as far north as Red Bluff to the Sacramento Delta, and then from the San Joaquin Delta south to Bakersfield—but not until the twentieth century, after technology caught up with dreams, was a complete reengineering of nature possible. In 1933 the state legislature passed the Central Valley Project Act for a massive water scheme to be funded primarily by state bonds. The comprehensive water plan was much too large for state resources, especially during the Great Depression, and in 1935 the Emergency Relief Appropriation Act authorized federal funds to build the project. In 1937 Congress reauthorized project construction under provisions of federal reclamation laws for the stated purposes of river regulation, navigation, flood control, irrigation, and power. In an era when the Bureau of Reclamation took on the world’s largest engineering projects, including Hoover Dam on the Colorado River, the Central Valley Project likely topped them all in scope and in the potential reorganization of the environment. The project as initially authorized included two massive dams, a smaller dam, two power plants, five major canals, and a water pumping plant in the Sacramento-San Joaquin Delta.<sup>7</sup>

The original authorization for the Central Valley Project did not provide for a dam on the American River, although public and private interests had long considered the

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<sup>7</sup> William D. Rowley, *The Bureau of Reclamation: Origins and Growth to 1945*, Volume 1 (Denver: United States Government Printing Office, 2006), 341-2; Kelly, *Battling the Inland Sea*, 127; “Central Valley Project, California, and Colorado River Project, Texas,” August 26, 1937, in U.S. Department of the Interior, Bureau of Reclamation, *Federal Reclamation and Related Laws Annotated*, Volume I, Richard K. Pelz, editor (Denver: United States Government Printing Office, 1972), 583-4; Nash, “Transforming the Central Valley,” 196.

possibility. The State of California, as part of its comprehensive plan to control flooding in the Sacramento Valley, expressed interest in a site on the Middle Fork east of Auburn for a large multipurpose dam. In 1934 the U.S. Forest Service issued a report on the power and water potentials of the North Fork of the American River, but no action was taken. Reclamation planned to construct an 800,000 acre feet capacity dam and a power plant at Coloma, also on the American River, but eventually dropped the site probably due to early gold rush sites lying in its path. The major dam proposed on the American River was Folsom Dam, a feature of the CVP authorized under the Flood Control Act of 1944 and then reauthorized under the American River Division Authorization in 1949.<sup>8</sup>

In some respects, Folsom Dam was a prelude to the issues and controversies that later surrounded Auburn Dam. The idea for Folsom Dam arose out of a proposal laid out in the State of California Water Plan that called for constructing a 355,000 acre foot reservoir near Folsom, which Congress authorized in the 1944 Flood Control Act. The project was later modified in the 1949 American River Division Authorization Act, which authorized the Corps of Engineers to construct Folsom Dam, creating a 1,00,000 acre-foot reservoir. The 1949 act also stipulated that the Bureau of Reclamation construct the Folsom powerhouse, along with Nimbus Dam, powerplant, and fish hatchery. Also like Auburn Dam, Folsom Dam was controversial, although for different reasons. At Folsom, the issue was displacement of residents, many of them fifth generation landowners, living within the reservoir site. The dam affected 142 parcels of land and resulted in the relocation or destruction of homes and buildings. In at least one

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<sup>8</sup> USDOJ, BR, *Project Data*, 177; Robert de Roos, *The Thirsty Land: The Story of the Central Valley Project* (Stanford, California: Stanford University Press, 1948), 196; Rowley, *The Bureau of Reclamation*, 339-43.

case, the sadness over having to give up the family homestead led to tragedy when Peter Dickinson's daughter, Etta, shot Dickinson, set fire to their house, and hanged herself. The fight over Auburn Dam did not feature the same sad human stories of loss, but did nevertheless highlight the drama of people resisting change to a valued place.

In general, Folsom Dam proceeded without a hitch; begun in October 1951, the completed concrete gravity dam stood 340 feet high and spanned 1,400 feet. In early 1955, prior to being completed, the structure began storing water—and not a moment too soon. In late 1955 and early 1956 the American River rose to record levels, filling Folsom Reservoir well before schedule and reportedly averting an estimated \$20 million in damage downstream.<sup>9</sup>

### **Project Authorization**

If Folsom Dam received laurels for averting disaster, the 1956 flood was a reminder of the power high waters on the American River produced. According to some estimates, Folsom Dam was unable to contain the largest floods that threatened to sweep down the American River. Residents of Placer and El Dorado counties believed a second dam was needed and lobbied their congressional representatives to authorize study of a dam on the river near the city of Auburn.

In October 1957 a team of engineers visited the proposed dam site located two miles southeast of Auburn on a point on the North Fork of the American River near where Folsom Reservoir came to an end. Earlier in the year scientists had tested the soil and the bedrock at the site; engineers confirmed that “the site appears to be feasible for an earth dam structure of this magnitude.” The location did not come without serious

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<sup>9</sup> Simonds , “The American River Division.”

engineering challenges, however. Rock at the diversion tunnel entrance was unstable and engineers had to find a way to redirect Knickerbocker Creek which empties at the site of the left abutment. Construction also entailed a massive amount of earthfill—25 million cubic yards of it—to be mined and shipped from an off-site location. Reclamation engineers eventually settled on a design that reduced the amount of earthfill and proposed use of rock fill instead. The initial cost estimate for Auburn Dam and Knickerbocker Creek Diversion Dam was \$145 million, but that figure inched upward after engineers proposed enlarging the dam’s spillway.<sup>10</sup>

Political support for the project grew as citizens of Placer and El Dorado counties and in the lower American River area gave it their enthusiastic support. California’s congressional leaders such as Biz Johnson made Auburn Dam a priority. According to Mike Catino of Reclamation’s Sacramento Office, the road to a dam at Auburn entailed the usual I’ll-scratch-your-back-if-you-scratch-mine type of politics. Johnson or other politicians from California sometimes approached Congressman Wayne Aspinall, chairman of the House Interior and Insular Affairs Committee from 1959 to 1973, and would say something like, “Wayne, when you’re ready in Colorado [to push support for the Animas-La Plata Project], we’ll be here to help you, and don’t forget our project out in California.”<sup>11</sup>

The stated benefits of the dam were many. The project promised to enhance the Central Valley’s water supply where heavy groundwater pumping and drought posed a

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<sup>10</sup> Travel Report of O. L. Rice, Chief of Dams Branch, and J. W. Hilf, Engineer, October 21, 1957; Regional Director, Sacramento, California, to Commissioner, January 1959, Record Group 115, Records of the Bureau of Reclamation, Acc.# 115-97-196, Box 1, Federal Records Center, Denver, Colorado; hereafter cited as FRC.

<sup>11</sup> Mike Catino, *Oral History Interviews*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by Brit Allan Storey, senior historian, and Donald B. Seney, both of the Bureau of Reclamation, from 1994 to 1995, in Sacramento, California, Edited by Brit Allan Storey, 2010.

major threat to agricultural stability, provide essential flood protection, create a new recreation destination, etc.

In 1962 Secretary of the Interior Stewart Udall urged Congress to move quickly on the project because of the dire need for additional water supplies and because, he believed, an early authorization would lower construction costs.<sup>12</sup> Despite the secretary's urging, the wheels of Congress move at a snail's pace. It took over five years from the time Reclamation issued the feasibility report in January 1960 to eventual authorization in September 1965. In late 1962, at the behest of Congress, Reclamation prepared new cost estimates and revised its designs for a 2.3 million acre feet capacity dam. Pressed for time, on March 22, 1963 the Bureau released a supplemental report outlining its estimates and design for a 700-plus foot high dam with a 3,110 foot-long crest (later enlarged to 4,000 feet), and 52,600,000 cubic yards of volume.<sup>13</sup> It was this design that was hammered through Congress. President Lyndon B. Johnson signed the legislation authorizing the Auburn-Folsom South Unit as part of the Central Valley Project on September 2, 1965. The legislation also authorized other project features such as the Auburn powerplant, Folsom South Canal, Sugar Pine Dam and Reservoir, and County Line Dam and Reservoir.<sup>14</sup>

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<sup>12</sup> United States House of Representatives, Committee on Interior and Insular Affairs, *Auburn-Folsom South Unit, Central Valley Project, California: Letter from the Secretary of the Interior transmitting a report on the Auburn-Folsom South unit proposing expansion of the Central Valley project in California*, H.Doc. 305, 87<sup>th</sup> Cong., 2<sup>nd</sup> sess., January 18, 1962.

<sup>13</sup> Charles LeMoyné, Jr., to Assistant Commissioner and Chief Engineer, September 14, 1962; Regional Director to Director of Design and Construction in Denver, May 1976, FRC, Acc.# 115-97-196, Box 1.

<sup>14</sup> For a general history of the American River Division, of which the Auburn-Folsom South Unit is a part, see Simonds' project history.

## Initiating Construction

Even after authorization, the design of the project underwent substantial revision. In May 1966 Reclamation engineers F. C. Walker and M. A. Jabara proposed diverting the North Fork through two forty-foot diameter tunnels through the right abutment, one to convey water to the power plant and the other available for bypass. They also reported on the low quality and difficulty in securing earthfill materials for the dam. Each of these problems created delay, forcing Reclamation to return to the drawing board to rethink its original design.

In the design for Auburn Dam, impervious material required to create a water barrier made up maybe half of the volume of the earthfill dam. After Harold Arthur became chief designing engineer, at about the time Congress authorized the project, he traveled to California to inspect where project engineers planned to mine the earthfill—particularly the impervious material. Planners had concluded that top soil would have to be stripped almost to the rock over an extensive area not far from the city. The potential environmental impact of tearing up the countryside for construction materials alarmed the chief engineer. When he returned to Denver, Arthur directed a new study: this time for a concrete design that could avoid use of earthfill material. Fortunately, the foundation was ideal for a concrete dam. The problem was that the canyon was wide for an arch dam; the thin double curvature arch dam he recommended would have been, as he said, “the longest span in the world for that type of dam.”<sup>15</sup>

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<sup>15</sup> Harold G. Arthur, *Oral History Interview*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by Brit Allan Story, senior historian, Bureau of Reclamation, during 1994 and 1995, in Denver, Colorado, Edited by Brit Allan Storey, 2010, 61; *Congressional Record*, 122 (June 23, 1976): 19842.

With the new concrete dam design approved, plans moved ahead to begin construction. In June 1967, Reclamation awarded the first construction contract to O. K. Mittry and Sons of Gardena, California, for relocation of the Auburn-Foresthill Road. The new route required a long, steel truss bridge over a portion of the planned reservoir. Reclamation awarded separate contracts for construction of the bridge support structure, and for the superstructure and roadway. Made of steel imported from Japan in 1971, the superstructure spanned the canyon 720 feet above the valley floor, making Auburn-Foresthill Bridge the second-highest bridge built by Reclamation next to Glen Canyon Bridge in Arizona. On June 7, 1972, a “Flag Beam” ceremony attended by the Reclamation Commissioner Ellis L. Armstrong, representatives from Japan, and other dignitaries celebrated the superstructure’s completion; a year later contractors finished the bridge.<sup>16</sup>

For construction at the dam site, Reclamation awarded contracts for the diversion tunnel and the Folsom South Canal. Workers began digging exploratory tunnels and shafts at the dam site, and another Reclamation contractor, Walsh Western, constructed the tunnel. After holing through in 1971, the contractor began excavation in October and drilled through the rock on March 3, 1972. Unfortunately, only days before rock falling from the roof of the tunnel struck and killed Norman L. Konen, one of the laborers on the project. In the meantime, work began in earnest on the canal for earliest possible

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<sup>16</sup> Simonds, “The American River Division;” U.S. Department of the Interior, Bureau of Reclamation, “Project History, Auburn-Folsom South Unit,” Volume 36, Part III, 1971, in RG 115, Records of the Bureau of Reclamation, Acc.# 8NN-115-92-130, Box 96, National Archives and Records Administration, Denver, Colorado; hereafter cited as RG 115; “Project History, Auburn-Folsom South Unit,” Volume 37, Part III, 1972, in RG 115, Acc.# 8NN-115-92-130, Box 239.

operation. By the end of 1972, Reclamation had spent nearly \$100 million on the project.<sup>17</sup>

The work on Auburn Dam and the Folsom South Canal proceeded as Reclamation prepared the Auburn-Folsom South Unit Environmental Statement (ES). Released in draft form on February 19, 1971, the ES was subsequently filed with the Council on Environmental Quality in November 1972. The major environmental impacts of the dam, according to the report, were the inundation of the 43 miles of the river canyon, Lake Clementine, a small reservoir formed by North Fork Dam, the loss of wildlife habitat, and “some erosion” to the landscape. Moreover, some seventeen pre-historic and twenty-two historic sites—not “considered by the archeologists to be of major consequence”—would be lost. The report also happily reported on perceived benefits of the project, such as improved access to the area and cooler temperatures for the salmon downstream of the dam. In considering alternative sites to Auburn, the ES concluded that the best sites on the American already had been taken at French Meadows, Hell Hole, Union Valley, Loon Lake, and Folsom and that only sites available at Coloma and Salmon Falls would provide the storage capacity needed. The problem was that Coloma and Salmon were places of major historic significance as early sites of the gold rush. A modest dam and reservoir could be built at either site without inundating the historic sites, but they would be of negligible economic value. Thus, the ES essentially concluded that the Auburn site was the only option.<sup>18</sup>

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<sup>17</sup> Simonds, “The American River Division;” “Project History, Auburn-Folsom South Unit,” Volume 37, Part III, 1972, in RG 115, Acc.# 8NN-115-92-130, Box 239.

<sup>18</sup> U.S. Department of the Interior, Bureau of Reclamation, *Auburn Folsom South Unit, American River Division, Central Valley Project: Auburn Dam, Reservoir and Power Plant, Folsom South Canal Environmental Statement*, advance copy July 1972, 1-2, in FRC, Acc.# 115-94-195, Box 3.

The ES appeared well into construction of the dam and at a time when environmentalists had begun to launch determined opposition to the dam. In fact, the ES gave critics of the dam fodder to attack what they perceived as incompetent, inadequate handling of the planning, design, and construction of the project. Gerald Meral of the Environmental Defense Fund lambasted the report for being incomplete, unsupported, and stretching the truth, calling it “one of the most poorly prepared I have ever attempted to review.” He requested a new draft ES incorporating recent data and information, and a halt to contracts and construction until filing of the final ES. The Mother Lode Chapter of the Sierra Club commented that the ES inadequately addressed the impacts to the environment and falsely gave the impression that “this is just another typical reclamation project” without giving a sense of its scale. According to the Sierra Club, the authors of the ES exaggerated the benefits to flood control and ignored reasonable alternatives like flood plain zoning and enlarged levees that could be built at a fraction of the cost of a dam.

Indeed, if environmentalists could puncture the notion that there was a need for a dam to protect Sacramento and vicinity from flooding, then the argument for the dam was much weaker. Even more so because while the dam had been designed to deliver water to the East Side Project and that project had yet to receive authorization and future prospects on that front did not seem bright. Dam proponents liked to say that the Auburn Dam was necessary for the Folsom South Canal, but this too was mistaken since Folsom Reservoir was originally slated to provide that water.<sup>19</sup>

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<sup>19</sup> *Environmental Statement*, advance copy July 1972, A-24, A-48, A-52.

The ES prompted the Natural Resources Defense Council, Save the American River Association, and the Environmental Defense Fund, Inc., to take the issue to the courts. On December 15, 1972, they filed a suit against the Bureau of Reclamation and the Department of the Interior to try to delay construction pending a review of the environmental impact report. Anti-dam groups also sent a letter to the Nixon administration's budget officials to convince them to halt funding permanently on the project. In April 1974 a federal judge ordered Reclamation to do a more complete environmental report on the dam, but the complaint was later dismissed and the Bureau had a clear path to continue construction. By 1975 contractors completed the 265-foot high cofferdam and made substantial progress on the dam's excavation.<sup>20</sup>

### **Derailing Auburn Dam**

That environmentalists called into question the basis of a dam at Auburn should come as no surprise. Auburn was to be the CVP's and one of Reclamation largest dams at a time when the environmental and the anti-dam movements were gaining momentum. In actual terms, however, environmental protest over Auburn Dam was little more than white noise by a handful of vocal opponents. The best that can be said is that environmental critique of large dams and increasing awareness of destructive ecological consequences led Reclamation to adopt environmentally friendly construction techniques at Auburn Dam. The Bureau imposed strict standards on contractors to prevent water pollution, limit landscape scarring, eliminate air pollution, control dust, monitor blasting, and reduce noise. It issued a guidebook for safe environmental construction practices and

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<sup>20</sup> "Project History, Auburn-Folsom South Unit," Volume 38, Part III, 1973, appendix, in RG 115, Acc.# 8NN-115-92-130, Box 245; "Another Side of the Story," *Auburn Journal*, in *Congressional Record*, 119 (March 2, 1973): 6268; Simonds, "The American River Division."

reportedly worked with the public, city officials, and conservation groups in implementing good construction practices. Commissioner Stamm noted the irony that “never before has the Bureau given more consideration to the protection of the environment, yet the Bureau found itself under constant attack from persons claiming to oppose the project on environmental grounds.”<sup>21</sup> Actually, the situation was not as ironic as the commissioner believed. Reclamation likely bent over backwards to be good stewards due to, not in spite of, environmental litigation and vocal opposition. Moreover, critics protested not only poor environmental practices but the existence of the dam itself.

Environmental criticism had little affect the solid political and public support the dam enjoyed up to 1975. Support for the project turned sour on August 1, 1975, when a 5.7 magnitude earthquake struck Oroville, California, about 45 miles north of Auburn. Tom Aiken, an administrative officer working on Auburn Dam, remembered sitting at his desk in the Livingston Building in Auburn when the quake perilously rocked for several seconds the old World War II structure built of lumber scraps. It was no surprise that the Oroville area was seismically active; in 1940 a 5.7 magnitude quake rocked the area. This time around, however, investigators found ground ruptures; some found a distance from the epicenter, raising questions about the stability of the entire region. Moreover, the epicenter was close to Oroville Dam, built between 1961 and 1968 by the State of California and touted as the United States’ tallest and one of the world’s largest earthfill dams. The size and proximity of the reservoir raised the question of whether the quake had been reservoir induced. Since the first observations at Algeria’s Quedd Fodda Dam

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<sup>21</sup> Don Alexander and E. R. Lewandowski, “Protecting the Environment at Auburn Dam,” *Reclamation Era*, 61 (Spring 1975): 25.

in 1932, it is well established that reservoirs behind large dams can activate earthquakes, although it is not well known when they will occur or their magnitude.<sup>22</sup>

The idea of reservoir-inducing quakes was cause for alarm given that the dams at Folsom and Auburn, like others in the West, that sit directly above large population centers. A failure at the Auburn site would send a 100-foot-high wall of water tearing downstream, washing out Folsom Dam and imperiling the lives and property of people in Sacramento and vicinity. Reclamation architects had even considered this possibility after a 6.6 magnitude earthquake at San Fernando, California, in 1971 prompted Reclamation to rethink its engineering practices to produce quake resistant designs. The Engineering and Research Center formed a team to study where in the vicinity of Auburn Dam earthquakes might strike and what new technologies might be used to protect against them.<sup>23</sup>

Auburn Dam site lay on a shear zone with faults of varying lengths and widths. The Bear Mountain fault zone passed to the east and the west of the dam site. Geologists predicted that the ancient faults had been dormant for 130 million years, but just how long they would remain inactive was unknown. Still, whether active or not, the fault represented a weakness in the earth's crust and could shift under pressure. Reclamation set out to address questions of geology, seismicity, and dam design.<sup>24</sup>

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<sup>22</sup> Thomas J. Aiken, *Oral History Interview*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by Brit Allan Storey, senior historian, Bureau of Reclamation, from 1995 to 2004, in Folsom and Auburn, California, Edited by Brit Allan Storey, 14-15; U.S. Department of the Interior, Bureau of Reclamation, *Auburn Dam Interim Construction Geology Report*, by J. Wendel Carlson, prepared for Reclamation's Folsom Office, Central Valley Project, 1990, 199. For information on reservoir-induced seismicity, see Patrick McCully, *Silenced Rivers: The Ecology and Politics of Large Dams* (London: Zed Books, 1996), 112-15.

<sup>23</sup> *Congressional Record*, 122 (June 23, 1976):19841.

<sup>24</sup> *Auburn Dam Interim Construction Geology Report*, 199.

Even more damaging to the Auburn Dam project than the earthquake at Oroville was the catastrophic collapse of Reclamation's Teton Dam in southeastern Idaho on June 5, 1976. The breach in the dam emptied the reservoir within a few hours, killing eleven people and causing an estimated \$2 billion in damages.<sup>25</sup> A single cause for the failure was never found, but investigations into the disaster found that fissures in the foundation that grouting efforts failed to seal and the use of erodible clay silts in the key trench attributed to Teton Dam's failure. It was a dam, critics charged, built in an area known to be unstable, opposed by many locals, and far outreaching of the ability of farmers to repay. The correlation to Auburn Dam was obvious: here was another dam being constructed on a suspect foundation, upstream of a much larger population, and declared by some to have highly exaggerated economic and flood control benefits. The tragedy at Teton Dam damaged Reclamation's confidence and, perhaps most of all, reputation as one of the world's premier engineering outfits. After the Teton Dam failure this self-doubt had lingering effects, as Aiken flatly states, "[we began] to start second-guessing ourselves and to be tentative, and anytime anybody would bring anything up about seismic safety this or anything related to the construction [of Auburn Dam], we just seemed to qualify and back pedal.... I think we lost the confidence of the public on this and never regained it."

The Oroville earthquake and failure of Teton Dam not only changed the tone and contours of the Auburn Dam debate, but simultaneously gave critics fodder to attack the project with renewed vigor. According to Thomas Aiken, before the quake most people supported the dam, with the exception of a handful of vocal opponents, but after Oroville,

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<sup>25</sup> This estimated damage from the collapse of Teton Dam is cited in Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* (New York: Penguin Books, 1993), 407.

public meetings were “pretty much dominated by the environmentalists, the anti-dammers.”<sup>26</sup> Whereas before the quake and Teton Dam the burden of proof rested on environmentalists to show how the dam imperiled fish resources in the river or caused “substantial, irreparable environmental loss” to the canyon, the discussion now turned on dam advocates asked to defend the structure’s safety. After the Oroville quake and the disaster at Teton Dam, the notion of “killer dams” took on a new and ominous meaning.<sup>27</sup>

And yet, the earthquake, failure of Teton Dam, and studies did not put a halt to the multi-million dollar dam. Congress continued to appropriate funds for construction activities—over the objections of California Senator Alan Cranston who argued that to do so while unresolved issues surrounded the project was “irresponsible”—throughout 1979 contractors continued working on the foundation.<sup>28</sup>

### **Surviving Carter’s Hit List**

Within a month of taking office, Jimmy Carter took a red pen to Gerald Ford’s budget for fiscal 1978—starting with expensive, possibly outdated, and environmentally suspect water programs. On February 19, 1977, he declared his intention to begin an official review of nineteen projects, five of which belonged to the Bureau of Reclamation, for the purpose of cutting or eliminating funding. “Difficult choices have to be made,” the president emphasized in a press statement announcing the results of the review. “I have tried to be fair and to give the benefit of the doubt on some projects which would certainly not be justified if they were proposed today. However, I have not

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<sup>26</sup> Aiken, *Oral History Interviews*, 15-16, 20; Independent Panel to Review the Cause of the Teton Dam Failure, “Report to the Secretary of the Interior and the State of Idaho on the Failure of Teton Dam,” Idaho Falls, Idaho, December 1976, in RG 115, , Box 8, National Archives and Record Center, Denver, Colorado.

<sup>27</sup> “Another Side of the Story,” 6268-69.

<sup>28</sup> *Congressional Record*, 122 (June 23, 1976): 19841.

hesitated to recommend termination or modification of projects which appeared justified when they were originally authorized.” In his mind, cutting economically questionable and environmentally harmful projects was a start to reforming water policy in the United States.

Auburn Dam was among those slated for termination. Carter boldly proposed slashing funding to Auburn Dam and write off the \$233 million already allocated. The dam and reservoir did not make economic sense with a benefit/cost analysis that provided a federal irrigation subsidy of \$1,626 per acre to local farmers. The administration also noted other questionable project aspects such as water contracts, rights, and water supply on the American River; dam safety and the threat to the lives of 750,000 persons living downstream; environmental impacts like loss of a free-flowing river and the adverse impacts to fish and wildlife downstream during times of low flow.<sup>29</sup>

Carter’s earnest attempt to slash federal budget by eliminating or substantially altering water projects in the West launched a firestorm of western anger over the heavy-handed indifference of the federal government. A correspondent of the *Washington Post* dubbed the projects slated for review the “Hit List,” giving the review a pejorative connotation. Water in the West is highly protected and water projects traditionally fall under the purview of Congress. By taking a stand against wasteful pork barrel water projects, Carter unwittingly damaged his relationship with Congress. Later, he moderated his position and supported authorizing several projects initially proposed to be slashed. The president removed Auburn Dam from the hit list after studies proved that

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<sup>29</sup> White House, Office of the White House Press Secretary, “Statement on Water Projects,” April 18, 1977 in Carter Hit List Binder, U.S. Department of the Interior, Bureau of Reclamation, History Program Files, Denver, 15A.

the dam as designed was not a risk for failure. In fact, Carter’s position on the dam at Auburn was quite consistent, since the original review never issued a final moratorium on the dam—only that certain issues needed addressing before receiving public funding.

Foremost on this list of issues was dam safety. In the review directed by the White House, the Department of the Interior required Reclamation to “prove, according to its own guidelines, that all of these faults are inactive.” Only then could a decision be made about the design and form of the dam. Studies proved the foundation contained different kinds of rocks of varying strength, adding to the instability of the site. Some engineers believed that the proposed thin arch dam was inadequate to withstand a quake. H. R. Cedergren, an engineer who worked as a consultant on dam safety, believed that if a quake damaged the structure, an earthfill dam would fail more slowly and allow more time to evacuate. Less urgent but still of critical concern, the review pointed to the possible erosive and eddying effects of heavy volume water releases during power plant operations.<sup>30</sup>

When Interior Secretary Cecil Andrus released the water review, Reclamation had internally formed a “Seismic Study Team” and hired a nationally known private firm in San Francisco, Woodward-Clyde Consultants, to perform geologic and seismic studies to determine an appropriate design for the dam. The review anticipated that the Woodward-Clyde Consultants study would report on the probability of quake activity on the site by June 1, which would be evaluated in turn by a five-person panel of consultants not associated with Reclamation. In June-July 1977, after great public expense, the

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<sup>30</sup> U.S. Department of the Interior, Water Projects Review, Auburn Folsom-South, Central Valley Project, California, April 1977, 4-6, in Carter Hit List Binder.

consulting firm released its eight-volume report called “Earthquake Evaluation of the Auburn Dam Area.”<sup>31</sup>

The firm’s findings were a mixed bag. Not surprisingly, the studies found active and inactive faults in the western Sierra foothills. But while the firm identified six active faults within twenty miles of the dam site—the closest one three miles away—it also reported “a very low to low probability that active faults traverse the Auburn Dam foundation.” The report also commented on the question of reservoir-induced seismicity, and predicted 2 to 30 percent likelihood at Auburn.<sup>32</sup>

Prior to the conclusion of the seismic studies, Reclamation had publicly believed that the original feasibility and design of Auburn Dam would be vindicated. As Commissioner Stamm remarked to Congress, “We have no doubt in our minds but what a satisfactory structure can be designed. It is simply a matter now of confirming whether our present design is fully adequate in the circumstances, or whether we should modify it in light of these two recent actions.”<sup>33</sup> When the consulting firm released the estimate that a 6.5 quake might shift the foundation by nine inches, Reclamation feared these findings would undercut support and viability for a dam. According to Aiken, head geologist Lou Fry took it upon himself to find individual geologists who could refute the statements made by the contracting firm hired by the Bureau. Reclamation probably also hoped that the U.S. Geological Survey’s (USGS) technical review of the report would confirm the relative stability of the Auburn Dam site.<sup>34</sup>

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<sup>31</sup> *Auburn Dam Interim Construction Geology Report*, 210.

<sup>32</sup> *Ibid.*, 211.

<sup>33</sup> *Congressional Record*, 122 (June 23, 1976): 19841.

<sup>34</sup> Aiken, *Oral History Interviews*, 17.

Ironically, the USGS not only disagreed with the Reclamation's assessment but was even more critical of the stability of the dam site than the consulting firm had been. It concluded that during a 7-point magnitude earthquake the foundation could shift by more than three feet. In the face of such findings, Reclamation quickly aligned with the Woodward-Clyde Consultants criteria to design a dam that could withstand an earthquake of 6.5 with ground movement of 9 inches. Some were critical of the Bureau's outright dismissal of the USGS findings. California congressman Leo Ryan, vocal opponent of Auburn Dam, criticized Reclamation for not making a "full and careful analysis that is required."<sup>35</sup>

At the end of 1978, the State of California released its own findings. It found no historical evidence of a quake of "destructive magnitude," and concluded that the chances of a large quake near the dam site were "very small." Still, the safety of thousands downstream required the dam to be "based on very conservative requirements." Weighing in on the question of strongest probable quake and amount of surface displacement, the state believed the dam needed to withstand a shift of at least five inches.

In some ways, the dam safety reports confirmed the worst fears of the dam's most ardent proponents, and many in Reclamation, that while the evidence for quakes at the dam site was nil or close to it, the dam design needed to meet requirements for a potentially large destructive quake.<sup>36</sup> Conversely, the extensive seismic studies inspired confidence in Reclamation's ability to build a new dam that reflected the best estimates

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<sup>35</sup> John Kendall, "U.S. Sets Auburn Dam Quake Standards," *Los Angeles Times*, September 15, 1978; George L. Baker, "Congressman Decries Auburn Dam Standards," *The Sacramento Bee*, September 16, 1978, A10, in FRC, Acc.# 115-08-081, Box 4.

<sup>36</sup> *Auburn Dam Interim Construction Geology Report*, 215.

and predictions of some of the world's top scientists. Reclamation accepted the contracting firm's parameters that the dam had to withstand a quake that could move the dam nine inches. Tighter restrictions on the dam's design might make such a dam prohibitively expensive, but the target had been reached and now a design could move forward.<sup>37</sup> It did not hurt the dam's proponents that a 1979 study found that the Oroville earthquake had not been reservoir-induced, and in fact the Oroville Dam could have withstood even more than the 1975 quake.<sup>38</sup>

As Commissioner Keith Higginson saw it, the Bureau of Reclamation had two options either scrap the project and recommend no seismic design parameters, or select a design endorsed by the experts. Reclamation settled on the second option and recommended a curved concrete gravity-type dam at Auburn. The Carter administration finally closed the debate over design and safety of the dam when, in December 1980, it announced that a safe dam could be built at Auburn and that it backed the project if issues of water rights and cost-benefits could be worked out.<sup>39</sup>

### **Auburn Dam in the Reagan Era**

Ronald Reagan's election to the presidency in 1981 initiated a new era in American politics. Riding on the crest of support of a curious wedding of the working and middle classes, Reagan and his allies trumpeted less government, fiscal responsibility, the "free" market, and states' rights. These principles influenced the course of federal water policy and development. Of course, before Reagan the U.S. had

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<sup>37</sup> Interior, News Release, "Secretary Andrus Approves Recommendation by Reclamation for Auburn Dam Seismic Design Parameters," July 30, 1979, in FRC, Acc.# 115-08-081, Box 4.

<sup>38</sup> "\$1.7 Million Study: Oroville Dam Termed Safe," *Sacramento Union*, April 17, 1979, in FRC, Acc.# 115-08-081, Box 4.

<sup>39</sup> Judy Ronningen, "New Dam Design Is Recommended," *Auburn Journal*, September 25, 1980; Commissioner to Secretary, memorandum, August 1979; Robert A. Rosenblatt, "Auburn Dam Can Be Safe, Andrus Says," *Los Angeles Times*, December 31, 1980, in FRC, Acc.# 115-08-081, Box 4.

already entered into a new, post-dam era, reflected in the brief name change from the Bureau of Reclamation to Water and Power Resources Service. Reagan's policies such as initiatives to reduce federal funding for water projects and increase cost sharing by local beneficiaries contributed to this trend. They also had a profound effect on the future of Auburn Dam.

Although concerns over safety and design had been effectively resolved, other major concerns continued to haunt the project. The central concern was the project's exorbitant projected cost of up to \$3 billion according to some estimates. As Guy W. Martin, assistant secretary of the interior under Andrus who was known to oppose water projects, opined, "If Auburn Dam is built, it would be the most expensive dam ever built in the United States. Construction of Auburn should not resume and steps leading to deauthorization of the project should be taken immediately."<sup>40</sup>

In addition there were other unresolved issues: uncertainty over water rights, water flows in the American River, and other environmental impacts. Huey Johnson of the California Resources Agency criticized the new ES for downplaying the loss of forty-eight river miles, not adequately addressing the question of erosion or siltation, and failing to probe fully for alternatives to the dam. Moreover, Reclamation had exaggerated the dam's benefits by pushing a project that only benefitted agricultural interests at the expense of all others.<sup>41</sup>

Johnson also criticized dam designers for ignoring key points like the impact of water at Auburn on the river downstream. Originally, the plan was to service the Folsom

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<sup>40</sup> Ellen Hume, "Auburn Dam Could Be Nation's Costliest," *Los Angeles Times*, December 31, 1980 in FRC, Acc.# 115-08-081, Box 4.

<sup>41</sup> Diane Alters, "US Auburn Dam Plans Lambasted As Inadequate," *The Sacramento Bee*, October 31, 1980, in FRC, Acc.# 115-08-081, Box 4.

South Canal area using water from Folsom Dam and Auburn Dam by a gravity diversion at Nimbus Dam downstream of Folsom. Delivery of this water could be made after existing rights and contracts like a 1957 agreement to maintain river flows for fish had been met. While construction of the canal began in 1968, strong opposition to the canal and its impact on river flows forced the secretary of the interior to halt construction until an agreement could be reached. California later increased the mandatory minimum flows of the lower American River for the health of the river and the Sacramento River-San Joaquin River Delta. In December 1982 studies concluded: that flows ought to be higher than those required in the 1957 agreement; that Folsom Reservoir water was adequate to serve the Folsom South area; that water from Folsom alone was insufficient to maintain the new state-mandated flow conditions for the American River.<sup>42</sup>

In the mid-1980s several congressional bills attempted to resolve the concerns at Auburn Dam and get the project moving. In 1984 California senators Pete Wilson and Alan Cranston introduced legislation authorizing the secretary of the interior to enter into cost-sharing negotiations with interested parties.<sup>43</sup> The next year Congressman Norman Shumway also introduced legislation to reauthorize construction of Auburn Dam that contained sections addressing the project's impact on river flows and fish populations. He said that the project could "actually enhance the lower American's flows." A dam at Auburn, he argued, was essential to maintain river flows when twenty to thirty years out water users in Placer and El Dorado counties and in the Folsom South area would have no choice but to turn to surface water to satisfy existing water rights. He advised his

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<sup>42</sup> U.S. Department of the Interior, Bureau of Reclamation, and State of California Department of Water Resources, *Options for Auburn-Folsom South Unit*, Prepared for the Joint State-Federal Auburn Dam Task Force, June 1984, 8-11, in FRC, Acc.# 115-97-196, Box 1.

<sup>43</sup> *Congressional Record*, 130 (February 9, 1984): 2494.

audience that political means to allocate water and to meet current water obligations was inadequate in the face of drought and continued groundwater depletion.<sup>44</sup>

Not congressional action, but a devastating flood in northern California in 1986 gave the debate over Auburn Dam renewed vigor. Reportedly, the flood water nearly toppled Folsom Dam, prompting some to argue more assiduously for stronger flood protection measures for the safety of life, protection of property, and avoidance of higher flood insurance rates in the Auburn-Sacramento areas. In 1987 Congressman Shumway introduced another piece of legislation to reauthorize Auburn Dam that emphasized the need for flood protection above all else. “The 1986 flood,” he claimed, “was a dramatic reminder that unless the Sacramento area comes to grips with the need for an Auburn Dam, it is living on borrowed time.” Ironically, critics of the project turned the flood control arguments on end by arguing that given the threat of earthquakes, the dam posed “a greater flood threat to Sacramento than any storm imaginable.”<sup>45</sup>

In the meantime, the secretary of the interior and California Governor George Deukmejian formed a task force on Auburn Dam to reach out to interested parties on questions of design, cost sharing, power generation, water rights, and other issues. This joint federal-state task force set out to find a solution to the high costs of the dam and to consider all possible alternatives acceptable to water users. It revisited dam designs and even considered a site for the dam about 0.2 miles below the original site where the canyon is narrower. Later, another technical work group in which Reclamation took part

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<sup>44</sup> “Introduction of Auburn Dam Legislation by Hon. Norman D. Shumway of California, February 21, 1985,” *Congressional Record*, 131 (February 21, 1985): 3079-80.

<sup>45</sup> “The Auburn Dam Revival Act of 1987, remarks by Hon. Norman D. Shumway of California,” *Congressional Record*, 133 (March 12, 1987), 5680; Bea Cooley, “No,” in RG 115, Records of the Bureau of Reclamation, Waterways and Concrete Dams Group, Internal Files, Acc.# 115-86-68130, National Archives and Records Administration, Denver, Colorado, hereafter cited Internal Files.

preferred a location about 1.1 miles upstream of the original site. This group eventually released a report in July 1987 that offered five dam and reservoir sizes ranging from 2,326,000 acre feet to 315,000 acre feet for consideration at this proposed site upstream. Any new site, however, negated what work had already been done on the dam, and required that all work start from scratch.<sup>46</sup>

Before introducing a reauthorized project to Congress, dam supports needed to address financial issues. About the time when the task force issued its findings, Interior Secretary Donald Hodel controversially stated that if local and state interests wanted Auburn Dam, they needed to take the lead. Probably no one expected the federal government to fully finance large construction projects, as it had done in the past, but Hodel's position made some fear that the government was washing its hands of the project entirely. In fact, as was later clarified, Hodel simply meant that local interests had to provide a credible cost-sharing plan and assert local leadership if they wanted the dam in the near future. Auburn Dam was not the government's top funding priority and would have to wait unless beneficiaries took the lead in developing financing schemes and using its political clout to influence Congress.<sup>47</sup>

In fact, the secretary's idea to turn the project over to the state was levelheaded and not unreasonable. California had a long history of taking the initiative in the development of its water resources. Using bonds originally authorized by the state legislature in 1933, the state began work on the California Water Project, a CVP-type water project designed to store water in the northern part of the state and divert it—

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<sup>46</sup> David Houston, Regional Director, and David Kennedy, Director of California Department of Water Resources, to Power Interests, July 1984, in FRC, Acc.# 115-97-196, Box 1; *Auburn Dam Interim Construction Geology Report*, 236-40.

<sup>47</sup> Associate Secretary Ziglar's ACWA speech, memo from commissioner, May 1987; J. Austin Burke to Anthony J. Golden, August 1987, Internal Files.

actually, and pump it long distances uphill—to Southern California. By 1989 the state project had cost approximately \$3.7 billion—compared to CVP’s \$3.2 billion—numbered 25 dams and reservoirs, 683 miles of aqueducts, and eight hydroelectric power plants.<sup>48</sup>

David Kennedy of the California Department of Water Resources said the state might be willing to take over the project if the federal government paid for the costs of flood control. For some the idea to have the state take the initiative not only boded well for the life of the project but presented more flexibility and common sense. While Reclamation seemed to advocate for a high dam at Auburn regardless of the alternatives, the state reportedly was willing to explore all options for flood control and to work with the community to meet those needs.<sup>49</sup>

When in 1988 the American River Authority (ARA) of Placer and El Dorado counties agreed to finance \$700 million for the water and power costs of the project, proponents were heartened that the project would move forward. In 1989 Shumway again introduced authorizing legislation that he believed would placate environmentalists and other interest groups who had expressed concern over the dam. In his view, the possibility for cost-sharing and evidence of the need for the dam clearly pointed to the feasibility for a large, multi-purpose dam.<sup>50</sup>

The problem for proponents of a multipurpose Auburn Dam was that if flood control drove the debate, then traditional flood control measures which were much cheaper than a large dam might win the day. The Army Corps of Engineering and state studies emphasized standard flood protection over water and power development.

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<sup>48</sup> Dawson, et al., *The Great Central Valley*, 211.

<sup>49</sup> “The States’ Good Dam Idea,” *The Sacramento Bee*, July 30, 1987, in FRC, Acc.# 115-97-196, Box 1.

<sup>50</sup> The Auburn Dam Revival Act of 1987, *Congressional Record*, 133 (March 12, 1987): 5681; Shumway Legislation 1989; Vic Fazio and Robert T. Matsui to Norman Shumway, April 5, 1990, 6, Internal Files.

Congressman Robert T. Matsui even introduced legislation in 1988 and again in 1989 authorizing the Corps to construct levee improvements on the American and Sacramento rivers and a flood control dam (or “dry” dam) on the American River. Proponents of a large, multiple-use dam saw several flaws in this proposal. They argued that standard flood protection still entailed high insurance rates for new developments and the need to raise existing structures on stilts where they sat on a low-lying flood plain. Finally, Congressman Shumway claimed that “the wild and scenic Lower American River would be left unprotected perhaps shrink to a mere trickle during summer months within twenty years as an already-state-granted water rights to the American River water are increasingly used.”<sup>51</sup>

In 1989 the Corps responded suggesting that “an expandable dam,” built as a flood control structure, could be enlarged into a multi-purpose structure. By changing the contours of the debate from either a large, multipurpose dam or no dam at all, the Corps argued that an expandable dam provided the best chance to get any dam at all on the lower American River and to appease all contending interests. The Corps’ proposal had the added benefit of eliminating the complexity of organizing diverse interests to support and finance the project. Focusing primarily on flood control obligated the federal government to finance seventy-five percent of the estimated \$530 million, as per new Reagan administration water project financing provisions. Congress later appropriated funds to Reclamation to study water and power potential of an expendable dam.<sup>52</sup>

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<sup>51</sup> Sacramento Area Flood Control Act of 1988, “Remarks by Hon. Robert T. Matsui of California,” *Congressional Record*, 134 (July 14, 1988): 18499; “The Auburn Dam Revival Act of 1987,” *Congressional Record*, 133 (March 12, 1987): 5681.

<sup>52</sup> Jim Mayer, For Perhaps Last Time, ...” *The Sacramento Bee*, December 13, 1989; Larry Boll, memorandum, February 19, 1988, in FRC, Acc.# 115-97-196, Box 1: Reference to the congressional appropriation is noted in Dennis Underwood to Norman Shumway, October 1990, Internal Files.

The Bureau of Reclamation's role in planning or advocating either a large dam or a flood control structure was somewhat nominal. Reclamation had its hands tied because, while the 1965 authorization had never been decommissioned, in the twenty five intervening years the purposes of the dam, environmental standards, and cost estimates had changed so much that Congress had to reauthorize the project. Not only dam costs skyrocketed, the general consensus now was for a dam that delivered flood control first, then possibly water and power second, unlike the multipurpose dam originally conceived.<sup>53</sup> Moreover, there could be no dam until cost-sharing partners came forward to finance the project. Even though the American River Authority stepped forward to finance \$700 million of water and power costs, the Central Valley Project Association, which represents the major water contractors on the project, refused to integrate the dam into CVP operations.<sup>54</sup>

### **Doolittle's Multi-Purpose Dam**

Several developments in 1990 promised new life for Auburn Dam. Several water agencies in the Sacramento area combined to create the Sacramento Area Water Authority and indicated their willingness to join with the American River Authority in financing the dam. San Joaquin County also expressed interest in financing the venture. In November, citizens of Sacramento County voted in favor of an initiative requiring the county board of supervisors to actively pursue the multipurpose dam at Auburn. California's newest congressman, John Doolittle, who replaced Norman Shumway in California's 14th Congressional District, believed these developments to be "irrefutable

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<sup>53</sup> William Edgar to Larry Margolis, July 18, 1990, Internal Files.

<sup>54</sup> Fazio and Matsui to Norman Shumway, April 5, 1990, Internal Files; Bureau of Reclamation, "A Briefing Paper on Auburn Dam," September 19 and 21, 1990, Bureau of Reclamation's Office of Public Affairs, 2.

evidence that this project is both sorely needed and economically viable.”<sup>55</sup> A former Republican state senator and conservative who advocated state’s rights and local control of resources, Doolittle had been a strong advocate for a multipurpose Auburn Dam. When the Corps recommended an expandable dry dam, Doolittle as state senator resolutely opposed it. “There is not going to be any consensus on a dry dam and if that is the position of Mr. Kennedy or Bill Edgar [of the Sacramento Area Flood Control Agency], they are dreaming.” As a member of the U.S. House of Representatives he became the dam’s foremost champion.<sup>56</sup>

When H.R. 5754 Water Resources Development Act of 1992 came before Congress authorizing an expandable dry dam on the American River, Doolittle quipped that the bill “basically meets only one special need of the city of Sacramento and ignores all the others.” He argued a dry dam would have devastating impacts to vegetation and wildlife when the dam periodically fills; to fish populations as water levels at Folsom Reservoir drop, and to the aquifer in San Joaquin County. He also criticized the Corps’ proposal for not being able to pay for itself and for not having the facilities necessary to store water behind the dam. Fellow California Congressman Vic Fazio countered by saying that if a flood hit, the dam would pay for itself overnight and that

we have no intention of precluding a multipurpose project from being built with State and local funds. I want to make clear to people on both sides of this debate, ... that we cannot debate it forever and at the same time leave the people of the flood plain in Sacramento County vulnerable to the kind of flooding that occurred in 1986 and that could occur again.

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<sup>55</sup> “A Briefing Paper on Auburn Dam,” September 19 and 21, 1990, Bureau of Reclamation’s Office of Public Affairs, 2; “Doolittle remarks on H.R. 2427, May 29, 1991,” *Congressional Record*, 137 (May 29, 1991): 12794.

<sup>56</sup> Mayer, “For Perhaps Last Time, ...”

However, opposition led by Thomas Petri of Wisconsin and George Miller of California entered the debate arguing that cost efficient and environmentally friendly alternatives had not been fully considered. In the end, the legislation failed to clear the House.<sup>57</sup>

Nothing this contentious and polarizing could remain at rest for long. Reportedly, the Army Corps began to seek funding for an even larger and more expensive project and the Bureau of Reclamation entertained new dam construction proposals. Petri once again jumped into the debate and introduced a bill to prohibit construction of a dam on the American River at Auburn using federal funds.<sup>58</sup>

Auburn Dam remained an issue after the turn of the twenty-first century, although it generally lay on the margins and not seriously considered by any but a vocal minority. John Doolittle continued to propose turning the dam over to the state in part because he felt the environmentalists did not have as much influence at the state level. Likewise, he used the notion of safety to appeal to the emotion and fear of the public by invoking the destruction of Hurricane Katrina in the Gulf Coast as an analog to what might occur in the American River Valley absent Auburn Dam. Invoking the threat to Sacramento in the event of a massive flood was a powerful argument. Even California politicians like Diane Feinstein not particularly supportive of Auburn Dam spoke of protecting Sacramento with at least 100-year flood protection.<sup>59</sup>

In 2005 Doolittle secured \$1 million to reopen a study on how much it would cost to build the dam. Two years later Reclamation said it would cost \$6 to \$10 billion, twice

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<sup>57</sup> *Congressional Record*, 138 (September 23, 1992): 27228-30, 27274.

<sup>58</sup> “Congress Should Vote ‘No’ on the Auburn Dam,” *Congressional Record*, 142 (February 1, 1996): 2315.

<sup>59</sup> Aiken, *Oral History Interviews*, 67; *Congressional Record*, 151 (November 14, 2005): 12746.

the previous estimate.<sup>60</sup> Stewart Udall's appeal in 1962 for speedy authorization and construction to avoid rising costs turned out to be more prophetic than he could have known.

### **The Fatal Blow**

In May 2008 Congressman Doolittle, Reclamation Commissioner Bob Johnson, and local water interests gathered at the Auburn Dam site to dedicate the American River Pump and River Restoration Project. The new pump would deliver water to Placer County, and the restoration work redirected the river to its original channel after thirty years flowing through the diversion tunnel. Doolittle remarked at the dedication, "I've been bigger on dams than river restoration but I have to admit this looks pretty good." Still, he reiterated his support for a multipurpose dam at Auburn and urged the crowd to fight to maintain federal water rights for the dam. "The time will come [when Auburn Dam is necessary], and if we don't have the water rights, we're dead."<sup>61</sup>

Doolittle's fear of losing rights to the water from the American River was well founded. On December 2, 2008, the California State Water Resources Control Board, which has the authority to allocate water and protect water quality in California, revoked federal water rights to the American River at Auburn. Reclamation argued that it ought to retain rights until Congress makes a definitive decision. The board, however, disagreed following the line of reasoning that has long governed water use in the West to "use it or lose it" and rescinded Reclamation's right to 2.5 million acre feet of water per year from the American River. As board spokesman William Rukeyser put it, "This is a

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<sup>60</sup> Chris Bowman, "Death Knell for Proposal Auburn Dam," *The Sacramento Bee*, December 3, 2008.

<sup>61</sup> Gus Thomson, "Doolittle, Restored River Get Star Treatment at Pump Plant Dedication," *Auburn Journal*, May 29, 2008.

death certificate.” There is always the possibility of the board reissuing the water rights, but other interests have already vied for the defunct water rights and Congress is unlikely to pursue construction of the dam, at least in the foreseeable future. The board’s announcement came just as Doolittle was retiring from public life under a cloud of ethics violations connected to the Jack Abramoff bribery case.<sup>62</sup>

## **Conclusion**

Few public works projects have ever had the drama or duration as the fight for water development at Auburn on the lower American River. The dam underwent multiple evolutions in design and political support. It was not simply that one issue like economics, dam safety, or water rights that kept the water project from seeing the light of day, but that interested parties fought and argued over all of these points for over five decades. For all camps, the fate of the lower American River transcended the immediate issue of a dam and became a veritable symbol of systemic conflicts over resource allocation, development, and scarcity in the United States.

The controversy over Auburn Dam is generally depicted in terms of environmental protectionism versus developmental utilitarianism. Indeed, since approximately 1970 environmental opposition to the dam has been tough and unrelenting. As environmental values of protecting free-flowing rivers, endangered species, and habitat moved into the political mainstream, dam supporters and the Bureau of Reclamation in particular moved to the defensive and never regained position. Yet environmental concerns neither derailed nor killed the dam. Dam safety and, after 1980, economics posed the biggest roadblock for a multipurpose dam at Auburn. The dam

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<sup>62</sup> Samantha Young, “State Board Revokes Permits for Dam Project,” *Ventura County Star*, December 3, 2008; Bowman, “Death Knell for Proposal Auburn Dam.”

likely would have been completed had twin events—the Oroville earthquake and the Teton Dam failure—not resulted in its ultimate demise. If anything, these events called attention to the safety and questionable economics of the nation’s water project and, some would argue, outdated water policies. The Carter administration was sensitive to the environmental problems of the dam, but neither it nor succeeding administrations eliminated water projects on those considerations alone.

Regardless of who you talk to, the Auburn Dam is an unmitigated disaster. To people who continue to hold that the dam ought to be built, the recent California state decision to rescind Auburn Dam water rights was the latest hit in the long and frustrating fight over Auburn. Critics of Auburn Dam certainly welcomed the board’s decision, but the fight had been tedious, lengthy, and expensive. The trajectory of Auburn Dam is partly a consequence of allowing contending voices a place at the decision making table. Reclamation does not have the stature it once had with the public and within the Department of the Interior, and its operations increasingly reflect contending ways of understanding water development. Few would want to return to a time when the process of deciding what dam is built where is less democratic, but in at least this case it has led to a sustained controversy over nearly half a century. Where once construction of Auburn Dam was seen almost universally as a given and a necessity, it became one of Reclamation’s most contentious water projects.

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