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Paul S. Taylor



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CENTRAL VALLEY PROJECT: WATER AND LAND

PAUL S. TAYLOR

University of California

Thus, practically, all values inhere in the water, and an equitable division of the waters can be made only by a wise system of parceling the lands; . . . In general, the lands greatly exceed the capacities of the streams . . . The magnitude of the interest involved must not be overlooked. All the present and future agriculture of more than four-tenths of the area of the United States is dependent upon irrigation, and practically all values for agriculture inhere, not in the lands but in the water. Monopoly of land need not be feared. The question for legislators to solve is to devise some practical means by which water rights may be distributed among individual farmers and water monopolies prevented.

—J. W. Powell, Report on the lands of the arid region of the United States, 1878.

THE Great Central Valley of California resembles an old-fashioned baby's bath-tub with one side, the west, slit to the bottom in the middle for an outlet. Ringed about by the high Sierra on the east, the Tehachapi mountains on the south, the Siskiyou on the north, and the Coast Range on the west, the Valley is an oblong watershed stretching lengthwise through the interior of the state for a distance of nearly 500 miles. Its average width is 125 miles. The floor of the Valley is an alluvial plain about 400 miles long, with an average width of 45 miles. The Sacramento River and its tributaries drain the northern portion of the watershed; the San Joaquin River and its tributaries drain the southern portion. These two streams meet and meander westward through a low agricultural area known as the Delta, then out through the Carquinez straits into San Francisco Bay.

Reclamation has been going on for nearly a hundred years in Central Valley. It has been a long slow process made up of numerous separate and little-coordinated efforts. Irrigation began immediately following the Gold Rush, and ditches built for placer mining soon began to serve the uses of agriculture. But for twenty years irrigated agriculture spread slowly. Then in 1869 completion of the transcontinental railroad gave irrigation in the Central Valley its first great impetus, for it opened eastern markets to western produce. In irrigation as in transportation the golden spike driven at Promontory Point in Utah opened an era.

The next three decades saw steady expansion of irrigation in Central Valley, yet by 1900 it still had reached less than a million acres. The four following decades saw it increase to nearly two and three-quarters million acres in 1939. Then the pace became even faster. About one and three-quarters million acres were brought under during the single decade preceding 1943, nearly three-quarters of a million acres of it during the last

four years. The Second World War brought markets that were assured and unlimited, at least for its duration, and with these came a rate of expansion beyond precedent.

To level and prepare land to receive water is one thing; to develop the supply of water for its irrigation is another. In Central Valley, the very means by which so many areas obtain their water supply is such that the more land prepared for irrigation, the more serious the discrepancy becomes between demand and supply of water.

From the early 1900's irrigators began to sink wells and pump ground water to the surface. By 1940 approximately a million and a half acres received most of their irrigation supply from this source. The danger signs of this kind of irrigation appeared early. Ground water was being used faster than nature was restoring it. Water tables began to fall and have continued to fall, and pumping lifts to rise. Irrigators have had to deepen wells, install more powerful pumps, and use more power to lift water.

This was the water condition in 1935 when the federal government allocated funds to start construction in the Central Valley. Federal intervention began in a way, as a rescue operation.¹ It was none too soon, but even the first unit, or Central Valley Project, was not enough. In many areas water tables are not yet stabilized, while preparation of still more land for crops increases the over-drafts upon underground supplies. Hardly more than half of the lands it will ultimately be possible to irrigate have been prepared for crops.² Yet already in late 1948, dust storms raised from plowed fields had begun to trouble the southern San Joaquin Valley.

Efforts to put Central Valley waters to use for irrigation can be regarded as attempts to solve the problem of where, when, and how to store and to move water. This is the way it looks to an engineer: Roughly two-thirds of the precipitation falls on the northern, or Sacramento Valley watershed, but about two-thirds of the irrigable land lies southward in the San Joaquin Valley. Moving surplus water from the Sacramento Valley to thirsty lands of the San Joaquin, therefore, will provide more irrigation. The problem is how to redistribute water, taking it from where it is unneeded to where it is wanted.

¹ Testimony of Edward Hyatt, state engineer of California, Hearings before House Committee on Flood Control, 74th Cong., 1st Sess. (Washington: Government Printing Office, 1935), pp. 60-72; Governor James Rolph, Jr., "Central Valley Project of State Water Plan," *State Water Plan Association (comp.), Manual for Speakers in Support of Central Valley Project Act, special election*, December 19, 1933 (mimeo. Dec. 1, 1933), sec. 14, p. 1.

² U. S. Bureau of Reclamation, *Comprehensive Plan for Water Resources Development Central Valley Basin California*, Region 2 Project Planning Report No. 24.03, November, 1945, pp. 125-6. Cf. statement by Edward Hyatt, California state engineer, that the State Water Plan "provided for the ultimate irrigation in the Central Valley of 8,000,000 acres of land as compared with 3,500,000 acres now irrigated." (*Proceedings of California Water Conference* called by Earl Warren, State Capitol, Sacramento, California, December 6 and 7, 1945, p. 30. Hereafter cited as *California Water Conference*.)

Besides redistributing water in *space*, another problem is to redistribute water in *time*, to save it from wasting when it is unneeded, so as to put it to use later when wanted. The natural flow of streams into the Valley is strong in the spring, fed by winter rains and melting snowpack. Much of this water is uncontrolled now, and wastes to the sea. A few weeks later it is gone when irrigation needs it most.

The problem is more than how to save water in wet seasons for release in dry ones. It also is how to save water in wet years for release in dry years. The same storage reservoirs, properly constructed and properly operated, can solve both problems.

If Central Valley were fed by a single river, control of water for irrigation would be relatively simple, but there are more than a score of streams, great and small. It is not enough to control the waters of each stream separately. That still would leave local surpluses of water that could be used elsewhere by exporting it, and local deficiencies that could be remedied by importing it. The task therefore is to unite these streams into a single great system, with water storage and water releases coordinated, so as to eliminate waste by delivering all water where and when it is needed.

Engineers gradually have evolved a plan to solve these problems. The main outlines of it have been stated for twenty years or more, and engineers of the Bureau of Reclamation have given it the latest and most complete reformulation.³ The plan is to make the watershed into an efficient unit by tying it together by means of a series of canals that will cut across virtually every stream. This will give maximum control over water, with power to move it season by season and year by year, from wherever it is surplus to wherever it is deficient. The plan will require building thirty-eight major reservoirs, hundreds of miles of main canals, and thousands of miles of laterals and drains. Half a generation or more will be needed to complete construction.

So far the Central Valley Project has been described as a plan to irrigate land, but irrigation is only one part of what can be done by controlling water. In the years since Major Powell wrote his famous report⁴ on the arid region, men have learned how to generate electric power from falling water. A first result of knowing how to do this, is to be able to lift water and thereby move it to places previously impossible to irrigate when dependence was entirely on the flow of water down hill. Once gravity itself is made available to press back the limitations imposed by gravity, then hydroelectric power plants become tools for redistributing

³ *Comprehensive Plan*, loc. cit.

⁴ J. W. Powell, *Report on the lands of the arid region of the United States, with a more detailed account of the lands of Utah*. With maps. (Second edition; Washington: Government Printing Office, 1879), pp. xv, 185.

water as indispensable as canals. Without power to elevate Sacramento River water into canals high enough to flow south by gravity into the San Joaquin Valley, the Central Valley Project would be doomed at the outset. It never could move enough water from one valley to the other to achieve its main irrigation objective.

Important as power is to the extension of irrigation, that is only the beginning of its use. The power plants at storage reservoirs and upstream in Central Valley can develop far more energy than can be used advantageously to promote irrigation. This surplus can be disposed of to serve industries, businesses, and homes. In this way power takes a place beside irrigation as a major purpose of western water development.

When great reservoirs are constructed, it is possible to serve numerous purposes besides those which may have prompted construction initially. In addition to irrigating land and generating power, the storage of water in Central Valley will make it possible to moderate or prevent floods, to improve navigation on portions of some rivers, and to check injurious incursions of salt water that back up from the Bay into the Delta. Lesser incidental benefits will also result such as creation of recreation areas at the reservoirs.

The requirements made upon the project for serving all these purposes are not entirely consistent, each with those of the others. Control of floods requires empty reservoirs when heavy floods are expected. Irrigation requires that reservoirs be filled with flood waters to be held for release months later. Power generation requires generally steady releases of water, with special attention to daily peaks at early evening, to seasonal needs of the project to lift irrigation water into canals, and perhaps to fit fluctuating special needs of the power market. At times when all purposes cannot be served, the priorities determining what releases of water shall be made probably will follow state law.⁵

The technical name given to a project of this type is "multiple-purpose," and within the scale of priorities of purpose established by statute, the aim is maximum total benefit. To achieve this aim requires complete integration of all the numerous features of this complex and far-flung project. In Central Valley this means that a master water dispatcher must know the future needs of crops for water for days and even weeks in advance, so he can release proper amounts of water that will arrive on time from one or more reservoirs situated perhaps hundreds of miles away. He must anticipate the melting of snowpacks and the run-off of

⁵ The Federal Act of Aug. 26, 1937 (50 Stat. 850) provides that "reservoirs shall be used, first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses; and, third, for power." State law provides "that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation." (*Water Code*, sec. 106.5). See John R. Bennett, "Some uncertainties in the law of water rights," 21 *Southern California Law Review* 344 (July, 1948).

flash floods to keep them harmless and prevent waste of their waters. He must study irregularities of precipitation, to know in which ones among the two-score reservoirs he should retain water longest, and from which he ought to release it first. Only by such fine operation can a complex project serving many purposes produce the greatest possible benefit year in and year out. Only if a single agency has control over every part of the project is it possible to achieve fine operation. Two agencies, or three, cannot do it, no matter how competent each may be individually.⁶

At the present time the United States Bureau of Reclamation has prepared the only comprehensive program under a legal authorization which provides for developing the full uses of the waters of the basin.⁷ The plan of the State Engineer made in 1930 is outdated,⁸ and the current plan of the Army Engineers for flood control is not prepared under a legal authorization to develop fullest possible use of the waters of the Valley.⁹ If and when this comprehensive basin-wide plan of the Bureau is carried to completion, it will make of Central Valley the greatest and most complex reclamation project on the continent. In addition to the thirty-eight reservoirs, the canals and the laterals, it calls for construction of twenty-eight hydroelectric power plants, supplementary fuel-electric plants, and power transmission lines to carry surplus power. The estimated cost of this development at 1945 prices was nearly two billion dollars, exceeding the federal investment in the Tennessee Valley and approximating the cost of developing the first atomic bomb.

The immediate results to be expected from completion of the comprehensive plan are impressive. The project will supplement inadequate ground waters for nearly two million acres of presently-irrigated fertile California land, protect another 400,000 acres from occasional damaging shortages in dry years, and protect about 360,000 acres in the Delta from destructive intrusion of saline waters from the Bay. It will bring water to over 3,000,000 acres not irrigated now. In addition, comprehensive development can provide about 360,000 acre-feet of water annually for municipal and industrial uses, for game refuges, etc. It can generate annually from falling water more than 8 billion kilowatt hours of electricity.

⁶ See, for instance, Morris Llewellyn Cooke, "Rivers and Prosperity," *New Republic*, Vol. III, No. 25 (December 18, 1944), pp. 825-7.

⁷ *Reclamation Project Act of 1939*, Act of August 4, 1939. Ch. 418, 53 Stat. 1187.

⁸ State of California Department of Public Works, *Publications of the Division of Water Resources*, Edward Hyatt, state engineer, reports on state water plan prepared pursuant to Ch. 832, Stat. 1929, Bulletin No. 25, *Report to Legislature of 1931 on State Water Plan, 1930* (California: State Printing Office: Sacramento, 1930), p. 204. Bulletins in this series cited hereafter as *State Water Plan*.

⁹ Flood Control Act of 1944, Pub. L. 534, 78th Cong., 2d Sess. The Army Engineers provide for fewer reservoirs, and omit construction of power plants, canals, and transmission lines to distribute water and power.

This comprehensive engineering plan points a way to develop Central Valley water fully, in a carefully integrated system. It has not yet been presented to Congress for its authorization. Nevertheless its existence as tangible embodiment of an idea how full development can be secured is itself a landmark in the history of the Valley.

Making plans to develop waters in Central Valley is not new. It began practically a hundred years ago when California became a state in the Union. Its characteristics have been these—that the plans generally were for partial, or piecemeal, rather than for comprehensive development; that they were made by both private interests and public agencies without very clear definition of their interrelationships; that the roles and responsibilities of public agencies within local, state, and federal governments have not been harmonized, stabilized, or very clearly defined; that planning irrigation development has involved public decisions on policy not to be left to engineers or other technicians.

At most times over the past century, someone has been on hand to point to the necessity for unity and public enterprise. At some times, men have recognized the necessity for clear decisions on public policy as to who shall pay for the undertaking and who shall receive its benefits. At other times they have not, or have disputed the terms. Conflicts have been sharp, and they continue.¹⁰

In the beginning, integration and unity did not seem very important to those who carried responsibility for development. Projects were simple and relatively inexpensive, and private interests worked out solutions of the questions: who is to pay? and who is to benefit? that at least had the appearance of being satisfactory. Men did not see themselves up against complex and costly last efforts to wring the ultimate measure of benefit from the watershed. Yet even in the beginning they sought public help. The very first session of the legislature after admission of California to the Union in 1850 enacted a law calling for preparation of a plan to furnish water for irrigation.¹¹ In 1866 the legislature appropriated funds to survey a canal location in the Sacramento Valley.¹² In 1874, after study, a federal commission reported that “the Great Valley of California is admirably adapted to irrigation,” and outlined a system of canals. It emphasized that “the works should be properly planned and located in

¹⁰ For a denial of unity, see testimony of Raymond Matthew, *Hearings before Subcommittee of Senate Committee on Appropriations*, 79th Cong. 1st Sess. (Washington: Government Printing Office, 1946), pp. 1050-51. For resistance to public enterprise, see Arthur D. Angell, “Political and Administrative Aspects of the Central Valley Project of California,” [Doctoral dissertation at University of California at Los Angeles, 1944 (typescript)]; also Mary Montgomery and Marion Clawson, *History of Legislation and Policy Formation of the Central Valley Project* (United States Department of Agriculture, Bureau of Agricultural Economics, Berkeley, California, March, 1946), pp. 179 ff. Hereafter cited as *History of Legislation*. For conflict over public policy on costs and benefits see present article below.

¹¹ *History of Legislation*, p. 9.

¹² *Ibid.*

the beginning, so that whatever is done to meet the present requirements of a sparse population may form a part of those that will be necessary to meet the demands of a population of millions by simply enlarging them," that "the works required, even at the present time, will be extremely costly," and that "unity of action is absolutely necessary to their proper execution."¹³

In 1878 the first State Engineer of California launched investigations with a legislative appropriation authorizing him to prepare "a system of irrigation, promote rapid drainage, and improve navigation on the Sacramento and San Joaquin Rivers."¹⁴ As a far-sighted public official he saw the desirability of having a comprehensive plan to eliminate haphazard development. His purpose was well-conceived, but his funds were limited and in 1889 his office was abolished.

In the meantime private interests not only were making plans of their own but were active in development as well, especially after 1869. Here and there, they diverted water by canals from the streams of the Sierra wherever it could be done cheaply. Individuals, partnerships, and corporations all took a hand. What plans there were, were made each for a separate and immediate enterprise.

Late in the 1880's at the insistence of irrigators, the state of California stepped in again to assist water development. In 1886 the state supreme court in *Lux v. Haggin* had approved for California the common law doctrine of riparian water rights which had originated in humid England.¹⁵ Many people believed the doctrine of riparian rights was inappropriate to arid and semi-arid country, and an obstacle to irrigation, especially of lands removed at a distance from a river bank and without riparian rights. Therefore they demanded public assistance from the state and were given it by passage of the Wright Act of 1887.¹⁶

The Wright Act authorized the voters and landowners of an area to form irrigation districts. Districts formed of these lands that could be watered from a common source were endowed with public powers needed to bring them unappropriated water, and to levy assessments or charges to pay the costs. In this way the state increased the capacity of groups to finance their own irrigation by clothing them with public authority to assure common action.

Around the turn of the century a number of water investigations in Central Valley had been made, mainly by the federal Department of

¹³ *Report of the Board of Commissioners on the Irrigation of the San Joaquin, Tulare, and Sacramento Valleys of the State of California*, 43 Cong., 1st Sess., House Exec. Doc. No. 290 (Washington: Government Printing Office, 1874), p. 8.

¹⁴ *History of Legislation*, p. 10.

¹⁵ 69 Cal. 255.

¹⁶ *California Statutes*, 1887, p. 29.

Agriculture.¹⁷ Beginnings also were made for an extensive and continuous series of stream-gauging records. These have yielded continuous data on stream flow into the Central Valley for more than forty years, and now provide the foundations upon which the computations and decisions necessary to construct dependable engineering plans rest.

About the time of World War I, the limitations of both private enterprise and public districts were becoming apparent to landholders within the Valley. With sources of cheap water already developed, the costs of developing additional supplies were higher. Therefore not much more development was in sight that looked sufficiently attractive to private landowning interests to persuade them to undertake it, either through corporations or public districts.

As described earlier, this difficulty did not stop landholders from bringing more land under irrigation; on the contrary they were levelling land and putting down deep wells in ever greater numbers, as they continue to do right to the present. But the sure signs of overdrafts upon nature's supply were making it plain that although landowners could still sink wells and level land, they could no longer pay the costs of developing new and permanent sources of water.

This inability of landowners to finance further development slowed piecemeal planning by private agencies or irrigation districts to a standstill. Public financial support had become a necessity, and so, therefore, had public planning. With responsibility for full development in public hands, comprehensive, integrated planning was becoming practicable for the first time.

Here is how it happened. Shortly after World War I, the Irrigation Association of California published an important personal report on Central Valley by Colonel Robert Bradford Marshall, chief geographer of the United States Geological Survey.¹⁸ It consisted of a comprehensive plan for a chain of great reservoirs, and for transference of Sacramento River water to the San Joaquin Valley by means of a system of long canals. This report, anticipating essential portions of the plan ultimately undertaken, brought the long-simmering state and federal interest to a boil, and helped to precipitate serious engineering studies by the State of California.¹⁹

A series of dry years became a further factor in the Central Valley situation, building up pressure from its victims to have something important done. Acute failure of natural replenishment was being added

¹⁷ *Report of Irrigation Investigations in California, under the direction of Elwood Mead*, Bull. No. 100 (Washington: Government Printing Office, 1901). Same, *Irrigation Resources of California and Their Utilization*, Bull. No. 254 (1912).

¹⁸ Robert Bradford Marshall, *Irrigation of Twelve Million Acres in the Valley of California*, distributed by California State Irrigation Association (Sacramento, California, November, 1920), pp. 1-12.

¹⁹ *History of Legislation*, p. 21.

to the growing overdrafts upon ground waters created by continuous expansion of the area to be irrigated. At the high cost margin, some lands were going out of cultivation altogether. In the Delta region at the same time, salt water from the Bay was backing up into the slackening flow of the river. River water was becoming too saline for safe use by irrigators or by industrial plants. Only new supplies of water could meet these growing needs. In 1921, the California legislature authorized the first of a number of water investigations under the re-established office of State Engineer.²⁰ Ten years and over a million dollars spent on these investigations produced the notable series of engineering reports that formulated the "State Water Plan."²¹

The State Water Plan was an engineer's solution to the physical problems of water redistribution in Central Valley. By adopting the principle that a single watershed is a unit, it was able to propose transference of surplus Sacramento River water into the deficient basin of the San Joaquin.

The State Engineer gave explicit as well as implicit recognition to the necessity for unity. The report on the San Joaquin River Basin prepared under his direction stated that

The plans for water supply development in the Sacramento and San Joaquin River basins must be combined under a unified project for the entire Great Central Valley, with all units of the project operated coordinately to effect the greatest conservation, regulation and utilization of the available water supplies to meet the needs for all purposes in both basins.²²

This principle is so fundamental to full development of any watershed that it is surprising how hard it is to get it accepted in practice. Central Valley's development would be in better shape today if it had been adhered to consistently.

The State Water Plan did not overlook the economic problems of who would pay the costs. The Report to the 1931 legislature declared:

The works required for the solution of the State's water problem are of such great magnitude and of such a far reaching scope that proper solution calls for a coordination and unification of the interests of not only the entire state, but the federal government as well, in the planning and execution of a complete program of development.

Many obstacles—financial, legal and political—lie in the path of a program of complete relief and development. Although the past development of the state's water resources for irrigation, municipal, hydroelectric power and other uses has been successfully carried out by private and public agencies under existing laws, the greater magnitude of the problems arising in the planning and execution of works for complete coordination and utilization of the state's water resources calls for an entity of wider scope and greater powers than has heretofore been necessary. The magnitude and cost of the works involved are so great that it is questionable whether local interests would have the financial capacity to carry out the development required.²³

²⁰ *Statutes of 1921*, Chap. 889.

²¹ *State Water Plan* lists by title the full series of reports, Bull. 25-36.

²² *State Water Plan*, Bull. 29, p. 65. See also footnote 91.

²³ *Ibid.*, p. 23.

Turning to examine precedents for financial support by the federal government, the report continued:

The precedent established by the . . . activities and participation of the federal government in the state's water problem together with established policies relating to navigation, flood control and reclamation, would appear to offer a logical basis for extension of federal participation in construction of works required for conservation and utilization of the state's water resources.²⁴

The State Engineer omitted at least one major problem in preparing his great report. While inquiring who would pay the costs, he did not ask who is to receive the benefits. That question is as fundamental as any other. When it is solved, the problem of how unity is to be achieved can be answered also, for it is efforts to reap special benefits that are most destructive of unity.²⁵

A full generation before the State Water Plan furnished an answer to the engineering problems of developing Central Valley waters, and raised the question, who will pay? the national Congress already had examined the two questions, who will pay? and who will benefit? After thorough deliberation it gave clear answers to each.

This action by Congress grew out of a movement to enlist aid of the federal government for western reclamation which had begun formally in 1891. In that year the National Irrigation Congress held its first annual meeting in Salt Lake City.²⁶ It was founded upon the recognition that landholders could not afford the full costs of water development, and carried the hope that the federal government would pay what private landholders could not.

The sessions of the National Irrigation Congress—held long before the legislature of California authorized the State Engineer to make his investigations of what to do—were marked by a feeling that the job of developing the semi-arid West was too big for the method that had worked east of the 20-inch rainfall line. The ox and the breaking plow, driven by a family each on its own acres, would not do. In 1849 on the floor of the Senate, Senator Jefferson Davis of Mississippi had said, "Till the canals are cut, ditches and dams made, no person can reclaim the soil from Nature; an individual pioneer cannot settle upon it with his family, and support them by the product of his own exertion, as in the old possessions of the United States, where rain and dew unite with a prolific soil to reward freely and readily the toil of man. It is only by associated labor that such a country can be reduced to cultivation."²⁷ But the exponents of western reclamation in the 1890's drew no such

²⁴ *Ibid.*, p. 29.

²⁵ See below, and especially footnote 91.

²⁶ *Official Report of the Irrigation Congress*, held in the Exposition Building, City of Salt Lake, Utah, September 15, 16, and 17, 1891. (In Crerar Library, Chicago.)

²⁷ *Cong. Globe*, 31st Cong., 1st Sess. (1849-50), Appendix Vol. 1, p. 154.

conclusion as did Senator Davis, who had thought that irrigation in California logically required "the domestic servitude of African slavery." While they agreed that families rushing to quarter sections confronted defeat, they believed also that private capital controlling "associated labor" was not big enough to make the more costly developments of water, or if it was, that it could not be trusted to do the job in a way compatible with the public interest. To allow private enterprise to hold land enough to recoup itself for the costs laid out for development, they felt, might answer satisfactorily the question, who will pay? But they objected that to do this inevitably would make "monopoly" and "speculation" the answers in practice to the question, who will receive the benefits? A House Committee report on the reclamation bill of 1902 records their rejection of this solution. It says:

If we were willing to abandon our time-honored policy of inviting and encouraging small individual landholdings, and were prepared to turn over all of the public lands under a large irrigation system to the control of a single individual or a corporation, we could undoubtedly secure the construction of extensive works which cannot be profitably constructed by private enterprise under present conditions, but no one contemplates paying so stupendous a price as this for irrigation development.²⁸

In other words, they believed that only public enterprise was able to pay the costs of developing western waters fully, and at the same time to make sure that the families of actual settlers would receive the benefits.

The Irrigation Congress was a genuine citizens' movement, animated less by special interests than by those of the whole community. Membership was inclusive, not exclusive. It included Mormon enthusiasts for creation of more communities of family farmers; railroad land agents and businessmen seeking more western population to create more traffic and business; politicians seeking a wagon to hitch their stars to, perhaps even a vehicle to ride to statesmanship. Its debates revealed sharp divisions of opinion and at times of interest, but the results of deliberations were unifying, not divisive. The movement rested upon local participation and developed close teamwork among many men. It was spontaneous and proved itself an effective agency of democratic planning. When Congress passed the National Reclamation Act in 1902, these citizens of the Irrigation Congress had achieved their main goal during ten years' work.²⁹

In laying the plans for public development of the West the national Congress in Washington wrestled with two fundamental questions, who will pay the costs? and who will receive the benefits? It examined engineering plans sufficiently to satisfy itself that development was possible,

²⁸ Committee on arid lands, *Report on Reclamation of Arid Lands*, H. R. Rep. No. 1468, ser. 4404, 57th Cong., 1st Sess. (April 7, 1902), p. 3.

²⁹ See *Proceedings of the National Irrigation Congress, 1891-1905*; William E. Smythe, *Conquest of Arid America* (New York: Macmillan, 1905); George Wharton James, *Reclaiming the Arid West: The Story of the United States Reclamation Service* (New York, 1917).

established a Reclamation Service with provision for capable engineers, and made it responsible for details. Then it devoted itself to answering the primary economic questions. The answers which it wrote into law in 1902 became the economic plan for all federal western reclamation. In 1937 it became the economic plan for Central Valley Project by act of Congress.³⁰

Congress concluded that private enterprise, unaided, could not develop the West fully; that it ought not be given power sufficient to enable it to do it; that the national interest dictated that the West ought to be developed; therefore that use of public funds for the purpose was proper. In answer to the question, who will pay the costs? Congress produced a practical formula: the public treasury should advance the capital costs of reclamation, using revenues from the sale of public lands; private beneficiaries receiving irrigated farms should repay these capital costs, but spread over forty years and without interest. The value of waiving interest charges to private beneficiaries was equivalent to more than half the cost of the project.³¹

The other primary question, the one omitted from consideration in the State Water Plan, was, who will receive the benefits?

Since heavy public expenditures were to be made to bring water, these had to be justified by the purpose for which the water was to be used. It was not enough that a portion of the nation would be developed. Congress found its justification in the principle of the historic American land policy. The House Committee on the reclamation bill said, "It has been our time-honored policy to provide for the settlement of our public lands in small tracts to actual home builders."³² So Congress embodied the spirit of the nation's land policy in the reclamation law, by prescribing that the benefits were to be distributed widely, and not to be allowed to go to monopolists.

It was easy to carry out this decision when public expenditures were to be made to water public lands. The lands simply would be sold in tracts of a size suitable for family farms, and water rights would go with them. But to justify spending public money to water private lands for the benefit of private landholders was more difficult. It caused thoughtful concern.

³⁰ Act of August 20, 1937, 50 Stat. 850.

³¹ Computed by assuming 3 per cent interest and 40 years for repayment, the "percentage subsidy" equals 57 per cent. If repayment were extended to 50 years the percentage would be 62. U. S. Bureau of Reclamation, "Acreage Limitation in the Central Valley, A Report on Problem 19," Central Valley Project Studies (Berkeley, California, September 25, 1944) (mimeo.), p. 29, Table 4, Percentage subsidy in federal reclamation program for varying repayment periods and interest rates.

³² Committee on arid lands, *Report on Reclamation of Arid Lands*, H. R. Rep. No. 794, ser. 4402, 57th Cong., 1st Sess. (March 8, 1902), p. 3.

One of the facts which Congress and the original exponents of reclamation had to face was the widespread existence of monopoly of arid lands. Nowhere was this more conspicuous than in the Central Valley. The historian, Paul Wallace Gates, has described the condition. He wrote:

Following 1848 there came a rapid influx of settlers which, together with the large profits realized from the grazing industry in the interior valleys, created a land boom and led to extensive purchases. With great areas of land in the San Joaquin and Sacramento Valleys open to cash purchase the opportunity for speculative profits was unparalleled elsewhere; nor was the opportunity neglected. From 1862 to 1880 land sales and warrant and scrip entries in California were on an enormous scale, surpassing all other states for the period and in some years comprising well over half of the sales for the entire country. In the single year, ending June 30, 1869, 1,726,794 acres were sold in this state by the Federal government and for the entire period from 1862 to 1880 well over 7,000,000 acres were entered with cash, warrants, or scrip. . . . The total amount purchased from the Federal government by Chapman, Miller and Lux, Friedlander, E. H. Miller, and Mitchell was one and a quarter million acres. Forty-three other large purchasers acquired 905,000 acres of land in the sixties in California. Buying in advance of settlement, those men were virtually thwarting the Homestead Law in California, where, because of the enormous monopolization above outlined, homesteaders later were able to find little good land.³³

In recognition of these and similar well-known conditions in other parts of the West, the House Committee devised the "160-acre water limitation," or "excess-land provision," in order to distribute the limited supply of water fairly and widely. The Committee offered the provision to Congress as the special justification for extending the benefits of public reclamation to private landowners. The chairman, Congressman Mondell of Wyoming, told the House:

Under nearly every project undertaken by the Government there will undoubtedly be some lands in private ownership; and it would be manifestly unjust and inequitable not to provide water for these lands, providing their owners are willing to comply with the conditions of the Act; and in order that no such lands may be held in large quantities or by non-resident owners, it is provided that *no water right for more than 160 acres shall be sold to any landowner*, who must also be a resident or occupant of his land. This provision was drawn with a view to breaking up any large land holdings which might exist in the vicinity of government works and to insure occupancy by the owner of the land reclaimed.³⁴

Three years later, during an attempt by large landholding interests of Central Valley and elsewhere to start a movement in the National Irrigation Congress for repeal of the 160-acre provision, Judge Raker of California gave authoritative testimony on the same point. He said:

The committee of seventeen that originally planned and arranged the adoption of the National Irrigation Law *secured its adoption and presentation to Congress solely and entirely upon the question that the great land monopolies in the United States would be prohibited from getting the benefit of it.*³⁵

³³ Paul Wallace Gates, "Homestead law in an incongruous land system," *American Historical Review*, July, 1936, pp. 668-9.

³⁴ Cong. Rec., 57th Cong., 1st Sess. (June 12, 1902), p. 6678. Italics supplied by author.

³⁵ *Proceedings of Thirteenth National Irrigation Congress held at Portland, Oregon (1905)*, p. 61. Italics supplied by author.

Since the 160-acre, or excess-land, provision is the special justification for spending public money for reclamation of private lands, proposals to remove or escape the provision, like some to be described later, are proposals to spend the public funds while removing the justification for doing so.

In facing the question, who will receive the benefits? and framing the 160-acre water limitation as an answer, the Congress of 1902 was deliberating over something far greater than financial equities between government and some of its citizens. It was concerned with the relations between man and man, with the development of a sense of community, with the forms and institutions of American society. Senator Hansbrough of North Dakota, sponsor of the reclamation bill, said:

It is argued by some that as wealth grows larger in a few hands the opportunities of the laboring classes to secure employment are multiplied. Doubtless this contention is based upon sound reasoning, but looking a little beyond immediate benefits, it appears that the tendency under such a condition is to dwarf self-reliance in the masses and to make the mere service of opulent employers by the great army of breadwinners the fulfillment of all human ambition. I think it is the duty of the legislator to pursue a policy under which the greatest possible number of people may be provided with the means of independent employment, by which the aspirations of the individual may be encouraged and developed. To this end I give my support to this bill. . . .³⁶

Congressman Martin of South Dakota said:

The policy of the Government is to build up communities of many settlers with small holdings, and not to encourage the prosecution of agriculture by large corporations.³⁷

Congressman Newlands of Nevada, co-sponsor of the bill, said:

We have not felt in this country the evils of land monopoly. Lord Macauley said we never would experience the test of our institutions until our public domain was exhausted and an increased population engaged in a contest for the ownership of land. That will be the test of the future, and the very purpose of this bill is to guard against land monopoly and to hold this land in small tracts for the people of the entire country, to give to each man only the amount of land that will be necessary for the support of a family. . . .³⁸

The 57th Congress was impressed by these considerations, passed the reclamation bill, and sent it to President Theodore Roosevelt, who signed it.

Between 1902 and the 1930's, the great landholding interests of the Central Valley made no move to take advantage of the National Reclamation Act. Their opposition to the 160-acre clause may have deterred them. A small project at Orland³⁹ was constructed in compliance with the excess-lands provisions and another was undertaken at Klamath in northern California and southern Oregon, but no more. In the middle

³⁶ Cong. Rec., 57th Cong., 1st Sess. (1902), p. 1386.

³⁷ *Ibid.*, p. 6758.

³⁸ *Ibid.*, p. 6734.

³⁹ In the Sacramento Valley.

1930's, when water shortage and unemployment were combined, it was different. Then the voters of California took a hand. They were told when they went to the polls in special referendum on a Central Valley water and power project, that there would be cooperation with the Federal Government in constructing and financing the project.⁴⁰ They gave their approval.⁴¹

After the election the difficulties in state-financing and the advantages of federal-financing became even clearer. So California Congressmen, the State Engineer, and others gave their approval to proposals in Washington that the federal government should undertake the first great unit of development under reclamation law, which includes the 160-acre provision. In 1936 both houses of the state legislature, in a memorial citing the reclamation law, requested Congress to give its approval to the project and to make appropriations.⁴²

Nevertheless, after first appropriations were made and construction was started, holders of excess-lands became uneasy over the prospect that the 160-acre limitation on publicly-financed water might be enforced. Directors of the Madera Irrigation District recorded their objections in resolutions;⁴³ and more recently witnesses have testified that when they raised the point with engineers of the Bureau, they received assurances that the limitation would be removed before completion of the project.⁴⁴ How the assurances of officials could be regarded as binding on Congress is difficult to understand, but the implication seems to be that Congress ought to so regard them.

The reasons for wishing to escape the acreage limitation under reclamation law—not the appropriations—are not difficult to understand. If operations are now conducted with insufficient water on a scale above 160 acres, the desire to continue them with sufficient water on the same scale is natural. Besides, the average increment in value to lands not previously watered that can be expected from construction of the project

⁴⁰ "California secretary of state and legislative counsel (comp.), referendum measure to be submitted to the electors of the state of California at special election to be held Tuesday, December 19, 1933 together with arguments respecting the same" (Sacramento: State Printing Office, 1933), p. 3. See also *History of Legislation*, pp. 51 ff, and Governor James Rolph, Jr., *op. cit.*

⁴¹ The vote in Los Angeles was about 2 to 1 against the measure; in San Francisco nearly 2 to 1 in favor; in Sacramento Valley 3 to 1 in favor; in San Joaquin Valley 5 to 1 in favor; and in the state 459,712 to 426,109 in favor. *History of Legislation*, p. 61.

⁴² *Cong. Rec.*, 74th Cong., 2d Sess. (1936), p. 8413.

⁴³ *Hearings before a Subcommittee of the Senate Committee on Irrigation and Reclamation on S. Res. 295*, 78th Cong., 2d Sess. (1944), pp. 320-1.

⁴⁴ Testimony of Russell Giffin, *Hearings before Subcommittee of the U. S. Senate Military Affairs Committee on Central Valley Water Project*, held at room 276, U. S. courthouse and postoffice building, San Francisco, California, Friday, April 7, 1944 (mimeo. by U. S. Bureau of Reclamation, Sacramento), pp. 93-95. Testimony of Roland Curran, *Hearings before Senate Subcommittee on Commerce*, 78th Cong., 2d Sess., on H. R. 3961 (1944), pp. 665-6; testimony of Roland Curran, *Hearings before Subcommittee of Senate Committee on Public Lands*, 80th Cong., 1st Sess., on S. 912 (1947), p. 1310.

is estimated conservatively at above \$200 an acre.⁴⁵ The incremental value of supplementing a water supply, now inadequate, may often be substantial, although less on the average than the increment from a full supply.

The extent of the excess-landowning interest in having acreage limitation removed is not known accurately. One study by the Bureau of Agricultural Economics⁴⁶ found that about 4 per cent of the landowners of valley floor lands in three San Joaquin Valley counties held 53 per cent of all the irrigable land. Undoubtedly the interests of owners of excess lands are substantial and are concentrated largely in the San Joaquin Valley, which stands to gain most from the full project.

The dispute over the question, who will receive the benefits? broke into the open in 1944. Alarmed by public statements implying or saying flatly that the law would be enforced—statements made by President Roosevelt,⁴⁷ Secretary of Interior Ickes,⁴⁸ and Bureau of Reclamation officials⁴⁹—representatives of large landholders moved quickly. Without public hearings, Congressman Alfred J. Elliott (D., Calif.) brought to the floor of the House a “committee amendment” to the rivers and harbors bill exempting Central Valley from acreage limitation.⁵⁰ The element of surprise made the tactic effective. Within a few minutes of debate a scattering of objections was brushed aside, a compromise was rejected by supporters of the exemption, and the amendment was passed.⁵¹

In the Senate, however, public hearings before the Senate Commerce Committee could not be avoided, and these gave supporters of reclamation law their opportunity. Despite that Senator Hiram Johnson (R., Calif.) let it be known he favored exemption, and that Senator Sheridan Downey (D., Calif.) worked to the same end, the entire rivers and harbors bill failed of passage because a number of senators, among them Senators Robert M. LaFollette, Jr. (Prog., Wis.), Carl Hatch and Dennis Chavez (D., N. Mex.), announced their strong opposition to the Elliott amendment.⁵²

In the 80th Congress another effort was made to break down acreage limitation. This time exemptions were proposed for three projects, one each in the states of California, Colorado, and Texas. All six Senators

⁴⁵ Testimony of Paul H. Johnstone, *Hearings on S. 912* (1947), pp. 852-55, 861.

⁴⁶ Edwin E. Wilson and Marion Clawson, “Agricultural Land Ownership and Operation in the Southern San Joaquin Valley,” (U. S. Department of Agriculture, Berkeley, California, Bureau of Agricultural Economics, June, 1945 [mimeo.]), p. 28, table 5.

⁴⁷ National Reclamation Association, *Proceedings Irrigation War Food Conference and 12th Annual Meeting, Denver, Colorado* (October 27-28-29, 1943), pp. 202-3.

⁴⁸ *Ibid.*, pp. 201-2.

⁴⁹ *Ibid.*, p. 67.

⁵⁰ Cong. Rec., 78th Cong., 2d Sess. (1944), p. 2921.

⁵¹ *Ibid.*, pp. 2922-4.

⁵² Cong. Rec., 78th Cong., 2d Sess. (1946), pp. 9495-9500, 9746-47.

from the three states sponsored the bill, including Senator Downey, and the newly-elected Senator William F. Knowland (R., Calif.). More than 1300 pages of printed testimony were taken on the bill, but its supporters did not muster strength enough to have it reported out of committee.

Reasons for the inability to remove this fundamental principle of the economic plan for western reclamation appear when the alignment of groups is examined, for and against. The California Farm Bureau Federation,⁵³ California State Chamber of Commerce,⁵⁴ and California Irrigation Districts Association⁵⁵ have supported removal of acreage limitation. From within each of these groups, however, some members have made public statements accepting the limitation.⁵⁶ Groups insisting on maintenance of the law have included the California Grange,⁵⁷ AFL,⁵⁸ CIO,⁵⁹ Veterans of Foreign Wars,⁶⁰ American Veterans Committee,⁶¹ Catholic Rural Life Conference,⁶² and Congregational Christian,⁶³ Presbyterian,⁶⁴ and Jewish organizations.⁶⁵ During public hearings the national organizations of some of these groups gave active support to their respective state organizations. The National Farmers Union⁶⁶ and national convention of the American Legion both recorded their support of acreage limitation.⁶⁷

The question whether the original economic plan for western reclamation is to be sustained or broken down appears to be of non-partisan character. Members of both major parties have been active on both sides. However, the issue is becoming regarded as more clearly partisan within California. Senator Knowland (R.) declared himself against

⁵³ Hearings on S. 912 (1947), pp. 157-8. The position of the Farm Bureau Federation, like that of other organizations mentioned immediately following, was presented publicly upon numerous occasions. In these footnotes one or two occasions only are cited as examples.

⁵⁴ California water conference, address by James Mussatti.

⁵⁵ Hearings on S. 912 (1947), p. 158.

⁵⁶ Testimony of Frank T. Swett, *Hearings before Subcommittee of Senate Committee on Commerce on H. R. 3961*, 78th Cong., 2d Sess. (1946), p. 618; testimony of C. A. Talbott, *Hearings before a Subcommittee of the Senate Committee on Irrigation and Reclamation on S. Res. 295*, 78th Cong., 2d Sess. (1946), p. 286. Address by Warren Fowler, Sacramento Valley Council State Chamber of Commerce, Senator Hotel, Sacramento, 12:00 noon, February 28, 1947 (mimeo), 2 p. Testimony of R. W. Pixley, chairman, board of directors, Shafter-Wasco Irrigation District, on S. Res. 295, p. 461.

⁵⁷ Hearings on S. 912 (1947), pp. 265, 355.

⁵⁸ *Ibid.*, pp. 1184-1188.

⁵⁹ Hearings on H. R. 3961 (1944), p. 683.

⁶⁰ Hearings on S. 912 (1947), p. 143.

⁶¹ *Ibid.*, p. 483.

⁶² Testimony of Father Charles Phillips, *Hearing before Subcommittee of Senate Military Affairs Committee*, *op. cit.*, p. 24.

⁶³ *Hearings before the House Committee on Public Lands*, 80th Cong., 1st Sess. pursuant to H. Res. 93, Committee Hearing No. 27 (1947), p. 13.

⁶⁴ *Ibid.*, p. 17.

⁶⁵ Hearings on S. 912 (1947), p. 529.

⁶⁶ *Ibid.*, pp. 615, 623.

⁶⁷ *Ibid.*, p. 495.

acreage limitation during his 1946 campaign and was elected over a Democratic candidate who favored it.⁶⁸ In 1948 the Republican state platform was silent on acreage limitation but the Democratic platform gave it support with emphasis.⁶⁹ Congressman Elliott (D.), who had come close to defeat in 1946, did not stand for re-election. His place was taken by a Republican who generally is believed to share his views on this issue.⁷⁰ In the adjoining district Congressman Gearhart (R.), who opposed acreage limitation, was defeated by Cecil F. White (D.), who favored it. In these ways the lines are being drawn. While Senator Downey (D.) remains opposed to acreage limitation, the weight of the Democratic Party in political contests for office all the way from assemblyman up, clearly is moving to its active support.⁷¹

It is proper that the answer to this question, who will receive the benefits? should be made finally by the voters. It is a fundamental of the economic plan. It is not primarily a technical question to be answered by technicians, but an issue of public policy.

The tactics of the effort to break down the original plan for reclamation are varied. While the Elliott amendment was before Congress in May, 1944, the periodical, *Business Week*, enumerated four of them:

If the big landowners in the valley lose out in this particular fight [for direct exemption], they have several other proposals to accomplish their end. One of them is a House bill which would authorize the Army to add irrigation and power development to its present navigation and flood-control powers. The legislation also would call for construction of a series of irrigation and power projects throughout the country, especially in Central Valley. This would circumvent the 160-acre rule, since the Army is not bound by that restriction.

Another proposal, said to have originated among the big landowners of Fresno County, is for the State of California to take over the Central Valley project, paying the entire bill. This, too, would sidestep the 160-acre limitation. Still other landowners are sinking wells around their holdings in order to be prepared to pump irrigation water from the raised water table, thus getting a free ride on the Central Valley project.⁷²

Until now every effort to secure a direct exemption has failed. The results of the 1948 elections in both the state and nation make further attempts of this kind unlikely for the present.

⁶⁸ *Ibid.*, p. 408.

⁶⁹ The California Democratic party platform adopted at Sacramento August 7, 1948 said: "We endorse and support the principles incorporated in the Federal Reclamation Law of 1902, specifically, acreage limitation and protection against land speculation and monopoly."

⁷⁰ For example, Representative Werdel voted in February, 1949 against repeal of a limitation imposed on appropriations to the Bureau of Reclamation by the 80th Congress at the insistence of Representative Elliott. The limitation, which became known as the Straus-Boke rider, had been made an issue in the November election. *San Francisco News*, February 22, 1949, "How they voted in Congress."

⁷¹ Dinuba (California) *Sentinel*, Nov. 4, 1948. Since 1944, when an unsuccessful attempt was made to obtain support of the Democratic party for exemption of Central Valley from acreage limitation, the declarations of the party favoring retention of the limitation have become progressively more explicit.

⁷² *Business Week*, May 13, 1944, p. 24.

The proposal that California shall take over the Central Valley Project is receiving much publicity within the state, but the success of this as a tactic to escape acreage limitation seems at least as doubtful for the present as the prospects for securing a direct exemption. At the very point where legislation became necessary to accomplish a transfer to the state, undoubtedly acreage limitation would be made an issue at once in both Congress and the state legislature. Besides, since federal reclamation law confers great financial advantages on the localities which it assists, it might be very difficult to persuade California taxpayers to assume responsibility for providing capital free of interest and for giving other forms of assistance for the sake of enabling excess-land owners to have their way.⁷³

The tactic of using pumps to secure project water from underground seems unlikely to achieve its professed aim of helping owners of excess lands to escape enforcement of the acreage limitation, but not because of unwillingness to use the pumps. Holders of excess lands would hardly be so insistent upon obtaining a legal exemption if they believed they could secure their aim by so simple a device as using pumps. And especially if they believed—as the argument holds—that by pumping they could escape repayment besides. The principal function of this tactic so far, as well as of the tactic of proposing that the state take over the project, seems to be to provide the public with confusing arguments.

The status of the tactic of using the Army Engineers instead of the Bureau of Reclamation is entirely different. It is effective, and has succeeded already in overcoming resistance sufficiently to install the Army Engineers on three rivers in Central Valley, the Kings, Kern, and American. The Army Engineers have shown by public statement⁷⁴ that it is not their intention to enforce acreage limitation, even though Congress wrote it into the Flood Control Act of 1944 which authorizes these Army civil projects.

The issue is not simply, which of two federal agencies will design a dam and pour the concrete? There are at least two issues: (1) shall unity of Central Valley watershed development and operation be maintained or destroyed? (2) shall the answers given by historic reclamation law to the questions, who will pay the costs and who will receive the benefits, be accepted or rejected on federal projects in Central Valley?

⁷³ Editorials in *Sentinel*, December 14, 1948; *Sacramento Bee*, December 14, 1948; *San Francisco News*, Feb. 29, 1949. For opposing view see Harrison S. Robinson, president California State Chamber of Commerce, "Why the State Should Administer the Central Valley Project," address delivered before the Sacramento Valley council of the California State Chamber of Commerce, Sacramento, California, September 14, 1945.

⁷⁴ Lt. Gen. R. A. Wheeler, Chief of Engineers, to the Secretary of War, December 2, 1946. *Report on Allocation of Costs of Kings River and Tulare Lake Project*, House Doc. No. 136, 80th Cong., 1st Sess., p. 46; Major Gen. Thomas M. Robins, "The 160-acre limitation does not apply" (on Kings River and Tulare Lake Project), *Fresno (California) Bee*, Aug. 17, 1945.

Perhaps it would be more accurate to rephrase the second issue to state, shall these answers be accepted on some federal projects and rejected on others depending on the successes or failures of local special interests in pitting one federal agency against another?

The same local interests which challenge acreage limitation, also challenge the repayment provisions of reclamation law. The expectations of advantage to local project beneficiaries from repayment for projects constructed by Army Engineers, as compared with repayment for projects constructed by the Bureau of Reclamation, were told to the California Water Conference in 1945 by President Ray Wiser of the California Farm Bureau Federation. He said:

Congress has authorized the U. S. Corps of Engineers to construct 24 dams in California, most of which will be in the Central Valley. These dams are to be constructed by the Federal Government in fulfillment of its flood control responsibility and the present program calls for only \$2,326,000 in State funds to match \$125,000,000 in Federal moneys. In some cases, local interests will be required to contribute a share in the total cost of the dams which benefit them, but regardless of any such contributions, these water conservation facilities will be obtained through this program for the use and benefit of California farmers *at far less cost than would be the case by any other means.*

It is our understanding that the Corps of Engineers is making additional studies at the present time so as to insure the complete fulfillment ultimately of *Federal responsibility for flood control in California.*

In accordance with Congressional procedure, the next step is to secure from the Congress appropriations for the specific projects. That is the immediate task ahead of us. *Thereafter the use of the stored waters for irrigation purposes under the State program and under State laws could be achieved without any substantial conflicts between flood control and irrigation purposes.*⁷⁵

The opportunity to obtain construction of works that can be turned to the uses of irrigation, under the legislative classification of "flood control" (which is not reimbursable), may appear in a more favorable light when seen by beneficiaries than when viewed by taxpayers.

Perhaps the tactic of making use of the Army Engineers to escape reclamation law can be understood better by citing, as an example, the Kings River and Tulare Lake project. This project will improve water controls for about one million acres. It is located in the heart of Central Valley; it will benefit from federal construction of works on the Kings, Kaweah, Tule, and Kern, and can benefit from several other federal projects in Central Valley, either works under construction now, or works to be undertaken in the future. It was included by the State Engineer "as a unit for ultimate development of the State Water Plan for the San Joaquin River Basin,"⁷⁶ and the Kings River is crossed by the Friant-Kern canal of the Central Valley Project. Nevertheless it has been separated out from the comprehensive plan for Central Valley development by authorization to the Army Engineers.

⁷⁵ *California Water Conference*, p. 323. Italics supplied by the author.

⁷⁶ *State Water Plan*, Bull. 29, "San Joaquin River Basin," pp. 261-2.

This is the way it was done. In 1940 the Bureau of Reclamation possessed legal authorization under reclamation law to construct the project, but was instructed by President Roosevelt to postpone requests for appropriation owing to tensions in the international situation. At the request of landed interests on the project, particularly the Tulare Lake Water Storage District,⁷⁷ Congressman B. W. Gearhart began efforts in the same year to secure a Congressional authorization to have the Army Engineers construct the project.

The Tulare Lake Water Storage District, in the lower end of the project area, consists of nearly 200,000 acres with deficient water supplies and is subject to occasional flooding. In 1947 about twenty-five corporations owned 55 per cent of the lands of the district, and one hundred and two individuals owned about 36 per cent. All were holders of excess-lands, and together owned about 90 per cent of the district. The remaining 10 per cent was owned by more than six hundred holders of less than 160 acres each. In the entire Tulare Lake bed nine landowners own 109,000 acres.⁷⁸ The local interest in escaping acreage limitation therefore is substantial. Use of the Army Engineers seemed to offer a means of doing it; until 1944 irrigation features of flood control projects were not covered by reclamation laws. Although reclamation law was inserted in the Flood Control Act of that year which authorizes the project, an assistant chief of engineers has been quoted publicly in a Central Valley newspaper as saying that "the 160-acre limitation does not apply. . . ."⁷⁹ The initiative to use the Army came mainly from Tulare Lake where most of the excess holdings on the project are concentrated.

The remainder of the project area, the upper area of Kings River consisting of around 800,000 acres, has a relatively small proportion of its lands in holdings of excess size.⁸⁰ It is heavily populated, and the predominant form of organization is the irrigation district. From the moment Congressman Gearhart began his efforts to secure an authorization for the Army in 1940, a vigorous protest was made by citizens of this part of the project area. Their protest, which began with a petition bearing probably 2500 signatures, has grown in strength.⁸¹ It became organized mainly around elements of the Grange, Veterans of Foreign Wars, and labor unions.

⁷⁷ "Resolution of March 14, 1940 by board of directors of Tulare Lake Water Storage District," *Hearings before House Committee on Flood Control on H. R. 9640*, 76th Cong., 3d Sess., p. 554.

⁷⁸ *Hearings on S. 912* (1947) p. 1237.

⁷⁹ See footnote 74.

⁸⁰ Computations from private excess-holdings listed in a letter of assessor-collector, Fresno Irrigation District, indicate excess-holdings in that district of 240,000 acres equal about 14,000 acres, or 13 per cent. *Hearings before Senate Committee on Interior Department Appropriations*, on H. R. 3024, 79th Cong., 1st Sess., pp. 1001-3.

⁸¹ Testimony of Representative B. W. Gearhart, *Hearings before House Committee on Flood Control on H. R. 9640*, 76th Cong., 3d Sess., pp. 544-5.

Although Kings River and Tulare Lake project is financed by the federal government, local water users' districts play an essential role in repayment. Contracts expected to be entered into between these districts and the United States under reclamation law obligate them to raise the local funds for repayment to the federal government, and to obtain compliance with acreage limitation. At the present time the districts are putting up resistance to the acreage limitation,⁸² and to the amount proposed by the United States for repayment, as well.

Two principal forms of district organization exist in the project area. Nearly all of Tulare Lake bed is organized in the form of a water storage district. Under California law the electorate of water storage districts consists of landholders only, who cast votes in proportion to the assessed value of their lands.⁸³ In Tulare Lake this places overwhelming control in the hands of holders of excess-lands. Twenty-five corporations with 55 per cent of the land probably can make every decision. The more than six hundred landowners with less than 160 acres each who own only 10 per cent of the land, could hardly be effective even if they should choose to oppose the holders of excess-lands. The Water Storage District is uninhabited now, but unless future inhabitants should own land they could not vote anyway. Public opinion has no legal channel to express itself in a water storage district.

In the remainder of the project area the principal form of water users' organization is the irrigation district. Although the electorate of an irrigation district includes all registered voters, the directors of Kings River so far have not reflected the strong popular objections to use of the Army Engineers that are known to exist within their boundaries. On the contrary, the irrigation districts have taken the side of Tulare Lake Water Storage District, and bound themselves into a joint negotiating arrangement. This arrangement is through the Kings River Water Association, a voluntary organization to supervise allocations of Kings River waters between districts, that is without legal power to make a contract for repayment under reclamation law.⁸⁴

There may be a number of reasons for the solid appearance of this front despite the serious disaffection within their electorates. For one thing, irrigation district directors are chosen for staggered terms at special elections held at an odd date, a Wednesday in February. Few positions

⁸² Cost-allocation considerations in *re* Pine Flat reservoir—*Report of Board of Engineers, Kings River Water Association and Tulare Lake Basin Water Storage District, House Doc. No. 136, 80th Cong., 1st Sess., p. 42.*

⁸³ California Water Storage District Act, Sec. 9, *Deering's Gen. Laws, 1944, Act 9126.*

⁸⁴ Testimony of Philip A. Gordon, Chairman of Kings River Water Association and Chairman of board of directors of Fresno Irrigation District, *Hearings on S. Res. 295, p. 428.* The effect of making reclamation law a serious issue between candidates for irrigation district director is reflected in the increased vote cast in Fresno district, from 82 in 1947 to 2052 in 1949. (*California Farm Reporter, March, 1949, p. 4.*) Also perhaps in Assembly Bill No. 2210, introduced into the 1949 California Legislature to limit the exercise of suffrage in irrigation districts to freeholders only.

are open at any single election, and it has been customary to regard the elections as choices between persons, not between sides of an issue. For some reason Fresno Irrigation District boundaries were drawn to exclude Fresno city, which naturally is bound closely to the welfare of surrounding water users. This fact may minimize expressions of disaffection at the polls of that district. At any rate, there has been little serious effort to thresh out well-known issues at irrigation district polls, and the number of ballots usually cast is extremely small. As months and years go by without signature of water contracts, the interest of voters in their district organizations may become aroused; there are a few signs of this. Or the lethargy of citizens which democracies know well may continue.

In the meantime this curious paradox in the project area remains: while numbers of citizens speak up in public hearings, sign petitions, and elect members of Congress and the legislature to voice their support of reclamation, the directors of the districts which possess real and immediate power to put the law into effect give their support to the strongest opponents of reclamation law, although legally they are chosen by the same electorate.

The State Engineer of California, whose studies affirm the necessity for unity of Central Valley basin development, threw his influence against reclamation law, and in favor of the Army Engineers' entry into the Valley on Kings River. He made no appearance in support of appropriations to the Bureau of Reclamation for the Kings River project when Congress was considering them in 1944 and 1945.⁸⁵ But in 1946 his representative, in the names of the State Engineer and the Governor, asked Congress to make an appropriation to the Army Engineers. This representative, despite non-appearances (or failure to give support) in two preceding years when construction might have been expedited, now protested further "delay in getting flood relief" because "the need is urgent."⁸⁶

In this way the long-standing answers to the questions, who will pay the costs? and who will receive the benefits? have been subjected to attack indirectly, but effectively. Although the essentials of the economic plan made in 1902 have been endorsed by Congresses again and again—in 1910, 1911, 1912, 1914, 1924, 1926, 1927, 1937, 1940 and 1943⁸⁷—they

⁸⁵ *Hearings before Subcommittee of the House Committee on Appropriations*, 78th Cong., 2d Sess., on the Interior Department appropriations bill for 1945, p. 1125; *Hearings before a Subcommittee of the Senate Committee on Appropriations* on H. R. 4679, 78th Cong., 2d Sess.; *Hearings before Subcommittee of House Committee on Appropriations*, 79th Cong., 1st Sess., on interior department appropriations for 1946, p. 1323; *Hearings before Subcommittee of Senate Committee on Appropriations* on H. R. 3024, 79th Cong., 1st Sess., pp. 1050-51.

⁸⁶ Testimony of Northcutt Ely, *Hearings before Subcommittee of Senate Committee on Appropriations* on H. R. 5400, 79th Cong., 2d Sess., p. 471.

⁸⁷ Testimony of Harold L. Ickes, Secretary of Interior, *Hearings on H. R. 3961*, p. 537.

face the discard on Kings River now. If they can be circumvented by indirect tactics there, they can be scrapped elsewhere in the same way. Attempts to do this already are in progress, not only in California but elsewhere.⁸⁸

In explaining the alignment of forces on Kings River and in Central Valley, this study restricts itself arbitrarily to reasons that relate to irrigation and reclamation, and excludes those that relate to power. Here it is enough to say that reclamation law contains a clause providing that public agencies shall be given "priority and preference" in disposing of surplus project power. The purpose of this clause is comparable broadly to that of the 160-acre provision, and is intended likewise to answer the question, who will receive the benefits? For this and related reasons, opposition to reclamation law and to the agency which administers it appears to serve the purposes of private utilities and holders of excess lands alike.⁸⁹

In this genetic study of how, by whom, and for what purposes the development of Central Valley has been planned, a search has been made for broad perspectives rather than for systematic detail. In this light, it has seemed less important to detail and balance the arguments over issues, pro and con, than to examine the forces behind the arguments, the patterns of conflict, the roles of agencies of government.⁹⁰

Some evaluation is in order. The 57th Congress planned the foundations of western reclamation carefully. The right questions were asked, who shall bear the costs? and who shall receive the benefits? Answers defensible before the public were given. Principles and purposes were sound and in accord with the best American tradition. When it came to planning the reclamation of Central Valley, however, the Congress has never provided a forum, or committee hearing, for considering the legislative problems of developing the basin *as a whole*. Instead, it has held

⁸⁸ Roscoe Fleming, "'Sleepers' Threat to West," *Denver Post*, June 6, 1948.

⁸⁹ "Declaration of purposes of Central Valleys project conference," *California Grange News*, May 5, 1948; Ruth Finney, *San Francisco News*, October 16, 1948. A San Francisco trade journal characterized the intensity of the conflict by writing editorially that "this great (Pacific Gas & Electric) company [is] now engaged in a life and death struggle with the federal Bureau of Reclamation. . . ." (*Western Construction News*, March, 1948, p. 71.)

⁹⁰ Views expressed in this article toward reclamation law and its applicability to Central Valley are strongly opposed by others. The extent and variety of detail of this opposition view forbid complete or detailed cataloging here. The following selected items will be useful: Senator Sheridan Downey, "They would rule the valley," *San Francisco* 1947. Testimony of Roland Curran, Sheridan Downey, Northcutt Ely, *Hearings on H. R. 3961*, pp. 652, 768, 623. "California Water Project Authority, Application of excess land provisions of federal reclamation law to Central Valley project," 1945, (mimeo.). Testimony of Harry Barnes, Roland Curran, J. J. Deuel, Sheridan Downey, Northcutt Ely, S. T. Harding, Edward Hyatt, Milton Kidd, Ralph H. Taylor, on S. Res. 295, pp. 316, 46, 440, 1, 65, 356, 17, 57, 42. Papers or remarks by Harry Horton, James Musatti, Ray Wiser, at California Water Conference, pp. 426, 309, 322. Testimony by Roland Curran, Sheridan Downey, Northcutt Ely, S. T. Harding, Ronald Harris, Harry Horton, Edward Hyatt, Charles L. Kaupke, Boyd Stewart, *Hearings on S. 912*; (Curran) pp. 1310; (Downey) 128, 939, 1190; (Ely) 1243; (Harding) 59; (Harris) 674, 1261; (Horton) 1262; (Hyatt) 8; (Kaupke) 173; (Stewart) 1136. Examination of witnesses by Senator Downey throughout *Hearings on S. 912* will be found a useful source of opposing opinion.

separate hearings on this and on that portion of the Valley's development. Committees, by their composition and experience, have had greater interest in an agency than in the area, a fact which has not cultivated an understanding that maximum benefits of basin development cannot be attained without integration.⁹¹

If Congress deserves criticism for throwing one part of Central Valley's development to one agency operating under one law, and another part to another operating under a second law, it must be said that the executive branch of the federal government has not done conspicuously better. So far the Bureau of the Budget has made no decision whether to forward to Congress the comprehensive plan of the Bureau of Reclamation for full water resource development, or the comprehensive plan of the Army Engineers for flood control. By advancing to Congress a single plan—or even both plans—the executive could bring issues to a focus, and help to secure consideration of the Valley's legislative problems not in bits, but as a whole.

Failure to promote unity violates the first principle of giving single authority and responsibility for a job. It permits a sort of broken field running of agencies maneuvered by pressure groups. By agility and forms of deception that are within the rules, it is possible to undermine unity and fundamental plans and principles without seeming to do so. Evils of this kind produced the recommendations of the Hoover Commission

⁹¹ Authorization and appropriations bills for projects to be constructed by the Army Engineers go through different legislative channels from those which are followed if the same projects were to be constructed by Bureau of Reclamation. The agency, not the project, determines under what committee auspices and by whom the problem will be considered.

While this article was in galley proof the Hoover Commission published a study on the Kings River and Tulare Lake project. (Arthur A. Maass, "The Kings River project in the basin of the great Central Valley—a case study," Appendix 7 of *Task Force Report on Natural Resources* [Appendix L] prepared for the U. S. Commission on organization of the executive branch of the government [Washington: Government Printing Office, 1949], pp. 149-182.) This project is now under construction by the Army Engineers. The study reports that "two federal agencies were put into competition with one another to obtain support of the California beneficiaries," and "the fact that two federal water-resource agencies are operating in the same river basin, each planning multiple-purpose water control projects" is "the basic cause of the continuing conflict." The Hoover Commission has followed this study with a recommendation that "Rivers and Harbors and Flood Control activities of the Corps of Engineers be transferred to the Department of the Interior. . . ." (*Reorganization of the Department of the Interior: A Report to the Congress by the Commission on Organization of the Executive Branch of the Government* [Washington: Government Printing Office, 1949], p. 35.) Among significant results of the existing situation on Kings River, the Maass study lists the following: "2. It is still questionable whether or not the water resources of the Kings River are being developed and will be utilized in accordance with the most economic and beneficial utilization of all water and related land resources of the San Joaquin Valley and the Central Valley Basin. 3. The Kings River Project will cost the Federal Government considerably more than it should. A significant portion of the irrigation benefits, as yet not subject to precise evaluation, will in all likelihood never be repaid to the Federal Treasury. 4. Some of the beneficiaries of the Kings River project may be able, for all time, to avoid the acreage, land speculation, and full repayment provisions of Federal law. 5. The easing of repayment and operating requirements of Federal reclamation law with respect to the Kings River project may result in considerable pressure on the Federal Government to make equivalent concessions on other existing and proposed projects. Such pressure, if it succeeds, will increase the cost to the Federal Government of water resource programs by hundreds of millions of dollars. 6. The outcome of the conflict will in all likelihood favor the owners of large quantities of irrigation water. Prospective and small landowners and water users will not benefit proportionately. This finding has greater application to the Kern River and other areas to the south than to the Kings River area, where there are a number of relatively small landholders." (*Ibid.*, pp. 180-81.)

for governmental reorganization. In the current drive to enable the Army Engineers to avoid the purposes of the reorganization bill, holders of excess lands in Central Valley apparently have seen further opportunity to undermine reclamation.⁹²

The Central Valley Project was undertaken by the federal government more hastily than principles of good administration dictate. Acute unemployment and water shortage explain the haste, but they do not remove the prolonged effects of failure, before work commenced, to secure clear acceptance by local water users' organizations of obligations to repay under reclamation law. Having permitted this failure in the first instance, Congress allows the federal interest in the project to continue to suffer, by neglecting to write into appropriation bills clauses requiring execution of contracts by beneficiaries before funds are spent.⁹³

The state of California made an outstanding contribution toward unified development of the Valley in preparing the State Water Plan. Some of its officials have been less than devoted to unity in recent years, using their influence to break it down, and the economic plan for reclamation with it. Citizens of the Valley have not learned the crucial importance to their own future of the work of their own local water districts.

Whether the vision of Major Powell and the plan of Theodore Roosevelt and the 57th Congress to make it a reality are to survive or to become mere episodes of the past, is one way to state today's issue. Whether the future is to see full development of Central Valley's water resources, with costs distributed equitably and benefits widely, is another way. The character of communities to be created is in the hands of the people of the Valley, and of the Congress.

⁹² Ruth Finney, *San Francisco News*, February 18, 1949. Roscoe Fleming, *Denver Post*, February 13, 1949.

⁹³ Ralph B. Wertheimer states, "The Act of May 10, 1926 (ch. 277, 44 Stat. 453) and the Act of March 3, 1925 (ch. 467, 43 Stat. 1186) prohibited the expenditure of any money for construction prior to the execution of the necessary contract with the irrigation district, while Section 46 (Omnibus adjustment act of May 25, 1926, ch. 383, 44 Stat. 636) makes the execution of the contract a condition precedent to delivery of water and not construction. The former seems the better policy." "Legislative and administrative history of acreage limitations and control of speculation on federal reclamation projects," p. 27, in *Report on problem 19, Central Valley project studies*.