

WATER

**and the rise of
public ownership
on the Fresno plain**

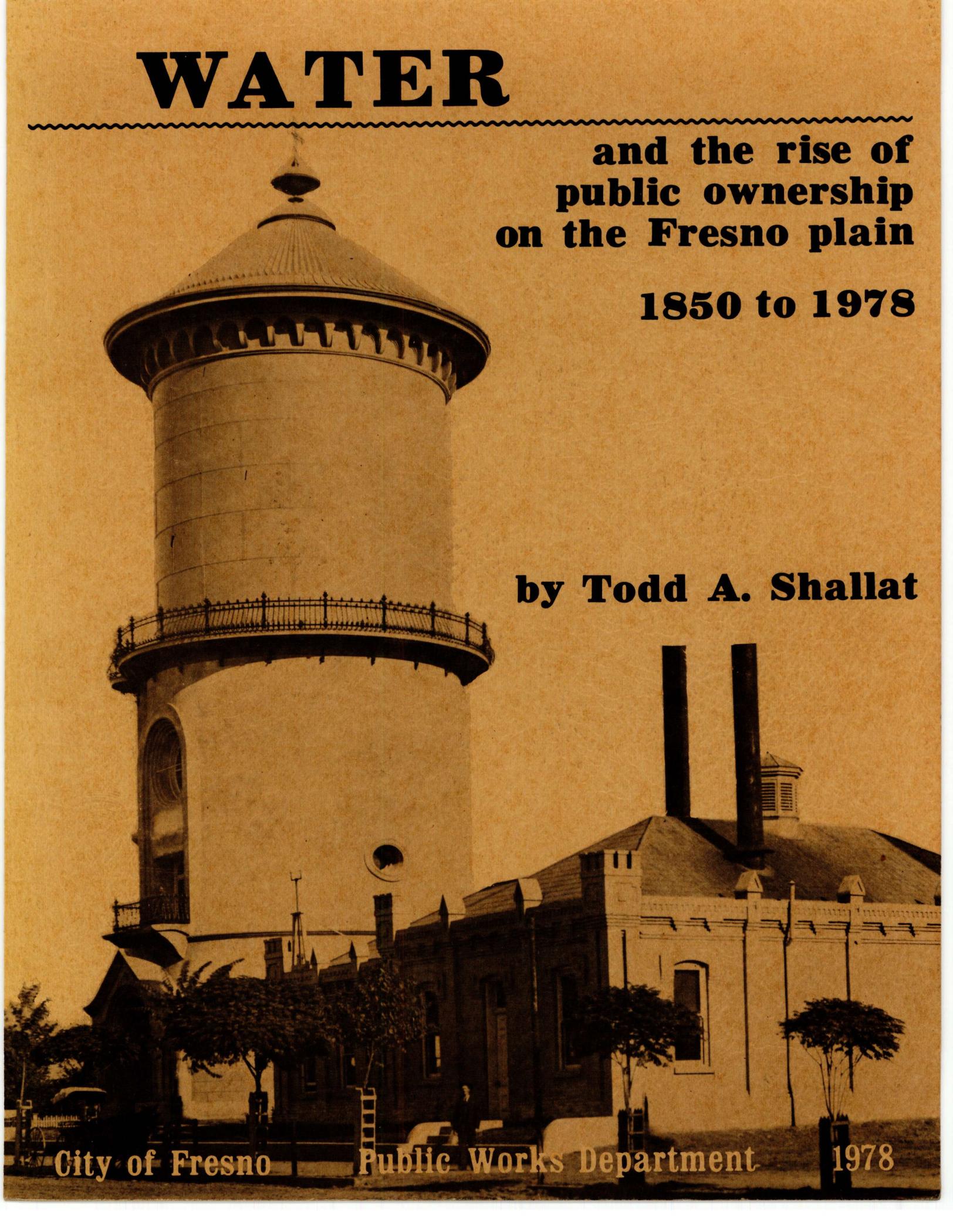
1850 to 1978

by Todd A. Shallat

City of Fresno

Public Works Department

1978



The Cover Photograph ---

The Fresno Water Tower was constructed in 1894, by the old Fresno Water Company, and was acquired by the City with the water system. The Tower, which was in active use for water storage until the early 1960's, is now maintained as a key feature of the Fresno Civic Center, surrounded by City, County, State, and Federal buildings. The pumping plant (in the foreground) has been removed. The location is at Fresno and "O" Streets.

The Tower was designed by Chicago architect George W. Mayer. The base, which is constructed with double brick walls, was originally planned to house a public library. The steel tank held 150,000 gallons. The total height is about 100 feet.

The Tower has been honored by the American Water Works Association as its American Water Landmark No. 17 (1973). It is also on the National Register of Historic Places. Photo courtesy of Donald C. DeVere.

WATER AND THE RISE OF PUBLIC OWNERSHIP ON THE FRESNO PLAIN, 1850 TO 1978

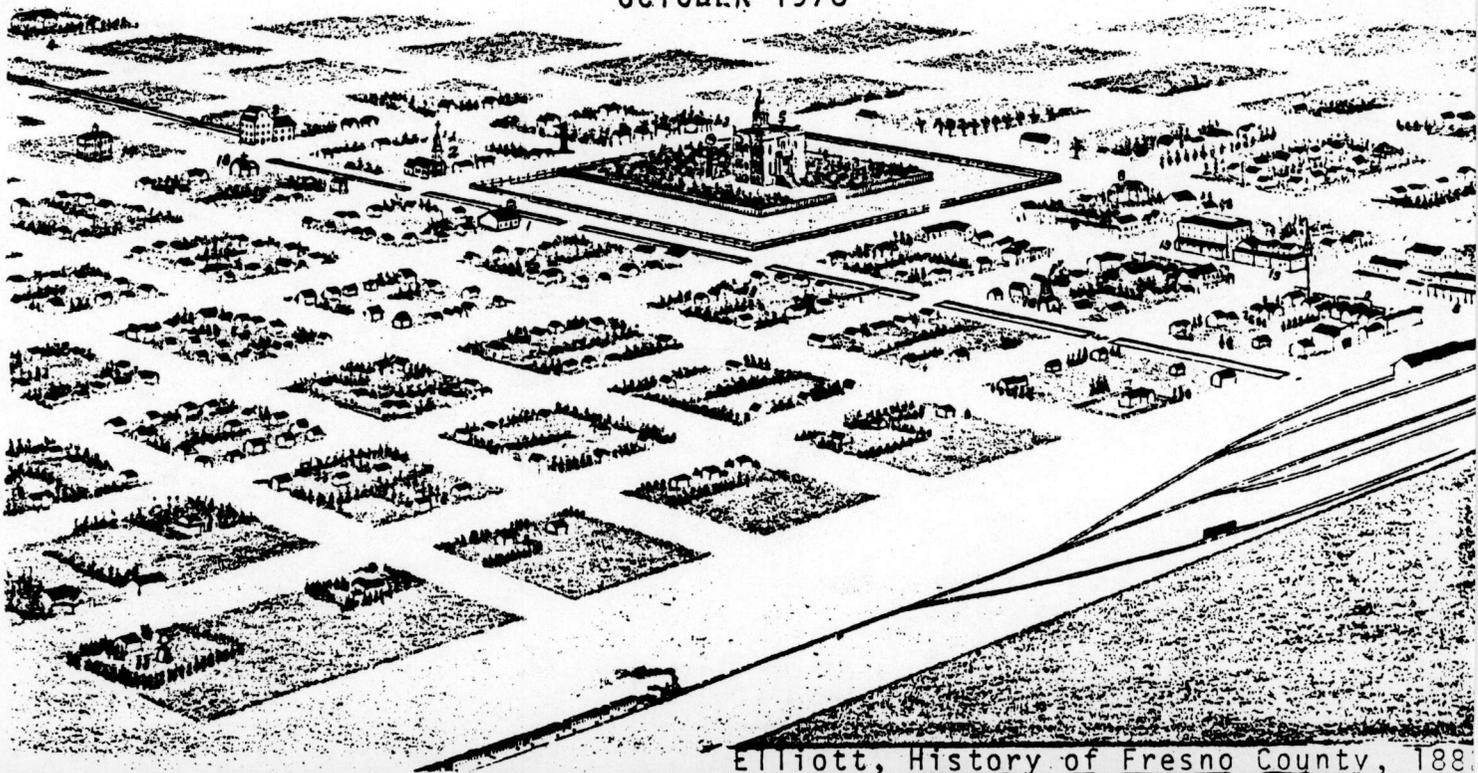
by
Todd A. Shallat

CITY OF FRESNO

PUBLIC WORKS DEPARTMENT

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OCTOBER 1978



Elliott, History of Fresno County, 188

Foreword

The San Joaquin Valley is often described as the "Garden of the Sun". This exceptionally fertile region was converted from an arid desert through the efforts of energetic, determined, and foresighted people who developed and secured the water resources necessary for intensive agriculture. In recent years, several Valley counties have vied for the honor of having the highest value of agricultural output of all of the nation's counties; Fresno County has generally led the way.

The growth of the "agribusiness" economy has been paralleled by the creation and expansion of cities throughout the Valley to serve as the financial, supply, educational and cultural centers which support the farm areas. The City of Fresno has grown from a village at the time of its 1885 incorporation to a community of about 200,000 in a metropolitan area of over 300,000, one of the ten largest cities in California.

As the City has developed, it has been increasingly more important to create a coordinated and cooperative atmosphere and program which bring together the various irrigation, municipal, and county water interests; no longer is a "town vs. farm" attitude either desirable or acceptable. Joint action is evident in various aspects of water management, including water availability and distribution, ground water recharge, drainage, water conservation and reclamation, land use programs, and other mutually beneficial activities.

In working together toward their new-found common objectives, the various water agencies in the Fresno area have had to overcome many years of antipathy and suspicion, much of which stemmed from a profound degree of misinformation or noninformation regarding each other's needs, goals, objectives, and legislative mandates. In short, those involved lacked an adequate perspective of how and why the various agencies and their physical facilities came to be what they are today. While there have been a number of publications which dealt with some historical aspects of water development in the central San Joaquin Valley none seemed to adequately focus on the Fresno area itself, nor to address and tie together both the urban and rural situations; in most cases, such an emphasis was outside the scope of the publication.

Several years ago, the City of Fresno, through the Public Works Historical Society of The American Public Works Association, became aware of the Public History program of the University of California at Santa Barbara. U.C.S.B. had identified a need for increased use of historical perspective in the administration of public agencies, and was endeavoring to interest students in educational work which would lead to careers in Public History. As a part of this program, students would, desirably, have an opportunity to undertake research and preparation of actual public historical documents of interest to individual public agencies.

The City's Public Works Department, which operates the water management program (including water production and distribution and regional wastewater collection and treatment) sought permission to participate in the Public History program with the specific objective of a history of water supply for the Fresno area. The Department was successful and, working with U.C.S.B., was fortunate to secure the services of Todd Shallat. Mr. Shallat has, we believe, carried out the task in an exemplary manner despite a progressive mutual awareness that the task had a magnitude and complexity much greater than initially perceived. We believe that Mr. Shallat's work is a unique contribution to present and future management of Fresno's water resources program and that it validates the "Public Historian" concept.

Various water and other public officials in the Fresno area have given assistance in this research and their help is greatly appreciated. Special thanks go to Dr. Robert Kelley of U.C.S.B. and Dr. Suellen Hoy of PWHS-APWA for their counsel and encouragement to Mr. Shallat. Finally, on behalf of the City of Fresno, I would like to extend to Todd Shallat sincere and substantial appreciation. He fitted in well with the City staff and gave much more to the task than would have ordinarily been expected. His work will have lasting value, both as reference material for the City and its staff and to the citizens and students of the Fresno area who now have a historical work on Fresno water supply which, because of its quality, they may read both for pleasure and for education.

JAMES L. MARTIN
Public Works Director
City of Fresno
Fresno, California
July, 1978

ACKNOWLEDGMENTS

Rarely do historians have an opportunity to investigate city government from within. Yet, from my City desk, I was treated to an insider's view which, hopefully, gave my study some sensitivity to the diverse problems of water management in a dry climate metropolis.

My search relied on the patience and expertise of countless public servants. Harry G. Murishima and Jackie Dowler mapped historic waterways; and Donald C. DeVere offered additional help with the graphics and cover design. Vital technical assistance was provided by Daniel L. Trafican and Kenneth W. Hohmann. Alva Hintz typed portions of the manuscript in its early stages. In addition, I would like to thank Samuel A. Suhler and the tireless reference staff of the Fresno County Free Library for their daily assistance.

I owe a substantial debt to those who endured me at close range--my office-mates in Public Works Administrative Services. Stanford A. Brown kept the project and the author free from administrative entanglements. Jeanne A. Papagni proofread and re-read the manuscript, as did Donald G. Gorham. Annette Silva offered moral support. Furthermore, I was very fortunate to work with an expert typist, Judi Huss, who did the lion's share of the hardest work.

I was further advised by a trio of scholars at the University of California, Santa Barbara. Carl V. Harris, who introduced me to the study of municipal government, evaluated the manuscript point-by-point. Dean Mann added the valuable perspective of a political scientist. Lastly, Robert L. Kelley--ever helpful, ever optimistic--steered the project from beginning to end.

In every sense, this project was the brainchild of Public Works Director, James L. Martin. It was he who guided the project from initial chaos to final publication and to him I owe a great personal debt. As always, any errors of fact, interpretation or judgment remain my own.

Todd Shallat
October 1978

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CHAPTER ONE

WATER AND INCORPORATION, 1872 TO 1866

What do we want of this vast worthless area, this region of savages and wild beasts, of deserts of shifting sands and whirlwinds of dust, cactus and prairie dogs? . . . Mr. President, I will never vote one cent from the Public Treasury to place the Pacific Coast one inch closer to Boston

--Daniel Webster, 1848¹

Before the Civil War, Easterners referred to the vast region west of the Mississippi as The Great American Desert. The pioneers of Fresno County found the treeless plain between the Kings and San Joaquin Rivers particularly uninviting. "So desolate was the plain," remembered a pioneer of the 1870's, "that one could journey twenty miles or more in any direction without so much as finding a bush large enough to cut a horse switch."² However, a generous rain could turn the desert into a swamp. During the flood season, October through April, the creeks would jump their banks and spread out over a depressed portion of the plain where the City of Fresno now stands. Periodically, great herds of tule elk, California's counterpart to the buffalo, drifted up from Tulare Lake to feed on foot-high pin grass (alfalaria) growing through the Fresno swamp. In spring, the swamp subsided and the desert reclaimed the plain.³

Having witnessed the seasonal cycle, early settlers understood the double meaning of reclamation. In the 1870's, drainage canals and levees reclaimed the delta swamps while irrigation reclaimed the Fresno plain. In the town, as well as the farm, Fresnoans realized that the future of their community hinged upon reclamation and their ability to manage this unpredictable water supply. At the same time, businessmen demanded low taxes and a laissez-faire, "hands off" form of town government. Fresno's first town council was no more than a caucus of leading citizens, without authority to levy taxes or sponsor public waterworks. Initially, property owners preferred to supply their own water, fight their own fires, and grade their own streets rather than vest local government with the authority to tax or store water for the community as a whole. Not until the population boom of the mid-1880's did the need for public waterworks outweigh the commitment to weak and informal town government.

THE FRESNO DEPOT, 1872

"Fresno seems to be the grand center to which all eyes are turned . . . Henceforth, the passenger train will run through that point regularly."⁴

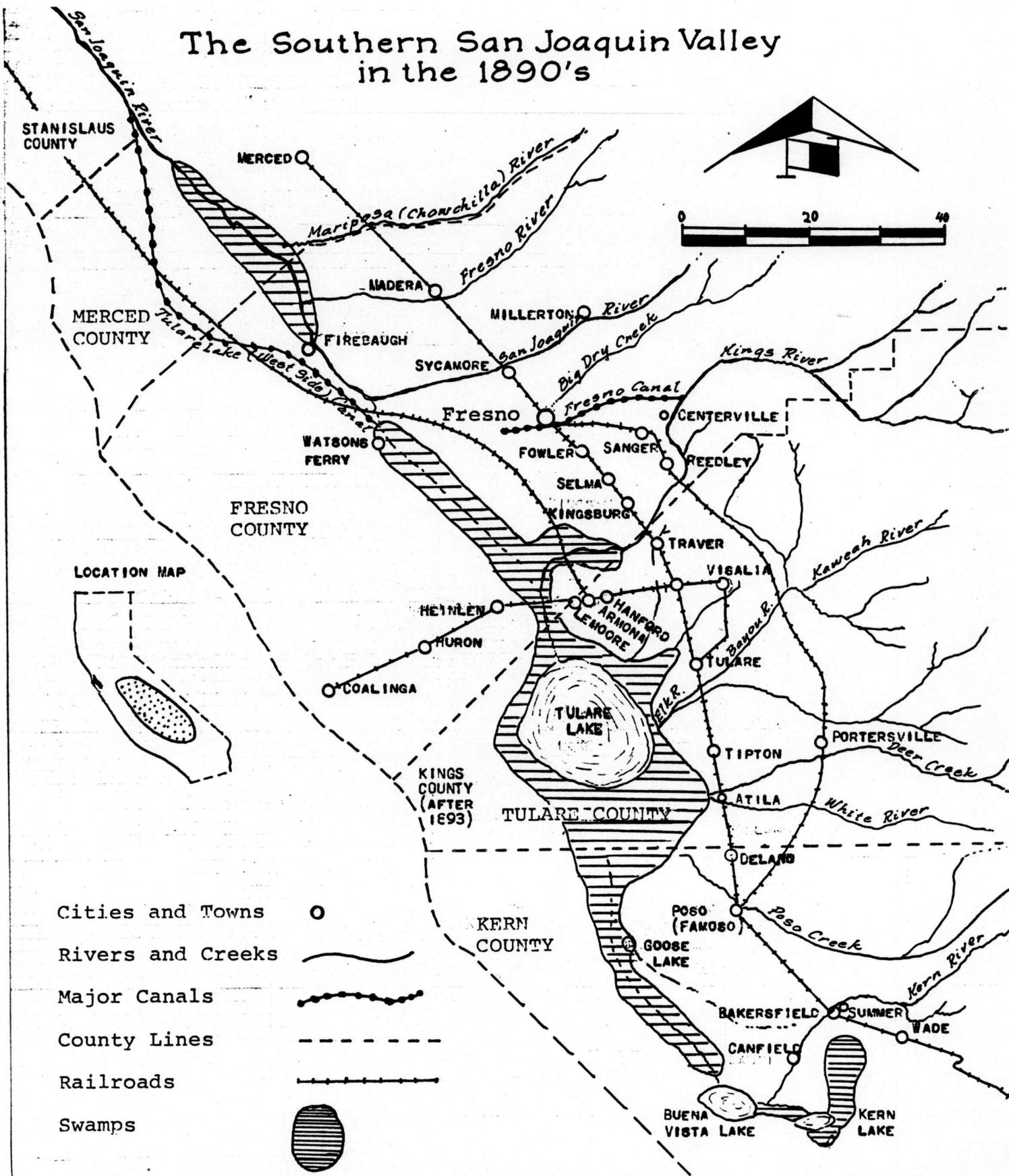
With this two sentence matter-of-fact report, The Millerton Weekly Expositor unwittingly announced the ground breaking of the future water, irrigation, and hydroelectric power capital of the San Joaquin Valley.

On May 15, 1872, the Central Pacific Railway Company bridged the San Joaquin River at Sycamore Point (near present-day Herndon) and began laying track south toward Visalia. Ex-Governor Leland Stanford, figure-head of the Central Pacific, rode ahead of the construction team in search of a town site. At first Stanford planned to build a railroad town at Sycamore on the San Joaquin. Stanford also considered placing a depot near the modern town of Kingsburg. Then, in the Spring of 1872, Stanford and the Central Pacific crew stumbled upon the wheat fields of "Captain" Anthony Y. Easterby. Captain Easterby and his colleague, Moses James Church, had made the desert bloom by diverting water from the Kings River some twenty miles inland. Easterby's farm proved the fertility of the soil and the utility of irrigation. Stanford realized that the importation of water could transform the treeless plain into the business and agricultural "hub" of the Central Valley.⁵ Here, Stanford located the depot, two miles west of Easterby's farm and ten miles south of the San Joaquin River. On May 28, 1872, the Central Pacific tacked up a simple wooden station and began surveying streets for the new Town of Fresno.⁶

The Fresno depot sat in a depressed portion of the plain known as the Sinks of Dry Creek. Historically, Big Dry Creek⁷ had flooded biannually, once in December and again in April. The floods spilled out of the Sierras, running southwest, and spread over the Fresno plain. Quickly the creek would fill the Fresno "sink" and, gradually, soak through the sandy soil into underground aquifers--that is, water-bearing beds of permeable rock beneath the soil. Centuries of flooding maintained this underground reservoir and brought nutrients responsible for the fertility of the Fresno plain. Periodic flooding would make the Sinks of Dry Creek a productive agricultural basin but a hazardous location for settlement.⁸

The railroad arrived in a dry year. In 1872, few white men had lived long enough on the Fresno plain to realize the danger of building a town in the path of Big Dry Creek. Who worried about floods in a desert? A few old timers, canal builder Jesse Morrow for one, recalled a violent flood in the winter of 1866-67. But the lessons learned from the flood of '66 had evaporated in the five-year dry spell which followed. In 1872, when Stanford selected the location of the Fresno Depot, Big Dry Creek was but a parched and dusty stream bed, an unassuming trickle with a grandiose name. Had Stanford waded across the plain during a flood year, 1867 for example, the Central Pacific would have constructed an elevated road bed and perhaps levees, certainly not a depot, in the Sinks of Dry Creek.⁹

The Southern San Joaquin Valley in the 1890's



SOURCES: THOS. H. THOMPSON, ED., OFFICIAL HISTORICAL ATLAS-MAP OF FRESNO COUNTY (TULARE, 1891); SEE ALSO, CARL EWALD GRUNSKY, "IRRIGATION NEAR FRESNO, CALIFORNIA," IN U.S. DEPARTMENT OF THE INTERIOR, WATER SUPPLY AND IRRIGATION PAPERS OF THE UNITED STATES GEOLOGICAL SURVEY, NO. 18 (WASHINGTON, D.C.: G.P.O., 1898), PLATES I, IV, AND XII.

FLOODS AND FIRES, 1874 to 1886

The founding fathers of Fresno waited but two years for the first episode in a series of water-related crises which forced the reorganization of local government. In the autumn of 1874, the new settlement suffered its first heavy rain. Two years before, the streets of Fresno had been surveyed by the Contract and Finance Company, an auxiliary of the Central Pacific Railway Company. Although the Contract and Finance Company had graded the streets of Merced and railroad towns to the north, the company neglected to grade the streets of dry Fresno. Because of this oversight, Front Street (modern "H" Street) and the streets adjacent to the depot were submerged and impassable. Some businessmen talked of suing the Central Pacific for damages. Instead, fierce competition arose between neighbors, each attempting to grade his lot so that the puddle would spill into his neighbor's cellar.¹⁰

By the muddy autumn of 1874, civic-minded Fresnans were already complaining that their village lacked the governmental machinery with which to drain the streets or deal effectively with any municipal emergency. Throughout its first decade, Fresno remained an unincorporated town: that is, it was not a legal "city" but a settlement without government officials, without a charter, and without legal power to levy taxes or sponsor municipal bonds. Nor did the town have the power to manage its most precious resource: water. Thus, the settlement in the Sinks of Dry Creek could build neither dams nor levees to hold back the floods. Furthermore, Fresno survived its first decade without public wells.¹¹

Initially, the unincorporated town of Fresno relied on the government services of Fresno County. Since the formation of Fresno County, on April 19, 1856, the County Board of Supervisors had convened in the mining town of Millerton, on the San Joaquin River in the Sierra foothills. As the population of Fresno County shifted from the mining camps of the foothills to the farming colonies on the plain, agitation arose to move the county seat from Millerton to a more suitable location. Here was an opportunity for the community of Fresno to gain some governmental autonomy. In March, 1874, Fresno and five other farming communities entered the popular election which would determine the new county seat.¹²

In the Spring of 1874, on the eve of the county seat election, the town of Fresno was no more than a cluster of canvas and board shacks around a railroad depot, neither the largest nor the oldest settlement on the Fresno plain. The Central Pacific owned most of the land surrounding the depot; therefore, locals referred to Fresno as Leland Stanford's company town.¹³ But even to call Fresno a "town" was a bit presumptuous. Pioneer R. W. Riggs recalled that Fresno was "not much of a town [but] a handful of houses in a desert of sand."¹⁴ On the other hand, Fresno had a modern railroad depot and telegraph office. And because of its central location, Fresno became the second choice of rival communities.

Furthermore, Fresno gained the support of the Millerton Weekly Expositor, the County's only newspaper. On March 23, 1874, Fresno won the election which overnight turned the one-horse railroad town into Fresno County's shire town. The victory assured the future growth and prosperity of the community.¹⁵

On March 25, 1874, two days after the election, the Expositor rejoiced, "now we can have telegraph and railroad communication with the world at large and enjoy some of the comforts of civilization."¹⁶ The County Board of Supervisors temporarily convened in so-called "Court House Jr.," a hastily constructed wooden house on the corner of Mariposa and "K" (modern Van Ness). Meanwhile, the copper dome of Court House Senior was being hoisted above Court House Park. "Fresno has been extremely lively," reported the Expositor in Spring, 1874, "moneyed men appeared anxious to secure as many lots as possible."¹⁷ One hundred lots were sold in two days of April. And by 1875, some four hundred land speculators, merchants, ex-miners, and Chinese laborers had gathered at the new county seat.¹⁸

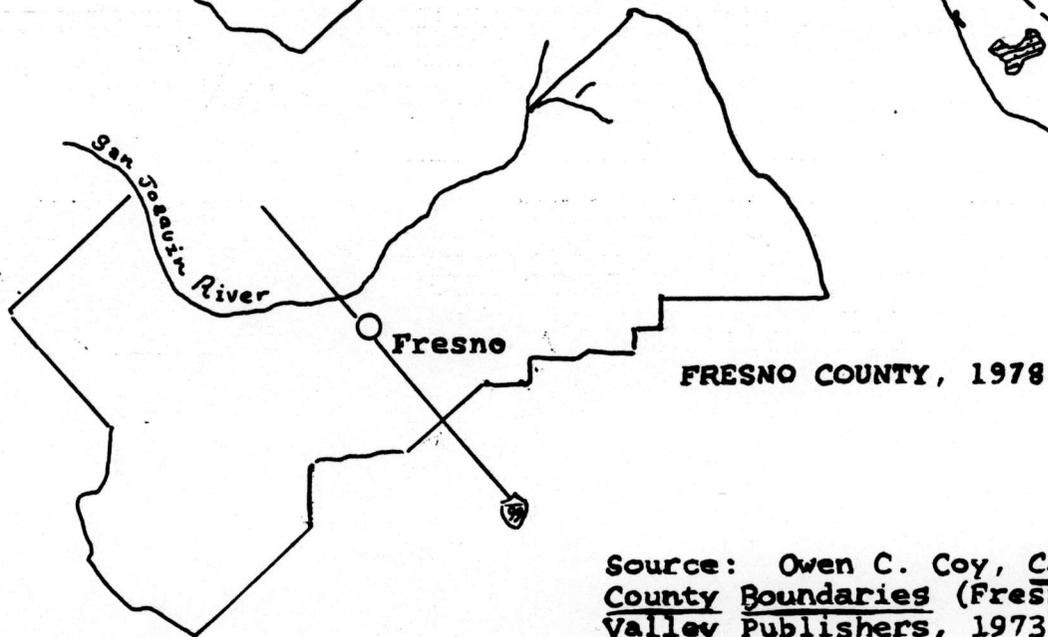
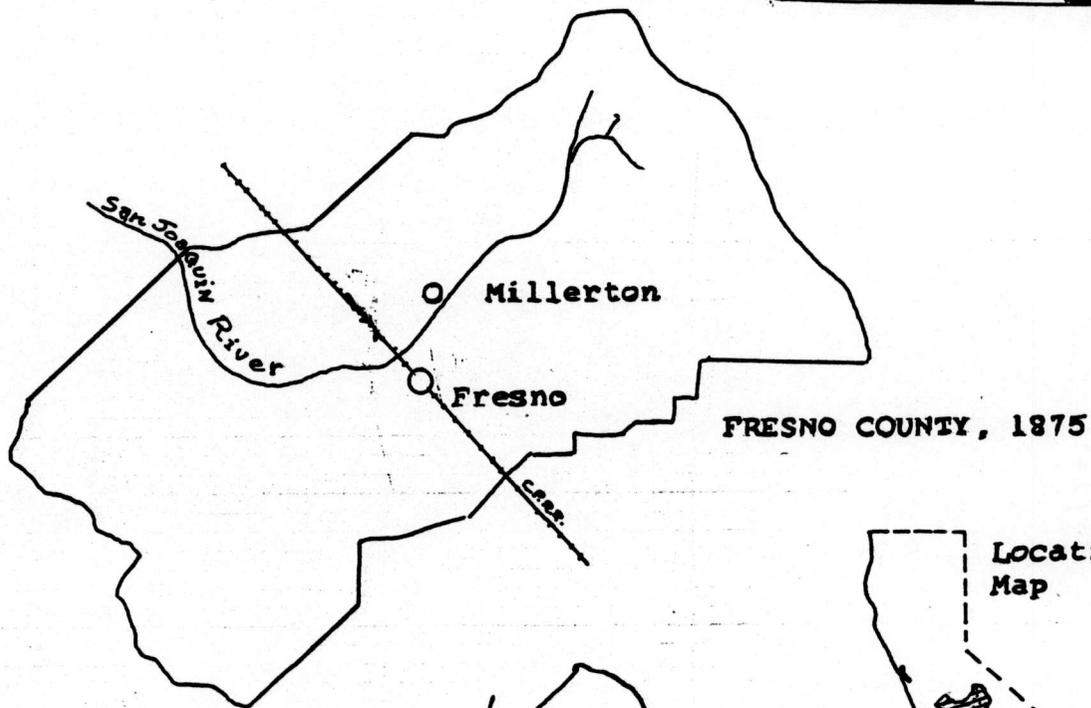
With the population shift from Millerton to Fresno, the migrants left behind the abundant water supply of the San Joaquin River for a land-locked community without one public well. Civic-minded Fresnans hoped that the population increase would force the County to sponsor wells for fire protection and sewers for flood control. Instead, the Central Pacific imported water ten miles by rail from the San Joaquin River. Near the depot, one enterprising man sold water to travelers for the exorbitant price of a bit (twelve and one-half cents) a bucket. These were the first water purveyors in the town of Fresno.¹⁹

With no reliable water supply, the new county seat was left unprotected against what would soon become the most feared municipal enemy: fire. On January 4, 1876, fire gutted the Bishop & Company drugstore near the corner of Mariposa and "I" (modern Broadway). From the drugstore, the blaze spread out of control into Lawrence's Saloon and adjacent buildings. Fortunately, a recent rain had left large puddles in several downtown streets. Volunteer firefighters, working in two lines, were able to fill their buckets directly from the street. The blaze caused about \$13,000 in property damages and, most tragically, destroyed the town's one and only weather thermometer. Had there been no street puddles, the fire may well have leveled several blocks.²⁰

The fire of January 4, 1876, forced property owners to examine their water supply. Concerned citizens convened in a tavern (euphemistically known as City Hall) and, in the well-lubricated discussion which followed, agreed that the City needed public wells, hydrants, and an alert volunteer fire department. "If water-works were constructed," contended the Expositor, "it would reduce the cost of insurance, lessen the danger of the destruction of property by fire, and would furnish much better water than is at present being used in the town."²¹ Public waterworks, however, meant taxes, and the loosely organized citizens' council could do little more than call for volunteer firemen. Nothing substantial materialized and a week after the drugstore fire, concerned

FRESNO COUNTY: PAST AND PRESENT

Fresno County was formed on April 19, 1856 from territory which previously belonged to Merced and Mariposa Counties. Since 1856, the California State Legislature has altered the boundaries of Fresno County seven times: in 1861, 1870, 1874, 1887, 1893, 1909, and 1923.



Source: Owen C. Coy, California County Boundaries (Fresno: Valley Publishers, 1973), pp. 101-106.

citizens had quite forgotten their fiery commitment to fire fighting and public waterworks. The Expositor lamented:²²

After every fire alarm, great or small, in this town, a citizens meeting is held for the purpose of devising ways and securing means for protecting the town. . . . In our opinion, nothing will be done until the major part of the business portion of town is laid in ashes.

The citizens' council had hoped that private enterprise would respond to the great public need for water. In 1876, Lyman Andrews and George McCullough began construction of a well and water storage tank near the corner of Fresno and "J" (Fulton). So successful was the project that in 1878 the Fresno waterworks attracted a group of Chicago investors and incorporated as the Fresno Water Company. It supplied water for domestic purposes: drinking, cooking, washing, and garden watering. Although the directors of the Water Company unlocked their pumps when the fire bell rang, they had no intention of providing free water or public hydrants. Fire fighting was too big a charge for the single well of the Fresno Company.²³

In 1876, incorporation, municipal taxation, public works, and a professional fire department seemed like drastic steps. The community had yet to suffer a truly catastrophic fire and the town council still hoped that private enterprise or volunteers would protect the downtown business district. Early in 1877, a group of energetic young men organized a volunteer fire brigade, the Hook and Ladder Company. Leopold Gundelfinger, foreman of the Hook and Ladder, persuaded local merchants to donate \$500 for a wagon, ladders, buckets, chains, axes, and other fire fighting paraphernalia. The volunteer firemen were still short of the most important tool of their trade: water. Thus, Gundelfinger's up-to-date "hook and ladder" method was little more effective than the old-fashioned "fill a bucket and run to the fire" technique. By the winter of 1878, six year-old Fresno had suffered eight more fires, all on "I" Street (modern Broadway), destroying some fourteen houses.²⁴

Meanwhile, the population of the town of Fresno had jumped from about 400 in 1874 to 1,112 in 1880. Then, remarkably, Fresno swelled to a population of 10,818 by 1890. With population growth, new shops crowded into the downtown blocks and fires grew increasingly severe. On July 24, 1882, a ferocious blaze devastated thirty-five downtown buildings (including some "fireproof" structures), reaping over \$250,000 in damages. Ironically, the inefficient fire department itself burned down in that catastrophe.²⁵

On the next day, the Expositor asked: "Will the people of Fresno sit supinely by, or will they unite together and tax themselves for the purposes of securing a fire engine and cisterns [water-storage tanks]?"²⁶ Before this fire of July, 1882, most Fresnans preferred to store their own water rather than pay taxes for community water-storage facilities.

However, in January, 1883, the fire menace was such that concerned citizens petitioned the County Board of Supervisors to create a fire district as a substitute for incorporation. The Supervisors appointed a three-man Fire Commission consisting of Thomas E. Hughes, S. A. Miller, and W. H. Chance.²⁷ The Commission swiftly arranged a special election to ratify a fire tax and elect an official tax collector.²⁸

On June 15, 1883, voters of the Fresno Township ratified a property tax of seventy-five cents on one-hundred dollars assessed valuation. K. G. Kupe became the township's first tax collector and assessor. The tax provided \$6,500 to equip a fire department and provide water for fire fighting and other municipal uses. Soon the Fire Commission authorized the installation of three wells where Mariposa intersected "H", "I", and "J" Streets. The community also installed three cisterns. For the first time, Fresno could have a fire department equipped with water. On October 31, 1883, Fire Commissioner Miller signed up thirty-four volunteers for the town's first efficient fire company, the Fresno Alert, No. 1. The formation of the Fresno Alert set two important precedents for the Fresno Township. The fire tax of 1883 was Fresno's first municipal tax and the wells and cisterns along Mariposa Street were the Town's first public waterworks.²⁹

However, the fire district proved a poor substitute for incorporation. In the first week of February, 1884, Fresno faced another water-related crisis for which the community was unprepared. On February 2, 1884, the Expositor announced, "The floodgates of heaven were opened last night and 1.17 inches of water poured down on the the no longer thirsty earth."³⁰ Two weeks later, Big Dry Creek plowed through the downtown business district along Kern and Inyo Streets. By mid-February, trains stopped and the Expositor estimated that "The Great Flood" would cost the railroad one-half million dollars. With business paralyzed, Fresnans bailed out their cellars and resolved to make drainage and flood protection top priorities of governmental re-organization.³¹

After the "Great Flood of 1884," Fresnans focused their attention on the proposal that the township incorporate as a general law city. Proponents of incorporation contended that Fresno should have a full-time city government capable of sponsoring badly needed civic improvements. The Town needed building codes, sanitation regulations, drainage canals, sewers, paved streets, and a local police department. Furthermore, Fresno still lacked a sufficient number of public wells for fire protection. Opponents of incorporation, still smarting from the pinch of the 1883 fire tax, charged that full-time government would mean more taxes and more "dirty politics".³²

Incorporation had already been defeated in two popular elections. On December 1, 1883, an incorporation proposal had gone down in overwhelming defeat. Again, on May 3, 1884, incorporation had lost a close election despite the support of both the Expositor and its competitor, the Daily Republican. In May, 1885, the Board of Supervisors rejected a petition for a third incorporation election and then, after

realizing the unpopularity of their decision, suggested that the petitioners try again. The Fire Commission surveyed the town, conducted a census, and prepared the proposition for Fresno's third special election for incorporation. On election day, September 29, 1885, incorporation won a comfortable victory and the town of Fresno became the City of Fresno. Technically, Fresno became a fifth-class municipal corporation, housing 3,459 inhabitants on 2.87 square miles. Five elected Trustees replaced the self-appointed citizen's council which had governed so loosely for thirteen years. The Board of Trustees first banged the gavel on October 27, 1885, the date which has been adopted as the official "birthday" of the City of Fresno (for a chronology of events see Appendix A).³³

Unfortunately, Fresno's water problems did not evaporate with incorporation. On November 16, 1885, yet another flood rolled down Kern and Inyo Streets, splashing through the plush lobby of the Grand Central Hotel. This time, the City taxpayers provided part of the drainage cost. Despite this bold attempt to deal with flooding, property owners quickly sued the Board of Trustees for water damage. Exasperated, the Trustees decided that drainage and flood control should be under the supervision of a City Engineer. On November 28, 1885, Ingvar H. Teilman became the first in a long line of City Engineers charged with managing Fresno's unpredictable water supply (for a list of influential men see Appendix B).³⁴

* * * * *

Initially, the founders of Fresno had hoped to market their goods and practice their professions with a minimum amount of government interference. Community leaders convened in saloons where they polished off local business with voice votes and rounds of beer. Every man graded his own lot and taxes remained low. The volunteer fire companies exemplified this commitment to low-cost, participatory institutions. When the alarm sounded, every able body grabbed a bucket, hunted for water, and then ran towards the fire. The responsibility for fire fighting was vested in the members of the community, not community government.

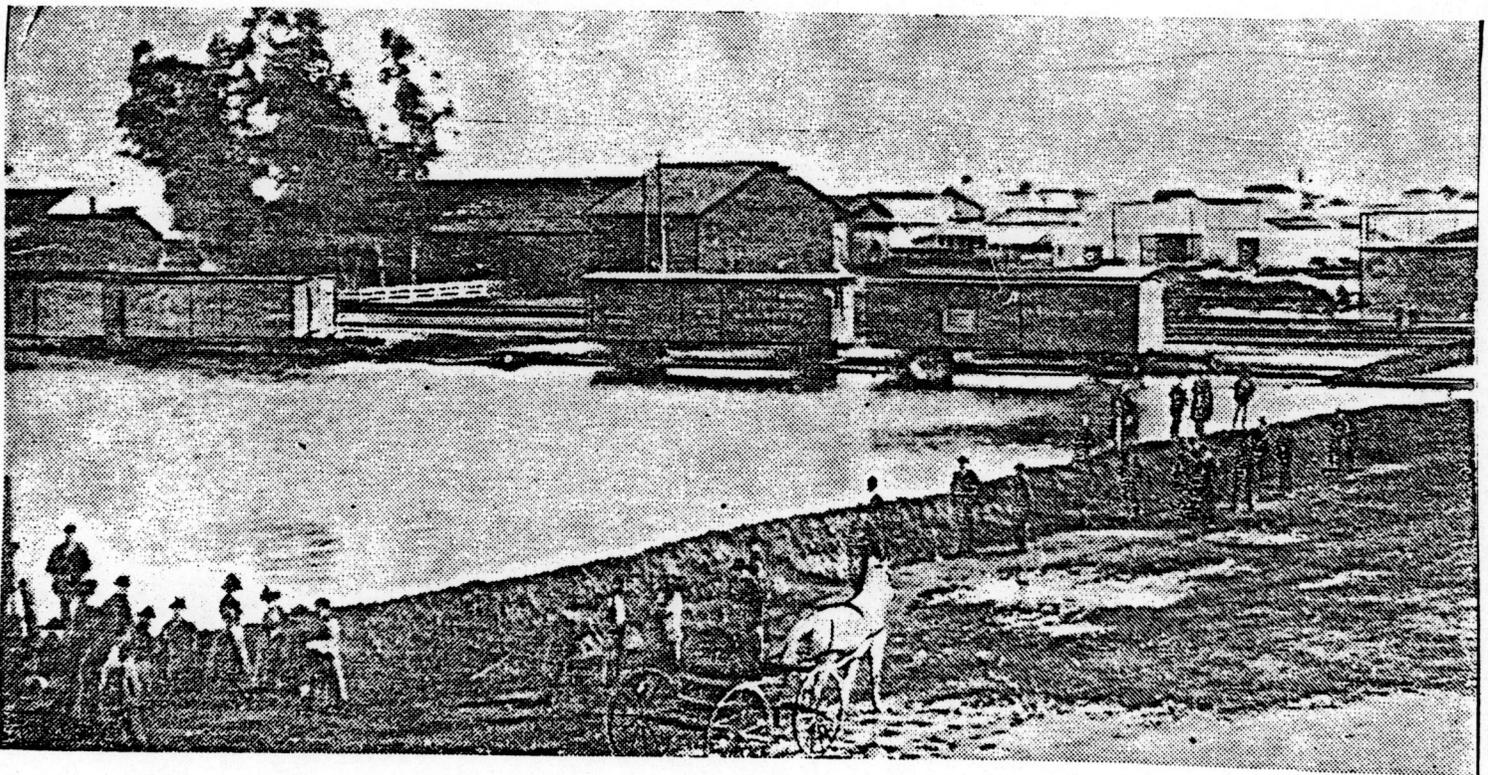
Volunteer fire brigades and town meetings worked well when Fresno was small enough for every adult to have his say. However, as the population of Fresno grew into the thousands, participatory government grew clumsy and increasingly undemocratic. Similarly, it was clumsy and inefficient for neighbors to dig separate wells or grade only their own yard. Between 1872 and 1885, a series of water-related crises--floods and fires--forced Fresnans to seek collective protection against common municipal enemies. In this way the politics of water played a crucial role in strengthening the Township, incorporating the City and laying the foundation of modern Fresno.

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FIGURE I-C

THE FLOOD OF 1886

KERN AND INYO STREETS AT THE CENTRAL PACIFIC TRACTS



During the spring of 1886, City Engineer Ingvarth Teilman and a brigade of volunteer flood fighters excavated a wide ditch between Kern and Inyo streets in a vain effort to divert the flood away from downtown. In this photo, Teilman is standing in the carriage.

Source: Ingvarth Teilman, The Historical Story of Irrigation in Fresno and Kings Counties in Central California (Fresno: Williams & Son, 1943), p. 20.

CHAPTER TWO

THE SAN JOAQUIN WATER MONOPOLY, 1850 TO 1900

The fight against irrigation laws . . . is a struggle on the part of the Cattle Kings and land monopolies . . . to retain their grasp upon vast bodies of public domain, and at the same time hold a monopoly of all the waters of natural streams.

--The Fresno Morning Republican, 1886¹

Landlocked in an arid yet fertile plain, farmers of Fresno turned to politics, courts, rallies and rifles in their fight to irrigate the plain between the San Joaquin and Kings Rivers. Initially, small farmers applauded the investors who imported British pounds and Chinese labor to build the great irrigation canals of the 1870's. But the enthusiasm soured when giant land and water corporations began wrestling for monopolies of entire river systems. Local editors reported the anti-monopoly crusade with all the dualism of a melodrama: with villains--the "Cattle Kings," sometimes called the "riparianists"--and heroes--the independent irrigators, sometimes called "the People." Ironically, anti-monopolists won the political battles but lost the war. By the turn of the century, both the San Joaquin and Kings Rivers were controlled by land and water monopolies powerful enough to open and close the headgates and spillways of the San Joaquin Valley.

VISIONARIES, 1850 TO 1878

Long before white men settled the San Joaquin Valley, irrigation was already a California tradition. In the 1770's, Franciscan padres experimented with ditch irrigation, most notably in the fields of Mission San Gabriel near the future pueblo of Los Angeles. Initially, irrigation served a holy purpose, for the Catholic liturgy required wine and vineyards required flooding. Padres learned to flood the fields by adapting the irrigation technology of their native Spain. One Spanish adaptation to California agriculture was the zanjero, a wooden headgate which regulated ditch intake with adjustable planks. The Franciscans also introduced plows, sickles, livestock, and water-powered grist mills.²

Upon the California Indians rested the labor of mission agriculture. As wards of the mission, Indian laborers excavated ditches, built diversion dams, and in their servitude acquired many of the arts of mission agriculture and ditch irrigation. Some historians have speculated that survivors of mission labor camps introduced irrigation to the Yokuts, the tribal group of the Southern San Joaquin Valley. This notion is based on the undated remains of primitive ditches in the delta area of the Kings River. Presumably, mission Indians made their way across the

Tehachapi Mountains and around Tulare Lake in the 1830's. However, students of the Yokuts find no evidence of irrigation in the Kings Delta. These tribes relied on hunting and gathering rather than farming. More likely, early ditches were excavated by white settlers who followed the Kings River down from mining camps in the 1850's.³

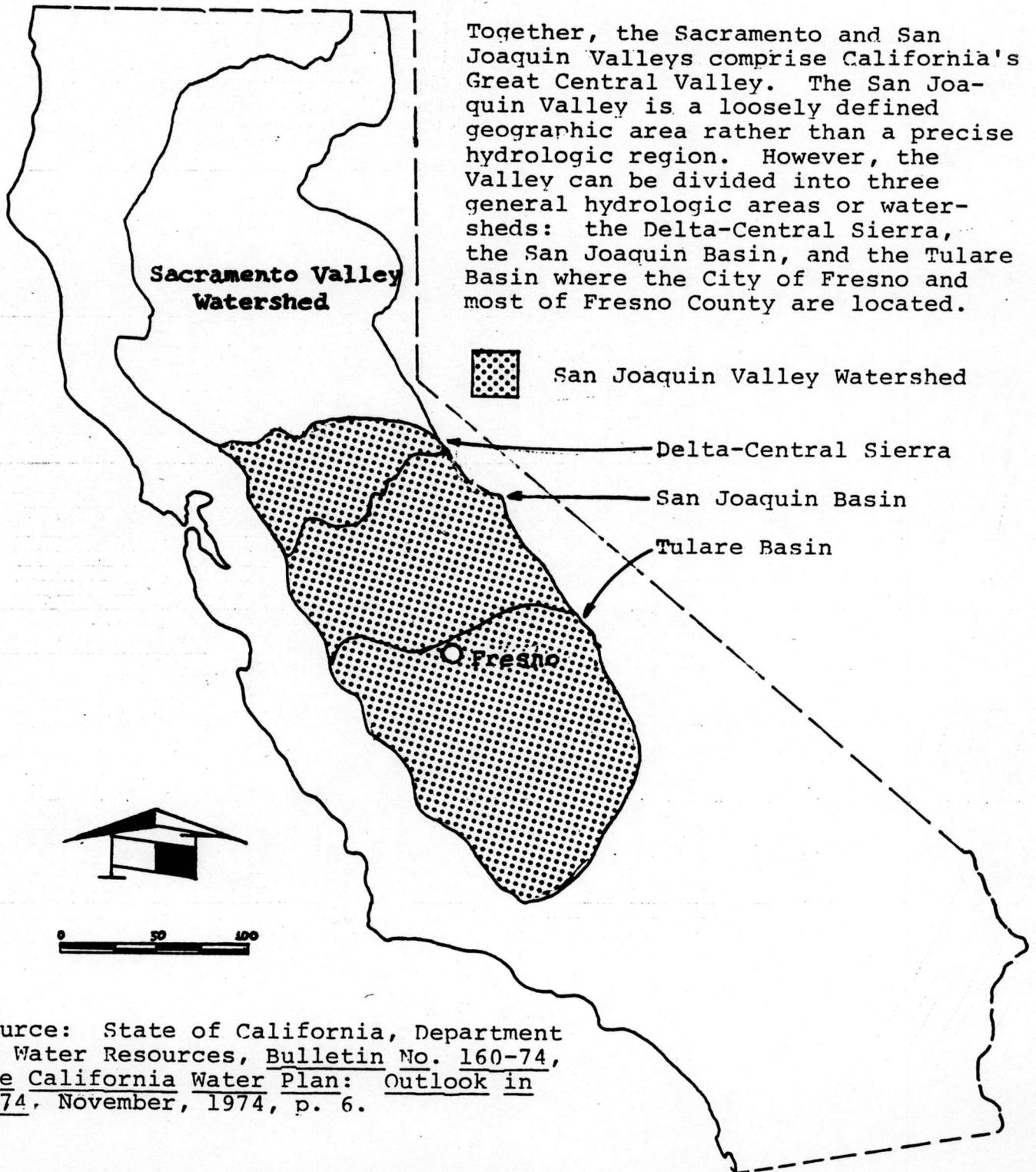
Irrigation of the San Joaquin Valley probably began with experimental ditches on the Kings River (see appendix C). In the 1850's, farmers at Centerville Bottoms (near modern Sanger) diverted the Kings through driftwood and cobblestone weirs into Byrd, Dennis, and Rice Ditches. Upstream, Jesse Morrow and John Cary attempted to cut a shallow ditch through several miles of rock bluffs in 1866. For the most part, these early experiments failed. Heavy rains in the winter of 1866-67 re-routed the river above the intake of the Morrow and Cary ditches and washed out makeshift weirs at Centerville Bottoms. After the flood of 1867, Jesse Morrow, John B. Sweem and other pick-and-shovel irrigators were willing to let the remains of their ditches become the groundwork for canal builders with horse-drawn scrapers, engineering skills, and capital.⁴

One of the most prophetic of these was "Captain" Anthony Y. Easterby: Napa capitalist, world traveler and engineer. Inspired by irrigation in Egypt, Easterby hoped to turn the free-flowing Kings River into the controlled Nile of the Western Hemisphere. In 1868, Easterby purchased 5,000 acres of weeds near Millerton at \$1.80 per acre. However, Easterby was no farmer. The first year's crop was stunted by dry weather and trampled by livestock. Undaunted, Easterby decided to experiment with irrigation on the dry, treeless plain between the San Joaquin and Kings Rivers. To supervise the project, Easterby found a lone sheepherder, one of the few attempting to eke out a living on the desolate plain.⁵

He was Moses James Church, a somber, God-fearing Baptist who had driven his sheep from the Midwest in 1852. In 1869, Church began on a small scale by extending an existing mill ditch to Francha (modern Fancher) Creek. The Kings River was diverted through the creek bed, across the main ditch at Centerville Bottoms, and onto Easterby's 2,000 acres near the future town of Fresno. With abundant water, the wheat crop responded with a bumper yield of 4,000 tons. Soon it was clear to Moses Church that his fortune would be made in the sale of water and land, not wool or wheat. In 1871, William S. Chapman and Fredrick Roeding joined Easterby and Church in signing the incorporation documents of what would grow into the most powerful water purveyor on the Kings River: the Fresno Canal and Irrigation Company.⁶

The incorporation of the Fresno Canal Company launched a quarter century of fevered canal construction. In 1873, Church and Company extended the southern-most branch of the Fresno Canal to Kingsburg and, in 1875, a northern branch reached Central Colony, five miles south of Fresno. By 1878, Church had supervised construction of almost one thousand miles of irrigation canals in Fresno County. Although Church was

WATERSHEDS of the SAN JOAQUIN VALLEY



Together, the Sacramento and San Joaquin Valleys comprise California's Great Central Valley. The San Joaquin Valley is a loosely defined geographic area rather than a precise hydrologic region. However, the Valley can be divided into three general hydrologic areas or watersheds: the Delta-Central Sierra, the San Joaquin Basin, and the Tulare Basin where the City of Fresno and most of Fresno County are located.

 San Joaquin Valley Watershed

Delta-Central Sierra

San Joaquin Basin

Tulare Basin

Fresno

Source: State of California, Department of Water Resources, Bulletin No. 160-74, The California Water Plan: Outlook in 1974, November, 1974, p. 6.

neither a man of Easterby's vision nor the first to irrigate the Valley, his vigorous supervision of the Fresno Canal and Irrigation Company demonstrated the profitability of large-scale ditch and canal irrigation. Thus, Fresno antiquarians have justifiably remembered Moses J. Church as "the father of irrigation in Fresno County."⁷

The Fresno Canal and Irrigation Company also grew by acquiring the canals of rival companies. One early rival was the Kings River and Fresno Canal Company, which began construction of the Gould Canal in September, 1871. The Gould Canal tapped the Kings River at a strategic bend in the Centerville Channel, only a mile above the head of the Fresno Canal. From the Centerville Channel, the canal diverted the Kings about twenty miles, crossing Fanshaw, Fancher, and Red Banks Creeks in flumes as long as ninety-six feet. During low-water periods, the Gould Canal virtually cut off the Fresno Canal and its neighbors downstream. However, Church and the Fresno Canal Company were not to be denied. Invoking the so-called "doctrine of appropriation," Church contended that the first claim to the Kings, his claim, was legally the superior claim. In 1875, the controversy ended in a lawsuit and a judicial decision which severely restricted the intake of the Gould Canal. Soon after, the Fresno Canal and Irrigation Company purchased the entire Gould Canal system and retained control until the dissolution of the Company in 1921.⁸

In the 1870's, the primary purpose of the Fresno Canal and Irrigation Company was to promote settlement on the investors' land. Most of the land along the several branches of the Fresno Canal belonged to the remarkable William S. Chapman, one of the Company's charter members. In 1868, Chapman had described the San Joaquin Valley as "an apparently barren, worthless plain, without trees, without water except it [sic] was obtained by digging or boring."⁹ A decade later, after the advent of the Fresno Canal, Chapman was quickly selling off this once worthless land in twenty-acre sections for \$250. "As long as the land in the San Joaquin Valley could be had for the asking," Chapman reasoned, "nobody wanted it. When one man was seizing portions of it as desirable, others thought it must be and followed suit."¹⁰ By the mid-Seventies, Chapman had amassed over a million acres, much of it in the San Joaquin Valley, thereby becoming one of the most successful speculators in the State.¹¹

At the same time, Chapman had become an infamous "land monopolist" in the eyes of small farmers and social reformers of the Seventies. Most notably, the success of Chapman's land speculation incurred the wrath of Henry George, national spokesman for redistributive taxation. In Poverty and Progress (1879), George would argue that land was the basis of wealth and, therefore, a single tax on land could equitably distribute the national wealth. Actually, George had laid out a similar contention eight years earlier in Our Land and Land Policy: National and State (1871). In this indictment of the "California land monopoly," George accused Chapman and other large speculators of hoarding what should be public domain;¹²

In all the new States of the Union, land monopolization has gone on at an alarming rate, but in none of them as fast as in California. . . . These lands were gobbled up by a few large speculators, by the hundred thousand acres. . . . The chief of these speculators (Chapman) now holds some 350,000 acres. The State has been made the cat's paw of the speculators.

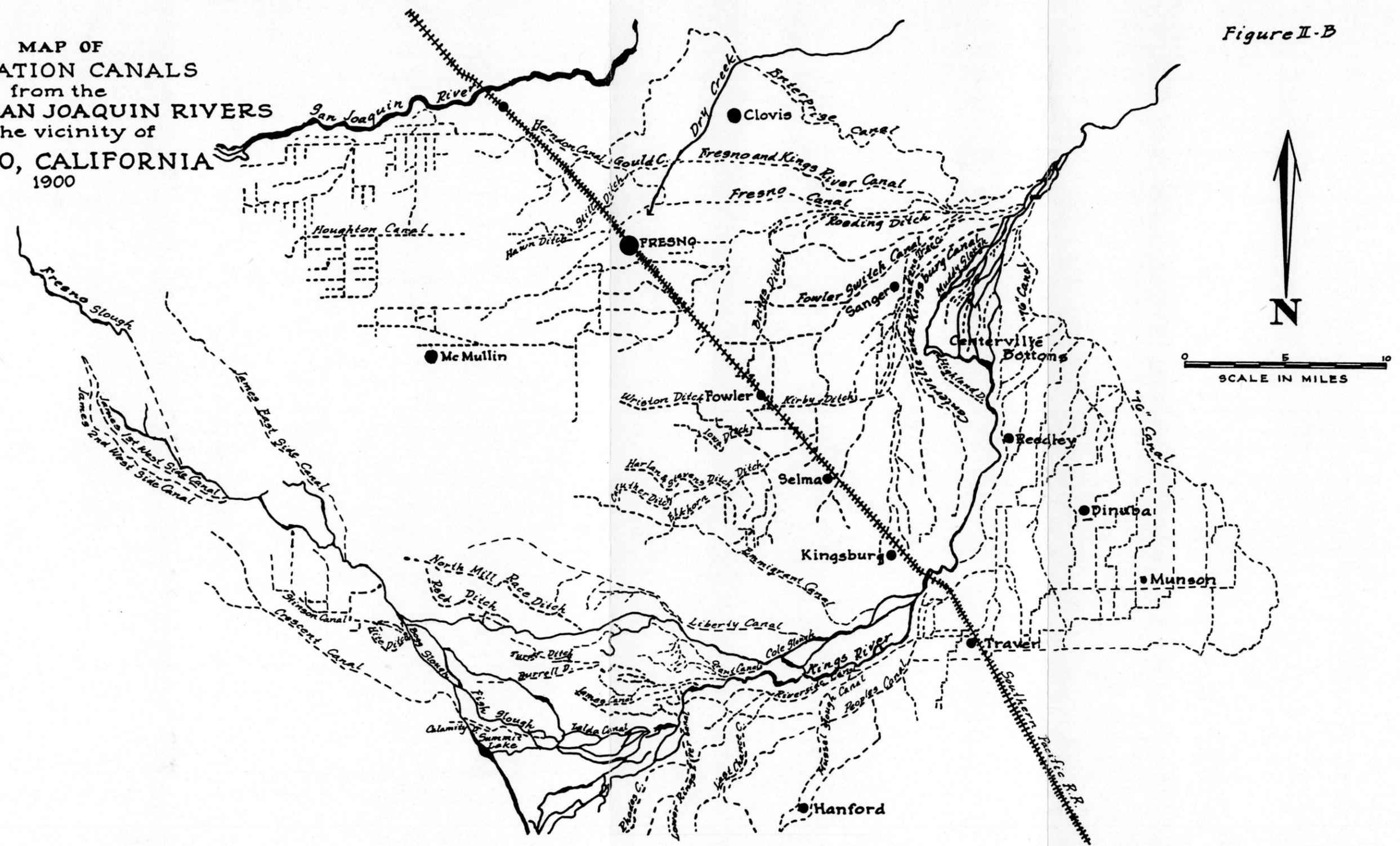
What George failed to recognize was the valuable functions performed by the speculator. In the Seventies, the San Joaquin Valley underwent a swift transition from frontier to farm. Government land policy as established by the Preemption Act of 1841 and the Homestead Act of 1862 sought to limit homesteaders to "family-size farms" by restricting the acquisition of large tracts of public land. However, before widespread irrigation, much of the Valley was suitable only for grazing or dry farming which required large acreage. The Jeffersonian ideal of a nation of independent yeomen, each with his forty-acre farm, was not economically feasible on the arid prairie. Speculators, however, found ways to circumvent government regulations. They were the middlemen, a convenient funnel through which government land reached settlers without the bothersome regulations of homesteading. Thus, the monopolization of the San Joaquin Valley was but a temporary stage and a familiar one on the American frontier. With the advent of canal companies, water would pass through a parallel stage of monopolization in the hands of middlemen.¹³

Henry George also charged that the monopolization of land and water would lead to sparse settlement and thereby retard urban development. Canal builders themselves realized that the San Joaquin Valley lacked the necessary marketing centers. They further realized that settlements would greatly increase the value of water and land. Thus, Chapman, Easterby, and Church encouraged close settlement in agricultural "colonies." An important prototype of the colony system was the so-called German Syndicate. In 1868, Chapman interested a group of German-American investors in 80,000 acres on the undeveloped Fresno plain. The land sold for about \$1.80 an acre in 160-acre plots. In 1872, the Syndicate bordered Fresno Station and, by the end of the decade, the land had appreciated fivefold. The successful German Syndicate laid the foundation for Central Colony (1875) and other agricultural colonies on the Fresno plain.¹⁴

Water, like land, passed from public domain to private ownership in the offices of absentee investors. However, water, unlike land, was scarce and, therefore, more easily monopolized. One of the most infamous of the so-called "water monopolists" was Heinrich Aldred Kreiser, alias Henry Miller. Miller became a California legend and his career epitomized the rags-to-riches success story of the American West.

Born in Brackenheim, Germany in 1827, Kreiser immigrated to New York at age twenty. Soon the adventurous immigrant caught gold fever and

MAP OF
IRRIGATION CANALS
from the
KINGS and SAN JOAQUIN RIVERS
in the vicinity of
FRESNO, CALIFORNIA
1900



- ~LEGEND~
- Rivers and other natural waterways.
 - - - Canals and ditches
 - Cities and towns

Based on Plate XXIV of U.S. Dept. of Agriculture Bul. 100 Office of Expt. Stations.

bought a ticket for California from a shoe salesman named Henry Miller. Because the shoe salesman's ticket was nontransferable, Heinrich Kreiser assumed the name on the ticket and arrived in San Francisco as Henry Miller. Beginning with six dollars in his pocket, Henry Miller swiftly climbed the occupational ladder from butcher to sausage maker to meat retailer and wholesaler. As a wholesaler of beef, Miller watched for the opportunity to become a producer, a cattleman. The opportunity arrived in 1857 when Miller purchased 7,000 head of cattle and 8,835 acres in the vicinity of the future town of Los Banos, Merced County.¹⁵ Soon he met the equally successful German-American cattleman, Charles Lux. In 1858, the two ranchers formed the Lux & Miller corporation, later changed to Miller & Lux. Charles Lux operated the city business from San Francisco while Miller supervised the ranches from the Los Banos area. The partners promised to buy, never sell, land. After thirty years of territorial expansion, rumor had it that Miller and Lux could drive their cattle from Mexico to Oregon and camp every night on their own land.¹⁶

In the 1860's, Miller & Lux Corporation ranches had spread south and east from Merced County, often on both sides of the San Joaquin River. Henry Miller had been careful to secure legal right to the waters of the San Joaquin by purchasing, when possible, land riparian to the river: that is, land adjoining the banks of the river. In 1871, William Chapman and a group of San Francisco investors approached Miller with their plans to build a "great canal" through Miller & Lux land. This was to be a navigable canal, capable of carrying steamboats and barges from Tulare Lake, through the Fresno Slough, down the San Joaquin River to San Francisco Bay. In addition, the investors planned to dam the San Joaquin at the Fresno Slough and irrigate Miller and Lux pastures from Firebaugh to Kerman. The navigable canal was promoted as a "white man's canal," to be built without the Chinese laborers used so effectively by the Central Pacific. Henry Miller encouraged the project but withheld his financial support knowing well that the "great canal" scheme was too grandiose and ill-conceived to take freight and passenger traffic away from the railroad.¹⁷

In 1871, the San Francisco investors incorporated their interests as the San Joaquin and Kings River Canal and Irrigation Company. Soon it was apparent that the Company was ninety percent promotion and ten percent construction. By 1874, the company was on the verge of bankruptcy and, two years later, Miller & Lux eagerly bought out the dam and half-finished canal for about one-third the original investment. Much of Chapman's success with the Fresno Canal was negated by the financially disastrous San Joaquin Canal. In 1876, when Miller & Lux acquired the San Joaquin Canal Company, Chapman forfeited his large west-side ranch to Scottish creditors.¹⁸

Henry Miller compensated for previous mismanagement with zealous personal supervision. Miller, on horseback, covered with dust, became a familiar sight along the thirty-mile stretch of construction from

Mendota to the modern site of Los Banos. The new Miller & Lux enterprise retained the San Joaquin and Kings River Canal Company name but the Kings River canals never materialized. Instead, Miller concentrated his resources on completing the section from the river to his ranches in Merced County. The project became known as the Tulare Lake or West Side Canal.¹⁹

Miller was one of the few canal builders with foresight enough to secure a clear legal claim to the land adjoining the river before construction. Because his corporation owned little land adjoining the Kings, Fresno Slough, or Tulare Lake, Miller abandoned the Tulare Lake-Fresno Slough segment of the original plan. Miller also abandoned the original plan for a white man's canal. In 1877, gangs of Chinese and Mexicans joined American labor camps. In all, Miller supervised some four hundred laborers and raised about one-quarter million dollars to complete the Tulare Canal.²⁰

Although promoters continued to push plans for a navigable canal from San Francisco to Tulare Lake, the Tulare Canal never became a commercial highway. Instead, the San Joaquin Canal Company (a subsidiary of Miller & Lux since 1876) sold water to grain farmers who flocked to the banks of the canal in the Eighties. The Canal Company charged these settlers \$2.50 an acre foot for water from the new canal. Meanwhile, the California Grange and other farmer groups accused "Cattle King" Miller of selling "public domain" (i.e., the San Joaquin River) for unfair profit. Joining the grass-roots protest, Valley ranchers further accused the Cattle King of trampling on the legal rights of his rivals. Many of these accusations were borne in Miller's frequent law suits over the ownership of land and water. In one such law suit, plaintiff attorney Delphin M. Delmas captured Miller's reputation with an icy caricature:²¹

The love of rule, a dominant passion in some men, is in him [Henry Miller] developed to an almost abnormal degree. . . . What mattered to him that others had legal rights in his property? They were treated as intruders--to be cajoled into subserviency and crushed into submission.

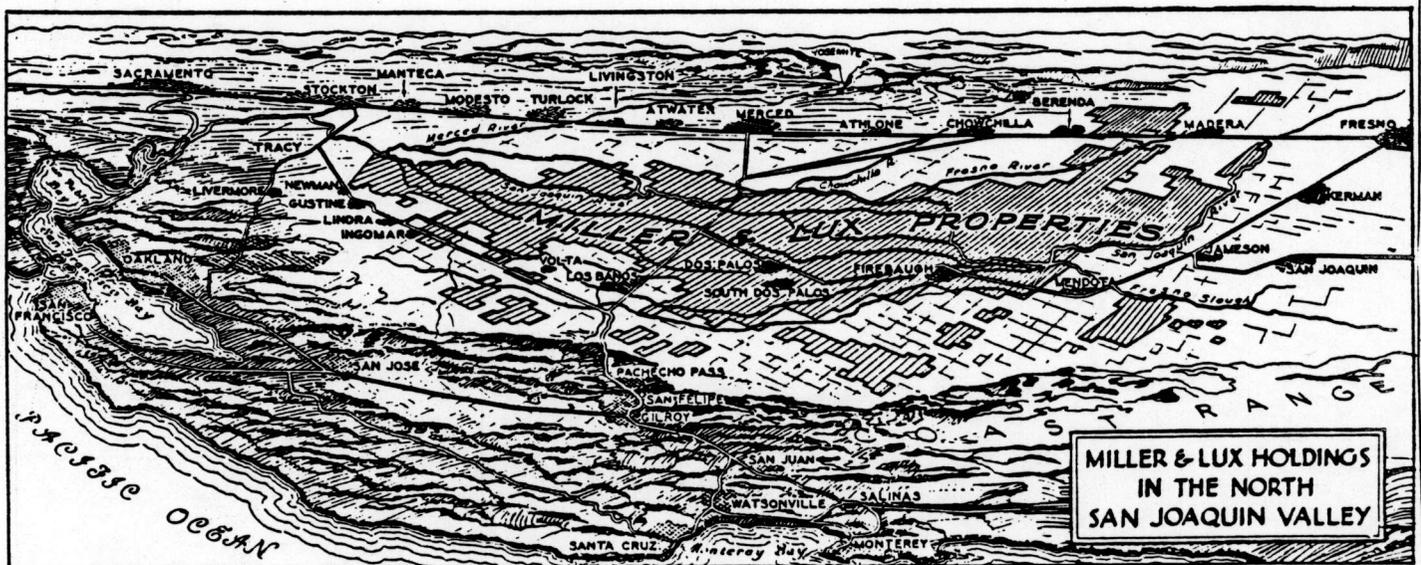
Miller's infamy as the tyrannical Cattle King fueled his notoriety as California's water monopolist par excellence. Much of this reputation came from his role as plaintiff in the controversial Lux v. Haggin case (1877-1886)--a decade-long struggle over water rights to the Kern River. Miller, as a landowner in the Kern delta, contended that upstream irrigators had no legal right to divert the River. Here and in subsequent litigation over water rights, Miller was portrayed as a tight-fisted monopolist who hoarded public domain for private profit.²²

Despite public ridicule, the notorious water barons of the Seventies were men of great vision, among the first to recognize the agricultural potential of the arid plains. As canal builders and speculators, they

FIGURE II-C

MILLER & LUX HOLDINGS IN THE SAN JOAQUIN VALLEY

ABOUT 1880



Source: Wallace Smith, Garden of the Sun (Fresno: California History Books, 1960), p. 197.

funneled water and land to the tide of settlers which flooded the San Joaquin Valley in the Eighties. These visionaries--Henry Miller, William Chapman, Moses Church, and A. Y. Easterby--were quick to capitalize on their realization that whoever controlled the rivers would control the lasting natural wealth of the San Joaquin Valley.

ADVERSARIES, 1870 TO 1886

In the 1870's, canal companies grew quickly but with considerable opposition from cattlemen, downstream landowners, rival companies, and the irrigators themselves. Canal builders fought their first battle with the cattlemen of the San Joaquin plains. A few cattlemen such as Henry Miller irrigated their lands to improve the quality of their stock. However, many cattlemen simply drove their herds from one green spot to another with no clear claim to water or land. Speculators claimed the land and sold most of it to farmers who, in turn, plowed it, fenced it, and encroached upon the cattleman's domain. Canals also restricted the roaming herds. Thus, cattlemen fought canal companies as they fought pro-fencing legislation and any other attempt to close the open plain.

Antagonism grew as cattle fell into ditches and trampled crops. The cattlemen's cause was championed by Thomas Fowler, owner of the "76" brand. In the early Seventies, Fowler represented Fresno County in the State Senate. As State Senator, Fowler led the opposition to legislation which held cattlemen financially liable for property damaged by their herds. These pieces of anti-cattle legislation became known as "no fence laws," for they hoped to protect crops and canals without costly fencing. While Fowler held back "no fence" legislation, irrigators went to great expense to import timber and other fencing materials.²³

As a shepherd, farmer and canal builder, Moses Church became a visible target for irate cattlemen. After many threats, cattlemen razed his barn and scattered his sheep. Church also testified that attempts were made on his life. Yet, the controversy never reached the violent proportions of a legendary range war between cowboys and sod-busters. A large part of the feud was resolved politically when Church and Easterby helped Lindsay Tipton defeat Fowler in the State senatorial election of 1874. In 1876, State Senator Tipton pushed through a no-fence law which stipulated that trespassing cattle could be confiscated and auctioned off to pay for property damage. By the late Seventies, canal companies and farm colonies had decidedly won the range. Subsequently, many large, unfenced herds were driven out of State.²⁴

Most irrigators soon realized that a more pernicious foe than an armed cattleman was a thirsty neighbor with dry land. In the 1860's, irrigation in the San Joaquin Valley required a minimum amount of red tape. The irrigator would simply file a claim to the river with the county clerk and nail a duplicate on a tree near the headgate of his ditch. Claims were informal and ambiguous.²⁵

Notice is hereby given that----- -----claims by the priority of location, use, and appropriation the first right to the use of water running in the San Joaquin River for the purpose of irrigation. . . .

The river was sometimes claimed in "cubic inches," "square inches," "miner's inches,"²⁶ or just plain inches. Owners of small ditches filed claim to "all the water flowing here," 200 (cubic?) feet under a four-inch pressure," "200 cubic feet running (?) water," or, modestly, "all the water running in the river."²⁷ Clearly, enough water was claimed in the 1860's to submerge the entire State.

For more than a decade, irrigators claimed what they pleased with no legal procedure to insure their claims and no legal restrictions to deny them. However, dry weather in 1876 forced the claims into the courts as ditches ran dry and neighbor sued neighbor. With the Civil Code of January 1, 1873, the State Legislature attempted to guide the courts with a half dozen provisions for the acquisition of water rights. Section 1411 sanctioned the appropriation of water for a "beneficial use." Section 1414 endorsed the heretofore unwritten law that the first appropriator had the superior claim. And Section 1415 offered some guidelines for posting and filing claims. Still the ambiguity persisted. Miller & Lux, for example, appropriated the San Joaquin River through the Aliso Canal with no clear claim. The San Joaquin Canal and Irrigation Company claimed "all the water in the river at Firebaugh" with no regard for rival claimants. Meanwhile, the California Pastoral and Agricultural Company defended its claim by the unwritten and unspecified "right of constant use."²⁸

The ambiguity of claiming procedure reflected the ambiguity of California law. The California Legislature had founded water rights on three contradictory legal traditions: Spanish-Mexican, Mining, and English common law. Spain, like California, is a mountainous country with arid valleys well-suited to ditch irrigation. The first irrigators of California, the mission padres, imported the Spanish tradition of public or governmental ownership which forbade private or corporate ownership of water. It was, therefore, difficult for a downstream water user to prohibit upstream appropriation on the basis of superior claim to the river. In the vicinity of Valencia, on the Mediterranean coast of Spain, this tradition of water in public trust contributed to the development of one of the world's most productive applications of canal irrigation. Similarly, the public-trust tradition encouraged irrigation in Spanish California. Although treaty and statute bound the State of California to respect property rights acquired under Spanish-Mexican law, the Spanish public-trust tradition retained little influence in the courts of Anglo California.²⁹

A more influential tradition of water appropriation developed in the mining camps of the Sierra foothills. In 1849, miners flocked to Fort Miller on the upper San Joaquin to dam and divert feeder streams

in search of gold.³⁰ River and bar miners developed techniques such as "ground sluicing" and "booming" which used the current to wash the lighter sand away from the heavier gold. When the creeks flooded or the creeks went dry, panning stopped. Thus miners, like the Spanish Californios, treated the streams as public domain to guard against an individual or corporation who might use a legal claim to hoard the river. Generally, the common law enacted in a miner's saloon respected the rights of appropriation on a first-come-first-served basis. The first miner on a river had superior claim to latecomers who might dam and divert the river upstream. In 1851, the California State Legislature enacted a law sanctioning mining customs and, to an undetermined extent, sanctioning the first-come-first-served tradition of water appropriation.³¹

But the new State broke with its Californio and mining heritage by adopting the common law of England: a legal credo which became the most influential yet least climatically fit of California's judicial traditions. In 1850, the California Legislature decreed that "the common law of England, . . . shall be the rule for decision in all courts of the State."³² English common law embraced the doctrine of "riparian rights": an expression derived from the Latin word ripa, meaning the banks of a stream. Owners of land on the bank of a stream, by the riparian doctrine, had legal right to the natural flow of that stream "undiminished in quantity" by upstream appropriators.³³ Owners of land not "riparian" to the stream had no legal right to appropriate water. In foggy, wet England, the main purpose of a ditch was to drain the land, to run water out of the swamp or bog and into the river. Thus, the riparian doctrine had real utility, for it protected a downstream landowner from floods caused by levees and runoff upstream. However, the San Joaquin Valley had the opposite problem. Irrigators wanted to flood the land, not drain it.

In the 1880's, the riparian doctrine became a pillar of the water monopoly. By purchasing land riparian to the San Joaquin River, Miller & Lux Corporation denied farmers on the Fresno plain the right to appropriate. Similarly, owners of the Laguna de Tache Ranch on the Kings Delta (see appendix C) claimed downstream riparian rights to the Kings River and portions of the Fresno Slough. Cut off to the north and south, landlocked Fresnoans defended their right to appropriate by denouncing English common law and the so-called "riparianists." In 1886, Valley farmers organized the Fresno Caucus of the Anti-Riparian League to lobby for publicly-owned irrigation districts, anti-monopoly legislation, and repeal of the hated doctrine of riparian rights. The manifesto of the 1886 Fresno convention of the Anti-Riparian League was particularly melodramatic:³⁴

The streams which traverse these valleys have their heads in perpetual snow. Riparian ownership denies their flow to the thirsty earth and condemns it to evaporation in the thankless sea. . . . The English common law doctrine of riparian ownership is repugnant and inapplicable to the physical conditions of this state. . . .

By the turn of the century, most of the western states--Idaho, Montana, Wyoming, Utah, Nevada--had rejected the riparian doctrine of English common law. However in 1886, the year of the Fresno Anti-Riparian convention, the courts of California strengthened the riparian doctrine in the landmark Lux v. Haggin decision. Ironically, it was in the San Joaquin Valley--where irrigation had the most potential--that the judiciary re-asserted a landowner's riparian right over an irrigator's appropriative right.³⁵

LUX V. HAGGIN, 1877 TO 1886

On September 28, 1850, Congress welcomed nineteen-day-old California into the Union with a gift of about two million acres of swamp. Under the provisions of the Swamp Land Act, California was obliged by Congress to promote construction of "the necessary levees and drains, to reclaim the swamp and overflow lands" by what amounted to a money-back guarantee.³⁶ The State promised to reimburse the \$1.25 an acre purchase price if the buyer drained the swamp. Here was an opportunity for men with capital to lay claim to choice sections of alluvial plain and land speculators rushed in for the spoils. Among the shrewdest of these was Henry Miller who maneuvered the Legislature into granting his corporation about 100,000 acres of swamp where the Kern River periodically flooded into Tulare Lake. By acquiring this vast but unassuming swamp, Henry Miller and Charles Lux had acquired the strategic downstream riparian rights to the Kern River.³⁷

Meanwhile, another pair of notorious "cattle kings," James En Ali Haggin and his partner Lloyd Tevis, like Charles Lux, was a San Francisco capitalist and landowner who had the good fortune to team up with an adroit, land-hungry rancher. In the mid-1870's, Haggin and Tevis dammed the Kern at Bakersfield and constructed the Calloway Canal to dry, non-riparian land. Miller and Lux accused Haggin and Tevis of "stealing" the Kern; headgates were smashed and armed guards patrolled the levees. In the dry year of 1877, an injunction brought the hostility off the levees and into the Superior Court of Kern County.³⁸

The drought of 1877 flooded the courts with water-right litigation. Judges confused by the contradictory nature of California law looked to the well-published Lux v. Haggin trial for the verdict of their own cases. No matter what the verdict, there would be windfalls and wipe-outs all over the State. But there were more appropriators than riparianists, and therefore, the press reported the fight between the two giant corporations of the San Joaquin as a struggle between the water monopoly, Miller and Lux, and common-folk irrigators, Haggin and Tevis.³⁹

On the attack, Henry Miller gathered the colorful pioneers of Kern County to testify that the river had historically run a well-defined course through the channels of the Miller and Lux swamp. In this way, Miller and Lux claimed riparian rights to the Kern by the doctrine of

FIGURE II-D

HENRY "CATTLE KING" MILLER
AT AGE FORTY
ABOUT 1867



Source: Edward F. Treadwell, The Cattle King (Fresno: Valley Publishers, 1931).

English common law embraced by the California Legislature in 1850. On the defensive, Haggin and Tevis contended that the San Joaquin Valley was a semi-arid plain, not foggy and wet England; therefore, the common law of England was a climatically unfit judicial principal. Furthermore, the California Legislature had sanctioned a miner's right to appropriate in 1851 and reinforced the appropriative tradition in the Civil Code of 1873. While Miller was visiting his birthplace in Germany, Haggin and the law of appropriation won the first round. Miller returned from Germany enraged and a decade of suits, injunctions and appeals followed.⁴⁰

Finally, in 1886, the California Supreme Court ruled, in a four to three decision, in favor of Miller and Lux and the riparianists. Although the press indicted the Supreme Court for cowering before the water monopoly, Justice Elisha W. McKinstry wrote the majority opinion as if the court had joined the anti-monopoly crusade:⁴¹

The rule, so called, of appropriation would result in time in a monopoly of all the water of the State by comparably few individuals, or combinations of individuals controlling aggregated capital, who either apply the water to purposes useful to themselves, or sell it to those from whom they had taken it away,

On the other hand, the three dissenting justices forfeited their opportunity to make a strong anti-monopoly stand. Instead, dissenting Justice Erskine M. Ross was more concerned that riparian landowners would allow the rivers to run into the sea rather than share the wealth with potential competitors:⁴²

The common law is supposed and has been said to be the perfection of human reason, but it would be the very reverse of this to hold that the waters of the streams of California must continue to flow in their natural channels . . . while orchards, vineyards, and growing crops of immense if not incalculable value perish from thirst.

However, the victorious Henry Miller had no intention of hoarding the Kern. Ruthless in battle but magnanimous in peace, Miller realized his victory would be fragile if he offered no concessions to his vanquished rival. Miller admitted he had secured claim to more water than he could effectively use on his reclaimed swamp. After all, water was valuable only during the dry season, for in the fall and spring the delta flooded. Thus, Miller offered Haggin and Tevis two-thirds of the Kern in exchange for building a storage reservoir at Buena Vista Slough. So successful was the Lux v. Haggin settlement that it became a model for non-aggression pacts between warring canal companies on the Kings River.⁴³

PUBLIC CANALS, 1873 TO 1900

While Miller shook hands with Haggin over the compromise settlement of 1888, discontent brewed among the irrigators of the San Joaquin plains. To the California Grange, the Anti-Riparian League and other farmer groups, Miller's victory proved the judiciary was on the leash of the water monopoly. The only way to sever the leash, so it seemed, was to return the rivers to public ownership through the State's powers of eminent domain. Specifically, pro-irrigation forces contended that the State should sanction the creation of publicly-owned irrigation districts empowered to float bonds and condemn privately-owned canals.

The notion of publicly-owned irrigation districts had grown with the canal projects of the Seventies. Even before the completion of Miller's Tulare Canal, Valley farmers protested that the San Joaquin Canal Company was a too-powerful monopoly, an "octopus" whose wet tentacles controlled the San Joaquin at strategic points. In 1873, members of the Farmers' Grange of the West Side lobbied in Sacramento for public ownership of the Tulare Canal.⁴⁴ Newly elected Governor Newton Booth endorsed a Granger petition for public ownership and then was surprised to receive, on December 9, 1873, a memorial from the San Joaquin Canal offering to sell out. Little did the West Side Grange realize the high price of water (about \$2.50 an acre foot) reflected the Company's struggle to break even, not the exorbitant profits of a too-powerful monopoly. Three years later, the San Joaquin Canal Company was on the verge of bankruptcy and sold out to Miller and Lux Corporation.⁴⁵

By 1875, chapters of the California Grange had gathered sufficient support in Sacramento to pass an irrigation bill, signed into law by Governor William Irwin on April 3rd. The new law created the West Side Irrigation District with the power to float bonds for canal construction. The district proposed a 190-mile canal capable of irrigating 500,000 acres from Tulare Lake to the Sacramento-San Joaquin Delta. Truly, the District's proposal was every bit as ill-conceived and grandiose as the near-bankrupt Tulare Canal (absorbed by Miller and Lux in 1876). Nevertheless, the 190-mile canal scheme was endorsed by the pliable Legislature and then ratified in a popular election. Soon it was evident that the project would not leave the blueprints. Judge S. B. McKee of the Third Judicial District ruled that the formation of public irrigation districts violated property rights protected by the State Constitution. West Side Grangers would wait a decade before the Legislature could create more durable irrigation districts.⁴⁶

The legal roadblock set tempers afire. In July, 1875, local editors accused the water monopoly of manipulating the courts and launched a state-wide campaign to return the rivers of California to public domain. On July 28, 1875, the Democratic Fresno Expositor proposed that the State disavow all private and corporate claims to water by dividing California into irrigation districts under local control:⁴⁷

. . . it is the duty of the Government to preserve the water of the State for irrigation and other public uses, instead of permitting them to be made the means of extortion and monopoly.

The Expositor also dutifully reported the public ownership sentiments of the California Grange. In the fall of 1875, J. M. Ainsa of the Fresno Grange, Number Two, delivered an impassioned speech imploring the Grangers to stand up to the water monopoly.⁴⁸

Those speculators, who without lands themselves have laid claim and possessed themselves of the waters of irrigation, . . . hold a Damocles sword--a perpetual threat of discontinuing the supply and bringing the farmer in one single season to the gates of bankruptcy. I predict that our farmers, rather than put themselves at the mercy of an unjust monopoly, will remain poor

After warning farmers of the pernicious water monopoly, Ainsa went on to indict Henry Miller's San Joaquin Company in particular:⁴⁹

The Great San Joaquin Canal Company is a standing example, . . . the farmer knows he is at the mercy of a bloodthirsty hydra called a corporation.

During the decade of the Lux v. Haggin suit, 1877 to 1886, pro-irrigation groups revived the notion of irrigation districts as a means to break the water monopoly. In 1884, farmers convened in Riverside to declare a "war against riparianism," the doctrine which restricted irrigation by granting landowners sole right to the flow of streams bordering their land.⁵⁰ Two years later, so-called anti-riparianists convened in Fresno and San Francisco. From these conventions grew the State-wide Anti-Riparian League, a loose organization of pro-irrigation groups bound together by a common hatred of the riparian doctrine and support for locally-owned irrigation districts.⁵¹

The San Joaquin Valley's foremost exponent of irrigation reform was Samuel Moffet of Kingsburg, director of the Centerville and Kingsburg Irrigation Company, Harvard graduate and nephew of Samuel Clemens (Mark Twain). Moffet not only preached, he acted. In 1883, Moffet had settled his differences with the rival Fresno Canal Company by dynamiting their dam on the Kings River. Thereafter, Moffet wielded a pen which proved equally explosive. In the mid-Eighties, newspaper czar William Randolph Hearst hired Moffet to report the anti-riparian campaign and agitate for irrigation reform. In various editorials, 1884 to 1886, Hearst papers defended public irrigation districts as a means to break up large land holdings by opening ranch land to cultivation. Furthermore, public canals would open the plains to new crops and make dry farming obsolete.⁵²

Anti-riparianists in southern California hoped that irrigation reform would contribute to the phenomenal land boom in a decade when the population of Los Angeles County would triple.⁵³ In the Eighties, prominent southerners included L. M. Holt--publicist, editor, and founding father of Pomona, California; and J. De Barth Shorb--co-founder and

developer of Pomona, Pasadena, and other irrigation colonies in southern California. In 1886, at the San Francisco anti-riparian convention, southern Californians demonstrated their influence by selecting J. De Barth Shorb Chairman of the Executive Committee.⁵⁴

Over the protest of anti-riparianists, the California Supreme Court upheld the riparian doctrine in its controversial Lux v. Haggin decision of 1886.⁵⁵ In that year C. C. Wright, a Modesto attorney, was elected to the California Assembly on the campaign promise that he would right the wrongs of the State courts. True to his constituents, the Modesto Assemblyman proposed a bill providing for the organization of irrigation districts in which small farmers would find the competitive edge to undo the water monopoly. The irrigation bill won the support of Governor George Stoneman who called a special session of the Legislature to push through the so-called Wright Act in March, 1887.⁵⁶

The Wright Act of 1887 became the enabling legislation for California's network of public corporations known as irrigation districts. As children of the State, irrigation districts had authority to condemn land, issue bonds and levy taxes to pay for them. The first districts formed under the Wright Act were organized by Assemblyman Wright's constituents in 1888, the Modesto and Turlock Irrigation Districts. However, opposition to public canals remained fierce and influential, and the Modesto District plunged into more than two decades of prohibitive litigation. Large riparian landowners allied with dissident taxpayers contending that the Districts' powers of eminent domain amounted to "communism and confiscation."⁵⁷ Finally, in 1896, the United States Supreme Court upheld the constitutionality of the Wright Act in Bradley v. The Fallbrook Irrigation District.⁵⁸ The following year, the California Legislature went on to revise and strengthen the Wright Act, its constitutionality having been affirmed by the highest court in the land.⁵⁹

Despite costly litigation, the Wright Act unleashed another decade of vigorous canal construction. In 1888, the Alta Irrigation District on the Kings River became the first district to receive water from a confiscated canal. In southern California, the Wright Act became gold in the pockets of promoters who had irrigated some 150,000 acres by 1889. Ironically, the Turlock District, first to incorporate, received no water until 1900. Modesto farmers were tied up in law suits and blueprints until 1903, sixteen years after the District's formation. Where private canal companies were well entrenched, irrigators waited even longer. The Fresno Canal and Irrigation Company, incorporated by Church and his associates in 1871, remained the largest water purveyor on the Fresno plain until the canals were purchased by the Fresno Irrigation District in 1921.⁶⁰

LAGUNA DE TACHE AND THE NARES COMPROMISE OF 1897

Just who were the so-called water monopolists in need of government regulation? Inland appropriators in the vicinity of Fresno accused the

ranchers of the Kings Delta of using archaic legal doctrines to bind the river to its natural, wasteful course.⁶¹ Riparian landowners insisted that the dubious law of appropriation offered an opportunity for landless canal companies to sell public streams for private profit while riparian land downstream remained dry.

During the decade of Lux v. Haggin, 1877 to 1886, judges of the Superior Court of Fresno County reluctantly enjoined canal companies from appropriating the Kings River but generally looked away when the injunctions were ignored. However, with the riparian victory of 1886, the balance of power shifted and, suddenly, canal companies were in jeopardy. By the 1890's, the legality of digging a ditch was so complex that canal companies employed more attorneys than engineers. Ironically, lawsuits aimed at the nebulous monopolies accelerated the monopolization of water and wealth in the San Joaquin Valley. Only a few of the hardest companies would survive into the twentieth century.

While Miller fought Haggin for the Kern, an equally fierce decade of litigation raged between the Laguna de Tache Rancho and the upstream appropriators of the Kings. In 1844, the Mexican government had granted Manuel Castro the delta area of the Kings River known as "the ranch by the lake of the Tachi Indians" or the Laguna de Tache Rancho.⁶² In 1866, Castro had sold the rancho to Jeremiah Clarke who, in turn, subdivided the property and sold portions to land speculators and wealthy ranchers such as James "Cattle King" Haggin. Historically, the 48,000 acres of Laguna de Tache had been the swamp and overflow lands of the Kings.⁶³ However, beginning in the late 1860's the new owner had constructed dams, levees and canals to drain the swamp and turn the annual floods into dry pasture. In 1873, Laguna ranchers had excavated Grant Canal, later extended across Murphy Slough by the Vanderbilt Canal Company.⁶⁴

The drought of 1876-77 ushered in forty years of litigation between upstream and downstream appropriators of the Kings. Armed with unimpeachable riparian rights, the Laguna de Tache Rancho became Fresno County's most aggressive plaintiff. When they were not suing each other, the Laguna ranchers collectively forced upstream appropriators to abandon half-finished canals and dismantle existing dams, locks and headgates. On July 21, 1885, the Superior Court of Fresno County forever enjoined the Fowler Switch Canal Company from diverting the Kings in order not to usurp the water legally belonging to the Laguna de Tache Rancho. Similarly, on November 4, 1889, the court decreed that the non-riparian land of the Alta Irrigation District had no right to the Kings.⁶⁵ By 1890, the Superior Court of Fresno County had heard over forty such suits between the Laguna ranchers and the canal companies on the Fresno plain. In all, the Laguna de Tache Rancho participated in approximately 135 separate suits over water rights to the Kings River.⁶⁶

While the Laguna litigation forced small canal companies into bankruptcy, the largest appropriators continued to sell land and water by

virtue of political influence and shrewd lawyers. In the 1870's and 1880's Moses Church had been selling so-called "perpetual rights" to the Kings as if his Fresno Canal & Irrigation Company was the sole proprietor of the river. For \$800, farmers bought perpetual right to one cubic foot per second of the river, about two acre feet a day. In addition, the Fresno Canal Company charged \$100 a year for canal maintenance. Meanwhile, the Emigrant and Centerville & Kingsburg Canal Companies charged only \$500 for rights to the same amount of water. These upstream canal companies claimed the rights of appropriation but owned little riparian land. On the other hand, the Laguna de Tache ranchers owned land riparian to the river from Kingsburg to the Fresno Slough, almost the entire north fork of the Kings.⁶⁷

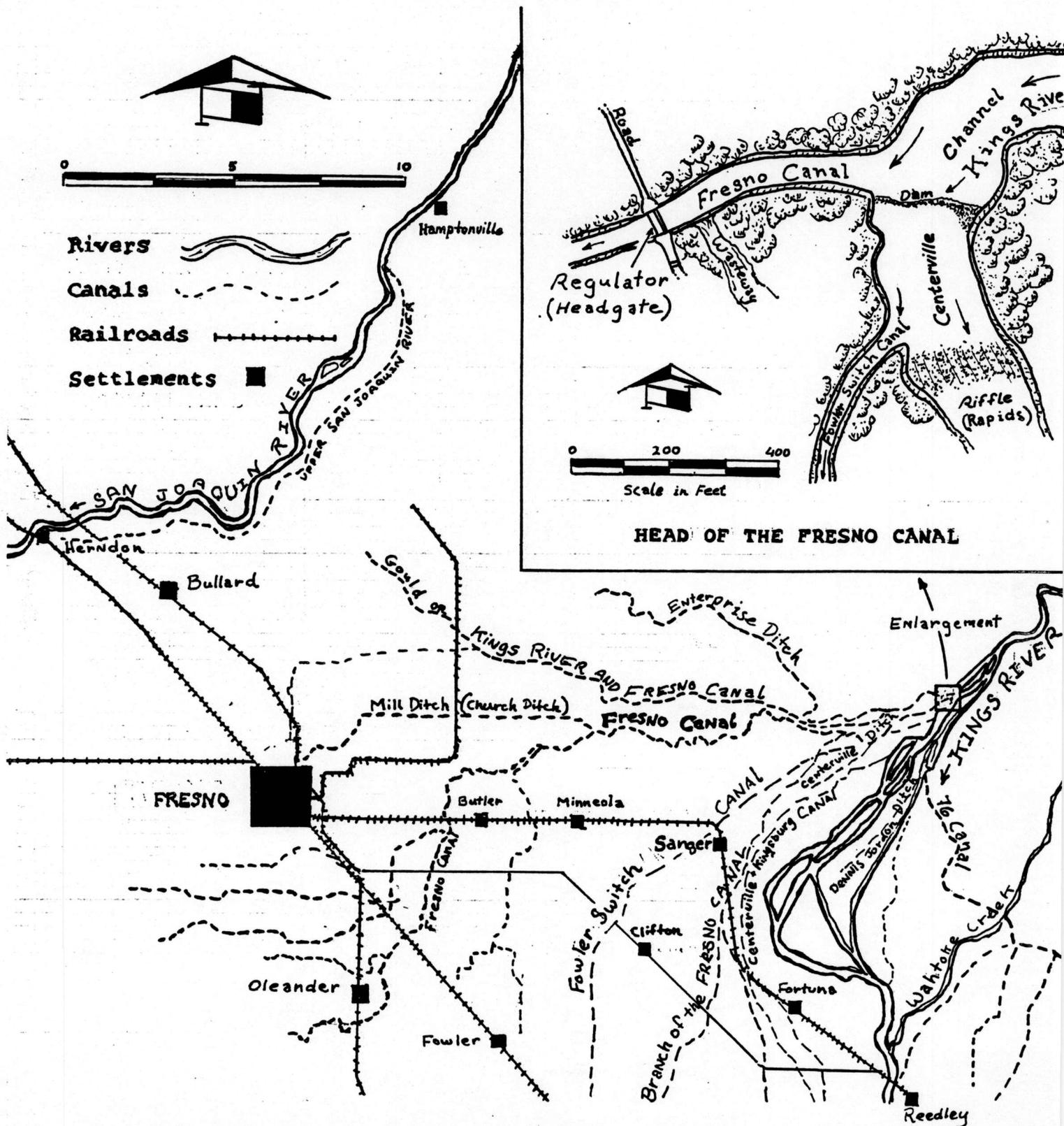
In the dry year of 1877, Jeremiah Clarke and the Laguna de Tache ranchers filed suit against Moses Church and the Fresno Canal Company. After a brief skirmish, the Court ordered Church to fill in the head of the Fresno Canal. But Church had made too many promises. To comply with the Court's injunction would be to violate hundreds of contracts with those who had laid out \$800 for "perpetual rights" to the River. To fulfill his contract obligations would be to face the charge of shedding the authority to close the Fresno Canal. According to Church, the Fresno Canal & Irrigation Company merely maintained the canals owned by the colonists on the Fresno plain.⁶⁸

With a powerful block of voters behind Church, the elected judges of Fresno County were reluctant to force the issue. By 1879, the annual floods had returned to the Kings and canal construction resumed despite injunctions. Superior Court judges shifted ground and looked helplessly to the California Supreme Court for the final verdict of Lux v. Haggin. Meanwhile the Enterprise, Centerville, and Fresno Canals continued their dubious practice of selling perpetual rights to the Kings. Moses Church took advantage of the reprieve in litigation to sell the controlling interest of the Fresno Canal & Irrigation Company to "Doctor" E. B. Perrin of San Francisco.⁶⁹

With the Fresno Canal, Doctor Perrin had inherited a law suit. After four years of suit and appeal, 1886 to 1889, the California Court of Appeals granted the Fresno Canal Company only a trickle of its former claim. This left Perrin with the same dilemma that had plagued Moses Church a decade earlier. With his meager water ration, Perrin could supply only one-third of those guaranteed "perpetual rights" to the Kings River. Perrin had little choice but to buy out his adversaries downstream, the riparian owners of Laguna de Tache. In 1891, he shrewdly negotiated the purchase of the Rancho for \$800,000. It was a bargain; the water rights alone were worth the purchase price of the entire grant. So valuable was Laguna de Tache that Perrin managed to secure a million dollar loan from an eager group of British investors based in northwest Canada.⁷⁰

THE FRESNO CANAL

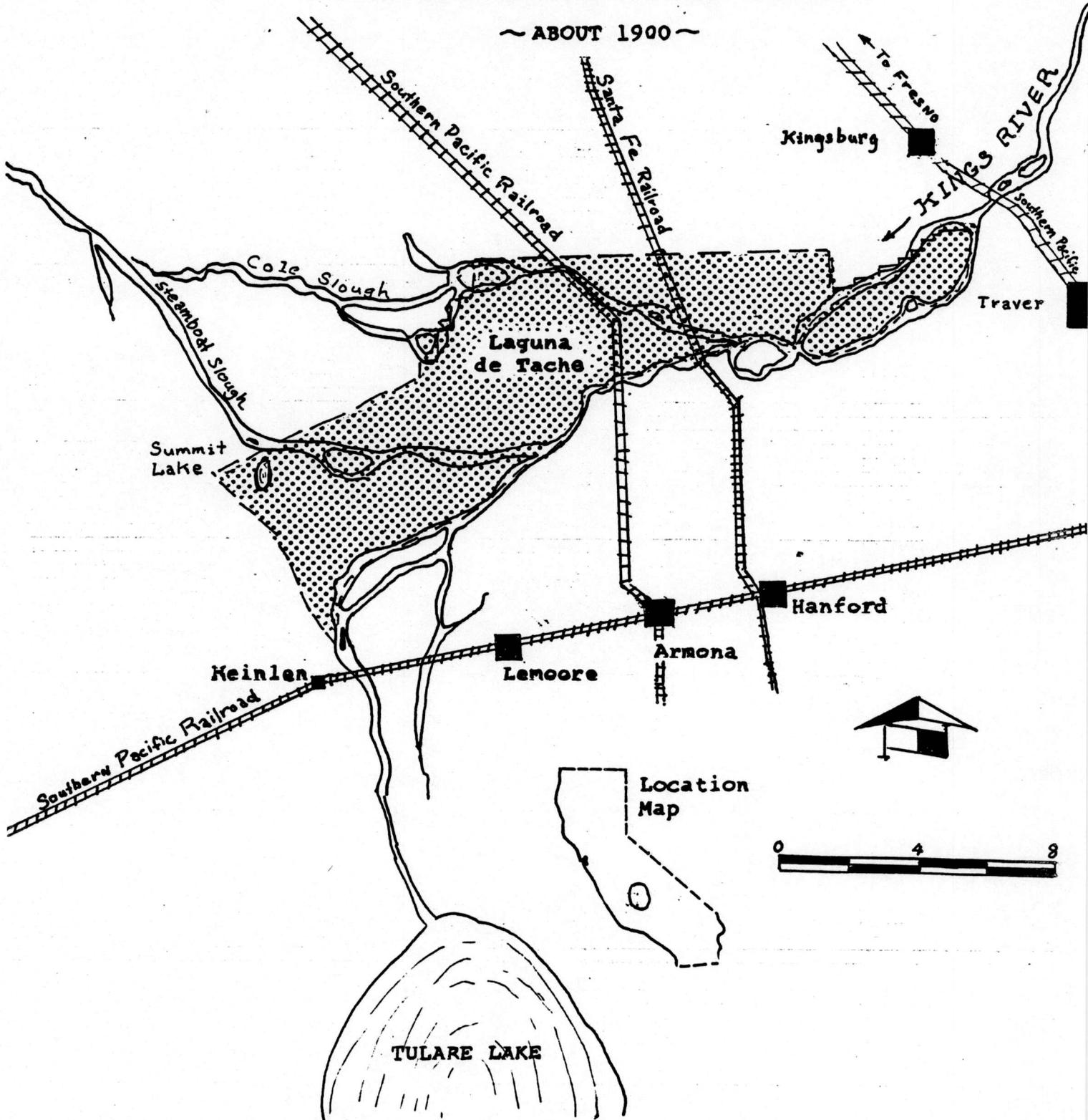
~ ABOUT 1900 ~



Source: Carl Ewald Grunsky, "Irrigation Near Fresno, California" in U.S. Department of the Interior, Water-Supply and Irrigation Papers of the United States Geological Survey (Washington, D.C.: G.P.O., 1898).

RANCHO LAGUNA DE TACHE

~ ABOUT 1900 ~



Sources: Abstract of the Title to Ranch Laguna de Tache for Laguna Lands Limited (Fresno: Fresno County Abstract Co., ca. 1902); and Carl Ewald Grunsky, "Irrigation Near Fresno, California," in U.S. Department of the Interior, Water-Supply and Irrigation Papers of the United States Geological Survey (Washington, D.C.: G.P.O., 1898), plate XII.

With the deed to Laguna de Tache in his pocket, Perrin, in effect, floated the Rancho's riparian rights upstream. Meanwhile, rival canal companies had been falling like dominoes before the riparian doctrine. In the Eighties and early Nineties, the Fowler Switch, Gould, Enterprise, and Emigrant, and lesser canals had all been enjoined from diverting the river (although many headgates remained open despite injunctions). Now, the Fresno Canal Company was the undisputed king of the Kings, and when the news spread, Company land jumped to ninety dollars an acre. But Perrin's good fortune was short-lived. In 1893, a business depression and President Grover Cleveland's stubborn commitment to the gold standard sent the nation into the nineteenth century's worst deflationary spiral. Land prices on the Fresno plain fell with the national economy. In 1894, the Fresno Canal Company could no longer meet its loan obligations and Doctor Perrin was forced to forfeit the company to his British creditors.⁷¹

Under the aggressive leadership of the new owners, the Fresno Canal Company used its superior legal position to lock the headgates of rival canals. In 1896, the British creditors brought in their countryman Llewelyn Arthur Nares to supervise the company from Fresno. Nares, in turn, hired Ingvar Teilmann (former City Engineer of Fresno) to supervise operations from the field. Officially, Teilmann became the company engineer, responsible for surveying and maintaining the canals. Unofficially, Teilmann became the company strongman, responsible for collecting assessments and closing unauthorized canals. Armed guards patrolled the levees and Teilmann, by his own estimation, became the most hated man in Fresno County.⁷²

The Fresno Canal Company's unimpeachable water rights forced the fight for the Kings River out of the courts and onto the levees. When judges enjoined canals from diverting the river, determined farmers ignored the injunctions and fired upon court-appointed deputies. When downstream irrigators thought an upstream canal was diverting more than its fair share, the diversion would explode in the night. On one such night in 1882, seventeen unidentified men, presumably farmers downstream, dynamited the diversion dam at the head of the Enterprise Canal. Then, the mob marched south to Kingsburg and blew the earthen Emigrant dam. In the turbulent 1890's, downstream landowners saw every new upstream dam as a direct threat. Thus, men such as Samuel E. Moffet of Kingsburg and William H. Shafer of Selma became local heroes for their expertise with dynamite.⁷³

Despite the opposition, the Fresno Canal Company tightened its grip on the Kings through lawsuits and mergers. The Alta Canal Company was the last survivor of the appropriators above the intake of the Fresno Company Canals. In 1896, Nares sent Teilmann to block the headgate of the Alta Canal. No sooner had Teilmann filled in the head of the canal than the Alta farmers began excavating an even deeper channel. When Teilmann returned, armed with an injunction and a gang of twenty Chinese laborers, they were routed by gunfire. Temporarily, well-placed violence kept some canal companies afloat. It was, therefore, easy for William Shafer to rationalize his vigilantism as "a necessary . . . act of

war."⁷⁴ Like the cattlemen of the 1870's, the maverick irrigators of the 1890's found some leverage in bargaining by riot.⁷⁵

Ultimately, dynamite and gunpowder could not halt the monopolization of the Kings River. But the gunfight on the Alta Canal forced Superintendent Nares to re-assess his strong-arm tactics. In 1897, Nares fashioned a non-aggression pact between the warring appropriators of the Kings. When warned that the attorneys would never agree on a "fair" adjudication, Nares responded: "We will sit around the table without attorneys."⁷⁶ In this informal way, Nares succeeded where forty years of formal court proceedings had failed. Out of the compromise came a Committee of Thirty,⁷⁷ the foundation of the Kings River Water Association. And then, in 1902, appropriators on the Kings Delta merged into the Consolidated Canal Company. Nares had worked out what has been hailed as a remarkable compromise among hundreds of claimants--historic rivals who had been blasting one another's dams but a few years earlier.⁷⁸

Yet, the so-called "Compromise of 1897" was less generous than it seemed. Nares was offering those who had been "stealing" the Kings a chance to share the Fresno Canal's claim. Although contemporaries hoped that the Nares compromise would revive healthy, free-market competition among purveyors of water and land, Nares and his associates had, in fact, tightened their grip on the river. Simultaneously, Nares served as President of the Fresno Canal Company, Consolidated Canal Company, Summit Lake Investment Corporation, and Laguna Lands Limited. All together, Nares and his group of British investors controlled an estimated ninety-six percent of the Kings River, about 400,000 irrigated acres.⁷⁹

The Compromise of 1897 was a fair, even generous, adjudication of the River. Like Henry Miller a decade before, Nares could afford to be lenient; he held all the cards. Yet the settlement neither revived small, independent canal companies nor appeased the anti-riparian, anti-monopoly crusaders. Rather, the Nares compromise was a victor's peace: a symbolic admission that the anti-monopoly campaign had ended in failure.⁸⁰

LATENT POSSIBILITIES, 1900

Southern California has demonstrated the value of irrigation. Northern California illustrates latent possibilities. When one considers the vast area of the Sacramento and San Joaquin Valleys, with a soil of great fertility and a marvelous climate, there is no doubt that it is to be during the twentieth century a great field of activity, not of the farmer alone, but the engineer, the lawyer, and the student of social and economic questions.

--Elwood Mead, 1902⁸¹

The central San Joaquin was not yet the Egypt of the Western Hemisphere. In the long run, the monopolization of water rights retarded the development of irrigation in the San Joaquin Valley. The price of water from the San Joaquin jumped from about two dollars and fifty cents per acre in 1875 to as high as six dollars an acre in 1900. The expense of litigation consumed small investors; violence and anti-monopoly sentiment discouraged large investors. And the rigid doctrine of riparian rights restricted riparian landowners themselves from expanding their farms.

By 1900, Federal engineers, water monopolists and small farmers all testified to the need for a State appointed watermaster with authority to adjudicate the rivers outside of the courtroom. Still, Nares and Teilman remained the law on the Kings for two decades after the 1897 compromise. In the twentieth century, irrigators kept few records and the precise flow of the Kings River remained a mystery. In the absence of adequate measuring procedures, the courts generally upheld the legality of claims by guessing at the diverting capacity of dams and weirs. Finally, the thirty-two members of the Kings River Water Association vested one man with the power to measure and regulate the intake of headgates and apportion the Kings when the river dropped below 2,000 feet per second. On January 1, 1918, Charles A. Kaupke became the first such Water Master of the Kings River.⁸²

* * * * *

"Next to bottling the air and sunshine," wrote William E. Smyth, "no monopoly of natural resources would be fraught with more possibilities of abuse than the attempt to make merchandise of water in an arid land."⁸³ By 1900, water had become a merchandise subject to monopoly pricing and control. Despite attempts to form public irrigation districts, giant land and water corporations secured superior rights to the San Joaquin. Despite the popularity of the appropriative tradition, absentee riparian landowners controlled ninety-six percent of the Kings. For warring appropriators, the Compromise of 1897 and subsequent non-aggression pacts offered welcome opportunities for informal cooperation. For the stubborn advocates of public ownership, the turn of the century compromise settlements exemplified monopoly control and the further concentration of water and wealth in the San Joaquin Valley.

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IRRIGATION ON THE FRESNO PLAIN, ABOUT 1900

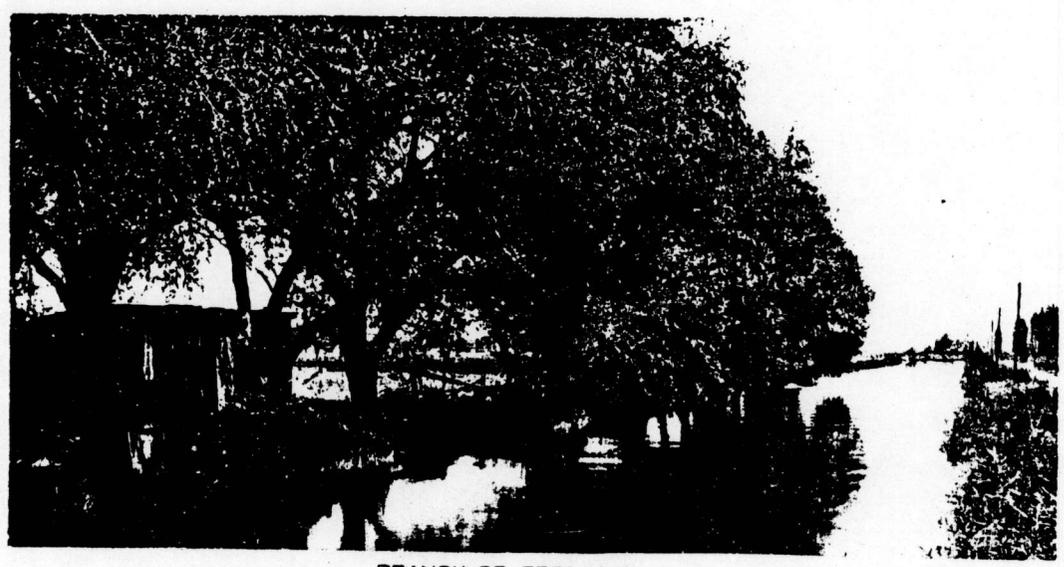


LE BERGER CHECK-LOWER KINGS RIVER CANAL



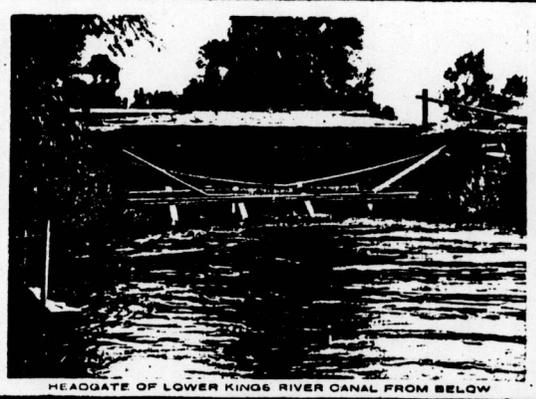
WEIR AT HEAD OF MURPHY SLOUGH FROM BELOW

SCENES ON CANALS

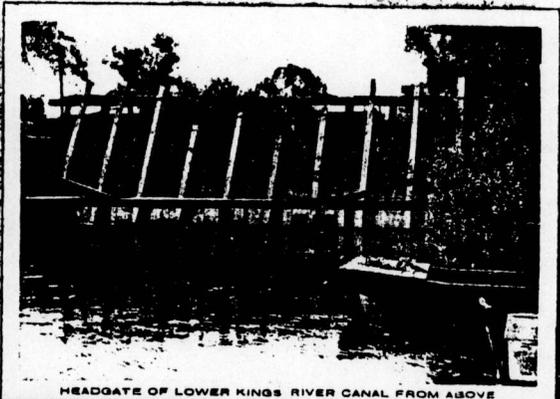


BRANCH OF FRESNO CANAL

ALONG KINGS RIVER



HEADGATE OF LOWER KINGS RIVER CANAL FROM BELOW



HEADGATE OF LOWER KINGS RIVER CANAL FROM ABOVE

Source: Elwood Mead, ed., U.S. Dept. of Agriculture, Bulletin No. 100 (Washington, D.C., G.P.O., 1902), plate XXVI.

CHAPTER THREE

HOME-GROWN UTILITIES, 1872 TO 1932

But who in heaven owns and controls Tri-Utilities which, like the House that Jack Built, owns Federal Corporation, which owns California Corporation, which owns California Company, which owns Fresno's water system and exacts high rates?

--The Fresno Bee, 1930¹

Who owned Fresno's water system: local businessmen or Wall Street financiers? On the eve of municipal ownership, in 1932, Fresnoans looked back on the sixty-year development of the City water system with confusion. Old-timers recalled the days before incorporation when the three-story water tank was one of the most impressive structures in town, visible for twelve miles on a clear day. From these auspicious beginnings grew the prosperous and civic-minded Fresno Water Company. Then, at the turn of the century, water and power interests allied to form a regional corporation. Meanwhile, Fresnoans thought of the Water Company as a small, home-grown, locally-owned business. In fact, the Fresno City Water Company served as an unofficial subsidiary of a 20,000 square mile utility empire: a powerful purveyor of domestic water, pump irrigation, hydroelectric power, and municipal transportation. In the city as well as the farm, water had become the keystone of monopoly control.

THE FRESNO WATER COMPANY, 1876 TO 1902

In 1876, four years after the Central Pacific founded Fresno Station, the community was still searching for an adequate and dependable water supply. At first, the railroad imported water by the tankful from the San Joaquin River. Travelers could pay to water their horses from Fresno's first well, near the corner of Mariposa and "I" (Broadway). Settlers soon discovered that potable water could be reached with a spade from forty to one hundred feet beneath the surface. After 1876, some residents filled their buckets from the two-story windmill pump in Court House Park. Substantial businesses and the better homes installed hand-operated Douglas pumps and cellar cisterns. Others relied on old-fashioned rope and bucket wells. Unfortunately, hand pumps and ropes could not hoist water fast enough for fire fighting. Nor could every business afford its own well.²

In the arid San Joaquin Valley, water was a universal symbol of prosperity; and therefore, citizens agreed that a town of Fresno's stature deserved a steam pump, a water tank and indoor spigots. Waterworks would reduce

fire insurance, modernize the township, and symbolize Fresno's new role as county seat. Waterworks would also check the proliferation of downtown wells. By 1876, private wells were so close together, and so deep, that well shafts were on the verge of collapse. Furthermore, water-fetching was considered womens' work, and housewives complained of the primitive "water bucket conditions" of the Fresno Township.³ Despite the general consensus that Fresno should have a town waterworks, citizens were reluctant to vest local government with the authority to sponsor public works. Rather than tax themselves for water, Fresnoans hoped that private enterprise would capitalize on public necessity. On January 19, 1876, the Weekly Expositor predicted that there was money to be made in the water business:⁴

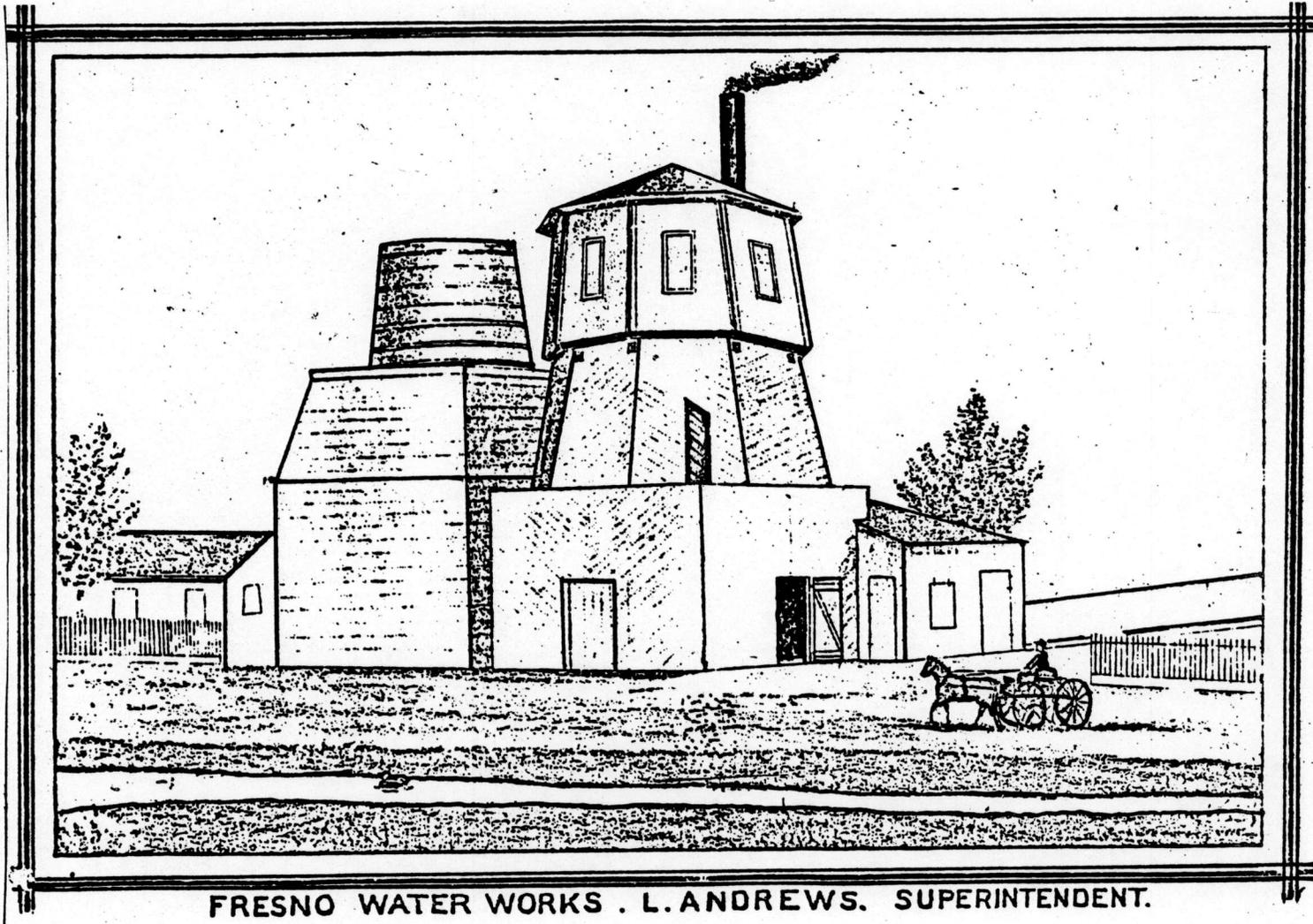
It seems to us that if some of our citizens would form an incorporation for the purposes of constructing waterworks to supply the Town of Fresno with water, they would soon develop a lucrative business, supply a public demand and afford the town better protection for fire fighting than could possibly be obtained otherwise.

In June, 1876, partners George McCullough and Lyman Andrews acquiesced to popular demand by laying the foundation of the Fresno Water Works on Fresno Street where the Guarantee Savings Building now stands. Like many Fresno County pioneers, George McCullough was a Forty-Niner, lured from his native Ohio during the California gold rush of 1849. For the next two decades, McCullough led a rootless life of panning gold, running cattle, and selling lumber. In January, 1873, he arrived at Fresno Station. Thereafter, McCullough pooled his savings with Lyman Andrews and the new partners began buying and selling lumber and land. Little is known about the early career of Lyman Andrews except that he, like McCullough, called himself a "carpenter by trade" and had the good sense to invest in water.⁵

The Fresno Water Works of 1876 was a beautifully crafted monument to progress and modernization. McCullough and Andrews bored a single well to a depth of one hundred feet where they struck what they thought at the time was an "absolutely inexhaustible" supply of water. A powerful steam engine pumped water through a seven-inch iron pipe up to a 23,000 gallon storage tank. The tank was a tapered octagon with eight ventilated panels and an eight-sided roof thirty feet above the board sidewalk. At about three stories in height, the Water Works could provide enough gravitational pressure to fight fires on the rooftops. Second only to the Court House, the community praised the architectural symmetry and grace of the Fresno Water Works.⁷

By the winter of 1876, McCullough and Andrews were pumping water to Fresno households. The Water Works billed their customers by the month: \$1.50 for a family of five, 10¢ for each additional person, \$1.50 for a garden, and 50¢ for the family cow. Immediately, the

FRESNO WATER WORKS,
BUILT BY McCULLOUGH AND ANDREWS, 1876,
LITHOGRAPH ABOUT 1882.



FRESNO WATER WORKS . L. ANDREWS. SUPERINTENDENT.

Source: Wallace W. Elliott, History of Fresno County, California
(San Francisco: Wallace W. Elliott & Co., 1882).

ADVERTISEMENT FOR FRESNO COLONY
ABOUT 1876

REAL ESTATE

—THE—

Basis of Wealth.

The Most Promising Investment ever Offered in the Country.

Soil, Climate and Water Facilities admitted to be Unequaled!

—FOR—

Fruit Growing and Drying, and for General Farming Purposes.



Secure a Homestead
WITH AN INCOME

CENTRAL CALIFORNIA COLONY

FRESNO.

RAISIN CULTURE AND FRUIT DRYING

The Most Profitable and Delightful Industry in California. Only Nine Hours' Ride from San Francisco. This Tract contains 4,000 Acres of the Very Choice Land in Fresno County, and is situated within Two Miles of the Thriving Town of Fresno, the County Seat. It is Subdivided into Twenty-Acre Farms, with Perpetual Water Rights Assured, upon the

INSTALLMENT PLAN.

TWO CROPS A YEAR!

NO FAILURE OF CROPS!

TERMS:—\$250 cash; \$12.50 per month for four years, and \$150 at the end of the fourth year. Agreements are dated back to Nov. 1st, 1875. No interest charged on deferred payments. No charge for water for irrigation. A tax of \$12.50 per year is levied upon each 20-acre tract, for the purpose of keeping the canals and dams in repair.

Purchasers who desire to pay up at once and take their deeds will be allowed special terms. This enterprise is intended to furnish to persons of moderate means pleasant homes that will yield handsome incomes.

More than Half the Farms are Already Sold.

DON'T walk about the city with your hands in your pockets looking in vain for employment and wanting away the little money you have already saved, when by striking out manfully to the country and securing one of these farms with the money you would have spent in idleness, you can place yourself in a position to refuse employment from any one.

DON'T work for wages when by a small investment in one or more of these farms you can become independent for life.

DON'T shove away your money to insolvent Life Insurance Companies when by securing one or two of these farms, payable on the installment plan, you can provide amply for your family, and place them, with absolute certainty, where want.

DON'T let your money remain idle in a Savings Bank, drawing only 4 to 10 per cent. interest per year, when by an investment in these farms you can make at least 50 per cent. profit every year, have absolute security—the title to the property being conveyed to you upon the first payment—and have security that cannot be depreciated by the mismanagement of bank officers, by panic, by devaluating fees or by earth-quake.

Under our contract plan, purchasers need not retire from their present business until the new one becomes a paying institution. This property, unlike city lots, is not subject to harassing street assessments nor heavy taxes. It not only provides a place to live on, but can, with but small outlay, be made to furnish a comfortable living at once, and a fortune in a few years.

Call or send to the office for full particulars.

306 PINE STREET, corner of Sansome, over the Pacific Bank.
M. T. BO. KARNET, Manager.

Source: Edwin M. Easton, Vintage Fresno (Fresno: Huntington Press, 1965), p. 17.

Water Works attracted an eager group of local investors, every one of whom would leave his mark on Fresno history. Among the investors were John William Faymonville, prominent businessman and co-founder of the Bank of Fresno; John William Ferguson, publisher of the Fresno Expositor; and Dr. Lewis Leach, leading doctor of the community, land developer and founder of two Fresno banks. In 1877, the investors incorporated their interests as the Fresno Water Company, with capital stock of \$20,000. Although McCullough and Andrews retained controlling interest, Dr. Lewis Leach would soon become the Company's guiding force.⁸

The Water Company had the good fortune to incorporate just before a State-wide land boom. The Central Pacific, by far the largest private land owner in the State, sparked the population explosion with a national advertising campaign followed by drastic reductions in trans-continental passenger rates. In the Eighties, a Chicagoan could ride the train to Los Angeles for about a dollar fare. With the subsequent deluge of migrants, the population of California increased fifty-four percent in a single decade, from 560,000 in 1880 to 865,000 in 1890.⁹

Fresno had its own publicists who diverted a wide stream of Los Angeles bound migrants toward the Central San Joaquin Valley. One of the most gifted of these was raisin magnate and land promoter Martin Theodore Kearney. In the mid-Seventies, the mysterious M. Theo. Kearney arrived in Fresno from unknown origins. Some rumored that Kearney was the illegitimate son of an English nobleman, others heard that his father was merely a dockworker in Liverpool. Whether high-bred or low, Kearney carried himself with aristocratic arrogance and promoted land with capitalistic cunning. Through the pen of Kearney, arid and treeless Fresno Colony was transformed into a lush agricultural utopia. A 1876 advertisement guaranteed "perpetual water rights," presumably to the Kings River, and claimed that twenty acres in Fresno was "the most promising investment ever offered in the country."¹⁰ As land-hungry Easterners responded, the Town, then City of Fresno registered one of the State's most dramatic booms. In the Eighties, the population of Fresno increased ninefold, from 1,112 in 1880 to 10,818 in 1890.¹¹

The water business increased accordingly. In 1877, the Water Company had erected an austere 12,000 gallon tank beside the original octagonal tank. In 1881, the Company installed its second well and an improved steam pump. By the following year, the Company had laid over three miles of pipe to homes and businesses. With abundant water, Fresnans created the most impressive monument to new-found prosperity: the visible transformation of the Fresno landscape. In 1882, an early County history described this remarkable transformation:¹²

The change that has taken place within the brief space of time since water was brought on seems perfectly miraculous. . . . Where a few short years since the rattlesnake and owl made their home, where the horned toad and lizard scampered over the burning sands and gamboled in the broiling sun--today we see the fat sleek milkcows wading to their knees in luxuriant clover.

Despite its rapid expansion, the Water Company could not keep pace with the frantic growth of Fresno's downtown in the 1880's. As earlier described, a catastrophic fire in the summer of 1882 devastated thirty-five buildings along "I" Street. Although Water Company Superintendent Lyman Andrews kept the pumps going at full speed, the Company failed to contain the fire in its midst. The Water Company had again proved a poor substitute for a fire department. Soon, downtown merchants were calling for municipally-owned waterworks, a well-equipped fire department, and a full-time city government. The Water Company was even having trouble quenching the town's everyday domestic thirst. Many unserviced homes installed windmills to fill the common shingle-style, two-story tanks. Gardens and domestic animals could be watered from Mill Ditch which ran southwesterly along Fresno Street.¹³ Generally, homes north of Divisadero Avenue remained beyond the reach of the Water Company until the twentieth century.¹⁴

In the Eighties, the Water Company responded to population growth by sacrificing aesthetic concerns for increased service. Classical in design, the 1876 Water Works suggested a Greek column. The square pumphouse represented the column's base, the octagonal mid-section symbolized the column's crown.¹⁵ In 1877, the new stock company had spoiled this classical symmetry by erecting a clumsy, unadorned tank beside the original more graceful structure. A decade later, in 1887, the Water Company continued its disregard for architectural harmony by erecting unsightly tanks across from the schoolhouse (modern site of the Memorial Auditorium) on Fresno near "O". McCullough and Andrews had built the 1876 tank as a monument to civic pride; the 1887 tanks were monuments to efficiency and increased service.¹⁶

With the 1887 additions, the Company tripled its water supply. Two 150 foot wells and a steam pump filled the tanks from a black-shaped pumphouse next door. Unquestionably, the new facilities were necessary if the Company was to keep pace with urban growth. However, some Fresnoans complained that the austerity of the large black tanks negated their utilitarian value. Furthermore, in an era when Fresno was trying to outgrow its small town character, Fresnoans thought that there was something "small-towny" about uncovered, unadorned water tanks. In the 1890's, this concern for aesthetics and architectural harmony resurfaced as a house and garden beautification movement which would change the face of Fresno.¹⁷

In the boom years of the late nineteenth century, Fresno attracted national and international investors. English and Canadian investors financed canal companies; Midwesterners invested in water and hydroelectric power. In 1890, a group of Chicago investors negotiated the purchase of the Fresno Water Company for \$140,000. Chicagoan J. K. Allen became the Company's new superintendent and John J. Seymour the new local manager. Concurrently, Seymour and Allen invested in an experimental hydroelectric power plant on the San Joaquin River. The new owners proved generous and the Water Company expanded rapidly.

By 1893, the system had eight wells, one 600 feet deep, another 400 feet, and the remainder from 300 to 350 feet deep. The Company also installed a new Gaskell pump, capable of hoisting 6,000,000 gallons a day. The City was the Water Company's biggest customer. For \$4,500 a year, the Company flushed main sewers once a day and lateral sewers twice a week. The Water Company also supplied the fire department although the City maintained its own cisterns and hydrants.¹⁸

With eight wells and a new Gaskell pump, the Company had an abundant water supply but too little storage space. Furthermore, the community was still complaining about the appearance of the black tanks on Fresno and "O". In 1894, the Water Company hired the Chicago architect George W. Meyer to replace the unsightly tanks with an elegant new water tower. Apparently, Meyer drew inspiration from the famous structure in his home town. The Chicago Avenue Water Tower had been one of the few structures to survive the great Chicago fire of 1872. Temporarily, the Chicago Water Tower stored books donated by Queen Victoria and others to replace those lost in the fire. This may explain why the original blueprints of the Fresno Water Tower included plans for a library on the three floors beneath the tank. Fortunately, Fresnoans had the foresight not to confine their library to the tower.¹⁹

Like its Chicago counterpart, Fresno's "old" water tower is of a Romanesque design suggesting, perhaps, a medieval watchtower. Architect Meyer achieved this character with ornately detailed window and door openings, a turret and wrought iron railing, and corbels beneath a conical roof. However, the weather vane, balcony, and Roman arch doorway give the tower the Victorian flavor of the late nineteenth century. The water tower stands 100 feet high and supports a 250,000 gallon tank which, in 1894, more than tripled the storage capacity of the Fresno Water Company. Fresnoans were confident that no future edifice in the San Joaquin Valley would equal the grandeur of the Water Company's 100-foot monument to water and community growth.²⁰

In the Nineties and again in the Twenties, the Water Tower inspired new interests in architectural harmony, landscaping, and City-wide beautification. With an abundant, virtually unpollutable water supply, the Water Company encouraged domestic gardening by charging non-industrial consumers a flat monthly rate. The Water Company also joined the beautification movement by planting trees, shrubbery, and flowers around the City's pump stations. In the Twenties, when Fresnoans joined the national City Beautiful movement, the pump stations and the Old Water Tower became symbols of community beautification; and therefore, excellent public relations for the Water Company and its parent Company, the San Joaquin Light and Power Corporation. In 1925, Fresno's water and hydroelectric power interests fought off a campaign for municipal ownership by stressing the Water Company's historic role in community beautification.²¹

From the business section radiate blocks of pretty stucco and frame houses and imposing mansions, set in velvety green lawns bordered with bright colored flowers of every variety and seasoned and shaded by trees. And the main reason for this scene of beauty is water. Water has been the magic key that has unlocked untold treasure in the countryside surrounding Fresno.

Unfortunately, the City of Fresno could not repay its civic-minded water company with prosperity. In the late nineteenth century, urban growth rather than civic pride became the barometer of success in the water business. The boom years brought profits; however, as growth stagnated, so did the water business. In 1902, financial difficulties forced the Water Company into receivership. Although insufficient records remain to determine the precise causes of bankruptcy, the following charge (figure III-C) suggests that the Water Company may have over expanded its facilities in a decade when population growth leveled off.²²

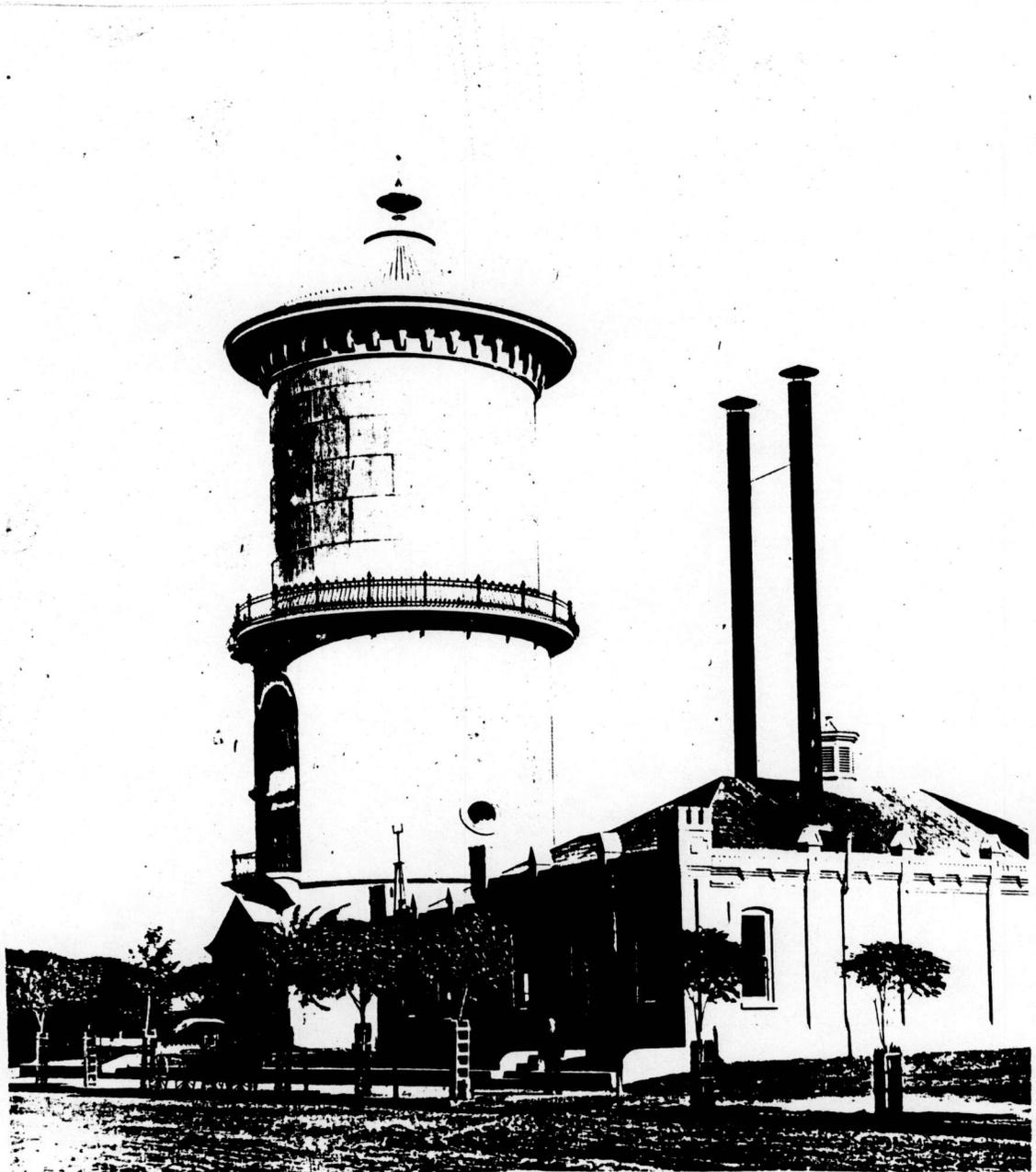
FIGURE III-C

POPULATION GROWTH AND WATER STORAGE CAPACITY, 1870-1900

Year	Population	Percent Increase	Capacity	Percent Increase
1880	1,112		3,500 gal.	
		873%		243%
1890	10,818		120,000 gal.	
		15%		108%
1900	12,470		1,250,000 gal.	

In the Eighties, the population of Fresno increased 873% while the Water Company increased its storage capacity only 243%. Roughly speaking, the demand for water increased three times as fast as the stored supply. However, the Nineties witnessed the reverse trend. Between 1880 and 1890, the population of Fresno increased only 15% while the Water Company increased its storage capacity 108%. Roughly speaking, the water supply increased six times as fast as the demand for water. With the construction of the Water Tower and other improvements of the 1890's, the Chicago investors may have slipped across that fine line between the maximization of profits and over-investment. Meanwhile, they also over-extended their investments in Fresno's hydroelectric power company. In 1903, the Chicago investors sold out to a daring group of Los Angeles financiers who would build a regional empire of water and hydroelectric power.²³

THE OLD WATER TOWER
ABOUT 1900



FROM THE COLLECTION OF DONALD C. DeVERE

A. G. WISHON AND THE WATER-POWER ALLIANCE, 1895 TO 1932

At the turn of the century, urban water supplies became the domain of electric power companies in Fresno, Bakersfield, and other population centers of Central California. In effect, the electrification of the San Joaquin Valley allowed utilization of the same water thrice. Upstream, water became the raw material of hydroelectric power. Downstream, electricity powered the motorized headgates and spillways of irrigation canals. Irrigators diverted the rivers onto plains where much of the water soaked through the soil into the aquifer beneath. Then, electric motors pumped underground water back to the surface and into the pipes of urban, agricultural, and industrial consumers.

Electric companies reaped profits from all three stages of water consumption. Power magnates invested heavily in dam and canal construction, for reservoirs which stored water for hydroelectric power also provided water irrigation in the dry season. In Central California, many domestic water purveyors allied with power companies under the corporate identity of the San Joaquin Light and Power Corporation. By the Twenties, the Fresno-based San Joaquin Light and Power Company had grown into a 20,000 square mile utilities empire, with subsidiaries stretching from Santa Maria to Bakersfield to Merced.²⁴

Under the wing of the San Joaquin Light and Power Corporation, water and power interests became informally but inextricably entwined. The Fresno water-power alliance began on April 8, 1895, when prominent investors in the Water Company incorporated their interests as the San Joaquin Electric Company. Under the direction of Water Company President John J. Seymour, the Electric Company attracted national attention with the construction of a technologically advanced hydroelectric power plant on the San Joaquin River, thirty-six miles northeast of Fresno in the Sierra foothills. This was one of the first times hydroelectric power had been successfully transmitted as far as thirty-six miles. In 1900, the Company extended its lines an additional thirty-one miles to the City of Hanford. The San Joaquin Electric Company also pioneered the operation of a generator beneath a 1,412 foot "head"²⁵ of water. The technological success of this experiment in hydroelectric power earned Fresno its popular turn-of-the-century nickname of "Electric City, California."²⁶ Furthermore, the electrification of the Central Valley helped the State of California become the so-called "Cradle of Hydroelectric Power."²⁷

Unfortunately, technological success did not insure financial success. Fresno's first power company proved too inexperienced and too accident-prone to survive its first decade. In 1895, the San Joaquin Electric Company suffered its first major mishap when a German electrician inadvertently ruptured a power line. The ruptured line touched off a major explosion which flooded the San Joaquin powerhouse. In the confusion, the careless electrician fled to San Francisco where he set sail for Germany, a hemisphere away from any possible damage suit.²⁸

When the powerhouse was back in operation, the San Joaquin Electric Company incurred the wrath of a formidable rival, the Fresno Gas Company. Before the time when natural gas was commonly used for heating, the primary business of the Gas Company was supplying fuel for Fresno's gaslights. The San Joaquin threatened to replace volatile gaslights with safe, economical incandescent lamps. Fulton G. Berry, major stockholder of the Fresno Gas Company and proprietor of the Grand Central Hotel, devised a nefarious scheme to cut off the San Joaquin Electric Company at its lifeline: the San Joaquin River. Berry quietly purchased land "riparian to" (that is, land on the banks of) the San Joaquin River, above the intake channel of the Electric Company's powerhouse in South Fork Canyon. With secure "riparian rights"²⁹ to the River, Berry excavated a canal which diverted a sizable stream away from the powerhouse and onto unplanted chaparral near Flat Ridge. During the dry season, Berry's canal effectively choked off the downstream power plant. The fight which ensued proved too much for the infant power company. In 1902, Berry's scheme helped force the San Joaquin Electric Company--along with its sibling, the Fresno Water Company--into the hands of a receiver. Meanwhile, a major part of downtown Fresno remained gaslit until the second decade of the twentieth century.³⁰

Both the San Joaquin Electric and the Fresno Water Companies were salvaged from receivership largely by the promotional skills and foresight of Albert Graves Wishon. In 1888, at age thirty, A. G. Wishon left his home state of Missouri to take advantage of the California land boom. Unlike most fortune seekers of the Eighties, Wishon migrated to the Golden State with substantial gold in his pockets. Wishon's first taste of the profitability of the San Joaquin Valley's water industry was with canal construction on the Kaweah River. In the late Nineties, Wishon supervised the excavation of Exeter Ditch, which diverted the Kaweah above Lemon Cove about twenty miles along the base of the hills and onto grazing land in the vicinity of Lindsay, Tulare County. The Exeter Ditch transformed this pasture land into one of the State's most productive orange groves.³¹

Wishon was equally successful with his promotion of hydroelectric power. In 1899, Wishon organized the Mt. Whitney Power Company, which lighted Visalia, Tulare, Exeter, Porterville, and Lindsay. Wishon used Mt. Whitney Power as a vehicle to transport hydroelectric power to the farm. With steam and gasoline pumps, agricultural pumping was far too expensive for large-scale irrigation. However, Wishon and Mt. Whitney Power demonstrated the economy of irrigation with electric sprinklers and pumps. At the turn of the century, the water supply beneath the Valley floor seemed limitless. Thus, pump irrigation provided Valley farmers with a dependable water supply without the costly riparian-non-riparian complications of ditch irrigation. Wishon's promotion of pump irrigation sparked rapid rural electrification in the San Joaquin Valley and throughout the State.³²

In 1903, Wishon persuaded two Los Angeles utilities magnates, William G. Kerchoff and Allan Christopher Balch, to purchase the remains of the bankrupted San Joaquin Electric Company, which they re-incorporated as the San Joaquin Power Company. At the same time, Wishon, Kerchoff, and Balch salvaged the struggling Fresno Water Company, which then re-incorporated as the Fresno City Water Company. Wishon became General Manager of San Joaquin Power and Vice President, later President, of the City Water Company. On the books, San Joaquin Power and City Water were unaffiliated, independent utilities. But unofficially, the Water Company was a subsidiary of the larger power company. Fresno's water and power concerns shared about ninety percent of the same stockholders. Furthermore, three out of five members of the City Water Company's Board of Directors also sat on the Board of the San Joaquin Power Company.³³

The rapid growth of the San Joaquin Power Company and its subsidiaries became one of the Valley's most dramatic success stories. In 1904, the Company lighted Fresno and Hanford with a single 1800 horsepower plant, but without a reserve plant to insure constant service. The following year, the Company constructed a reserve powerhouse with a generating capacity of 1,000 horsepower and, in 1906, a third powerhouse was constructed on the north fork of the San Joaquin River. With three powerhouses, San Joaquin Power began a program of rural electrification, extending lines to Lemoore, Laton, Corcoran, Dinuba, Reedley, Fowler, Selma, and Madera. The panic of 1907 forced farmers to cut back electrical consumption and San Joaquin Power scoured the countryside for new markets. Boldly, Wishon and his associates solicited their natural rivals in the oil business. In 1908, Wishon and Company were the first to demonstrate that electricity could drill oil more economically than steam or oil, and the power lines were extended thirty miles west to the Coalinga oil fields.³⁴

Undaunted by the Panic of 1907, San Joaquin Power continued to expand with construction of the Crane Valley powerhouse and reservoir (modern Bass Lake) in 1909.³⁵ Concurrently, Kerchoff, Balch, and other prominent investors in San Joaquin Power formed the Coalinga Water and Electric Company which, in 1913, would re-incorporate as the Midland Counties Public Service Corporation. The Midlands Corporation would grow into a giant of its own right. Among its holdings were Midland Counties Gas and Electric Company, Paso Robles Light and Water Company, Russell Robinson Water and Electric Corporation, San Luis Gas and Electric Company, and Santa Maria Gas and Electric Company.³⁶

Meanwhile, the San Joaquin Company grew as fast as its offspring. In 1910, the Company increased its capitalization and re-incorporated as the San Joaquin Light and Power Corporation. The new corporation expanded north into Merced County with the acquisition of the Merced Falls Gas and Electric Company, and as far south as Kern County with the purchase of the Power, Transit, and Light Company.³⁷ During the First World War, power plant construction was temporarily curtailed. However, the demand for hydroelectric power suddenly increased as

Valley farmers turned to agricultural pumping to meet Europe's war-time demand for food and fiber. On August 7, 1920, the Corporation met this growing demand for hydroelectric power with the christening of Kerchoff powerhouse, on the San Joaquin River near Auberry.³⁸

By the Twenties, Fresno's own power company had grown into a regional monopoly, controlling gas and electric companies, domestic water supplies, pump irrigation, and municipal railroads in ten counties. In its first decade, the monthly income of the San Joaquin Light and Power Corporation had rocketed from \$10,000 in 1910 to \$300,000 in 1919. The following year, the Corporation serviced about 46,000 customers in 150 towns. In addition, the Corporation serviced an agricultural community of two million acres and three-quarters of the oil fields in the State. Along with Pacific Gas and Electric to the north and Southern California Edison to the south, Fresno based San Joaquin Light and Power was considered one of California's "Big Three" utility corporations.³⁹

Alongside the San Joaquin Light and Power Corporation grew its unofficial subsidiary, the Fresno City Water Company. In 1904, the Water Company owned three pump stations and twenty-eight miles of mains which serviced about two thousand consumers. Under the direction of A. G. Wishon, City Water added a pumphouse per year for the next seven years. By 1911, Fresno boasted nine pumphouses,⁴⁰ sixty-eight miles of mains, and about 4,500 service connections. Like the original Water Company of the Eighties, the newly incorporated City Water Company rode the crest of another surge in the population of Fresno. In the first decade of the twentieth century, the City's population doubled, increasing from 12,470 in 1900 to 24,892 in 1910. The Water Company also benefited from the rising popularity of indoor plumbing in middle-class homes. Although the Water Company depended on its big brother, San Joaquin Light and Power, City Water took a step toward self-sufficiency with the construction of an electrical substation in 1911. In that year, J. G. White Company evaluated the efficiency of the system:⁴¹

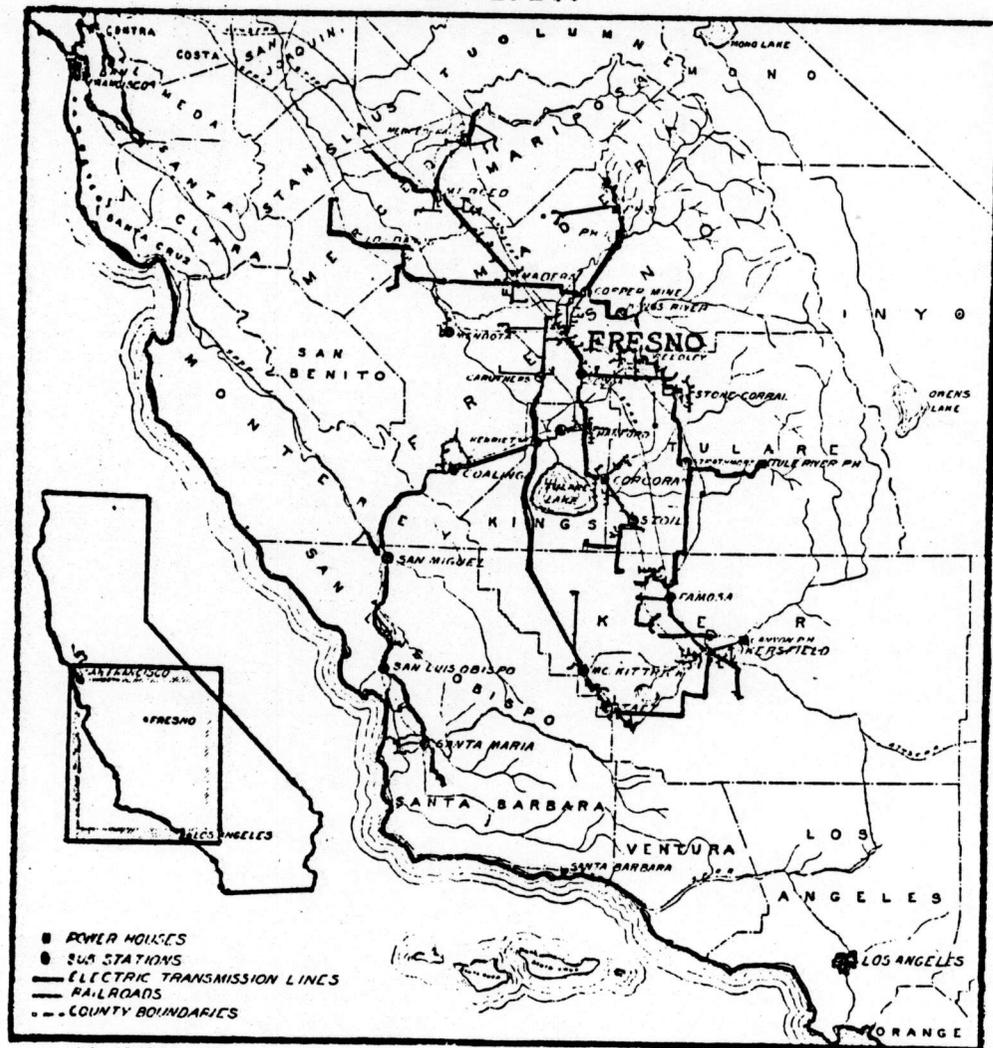
The property is the result of development following to a considerable extent the growth of the City of Fresno. The physical plants [pumphouses] today adequately serve the community and, by the rather unique arrangement of pumping plants, pressures are well equalized. The quality of the water has been passed upon by competent authorities and is said to be excellent.

In 1920, the Water Company cemented its informal relationship with the San Joaquin Light and Power Corporation by proposing a joint water-power office building on Fresno Street opposite the Old Water Tower. The California Railroad Commission (forerunner of California's Public Utilities Commission) granted the Water Company authority to sell \$200,000 in bonds to finance construction. However, the blueprints revealed that only a single floor of the six-story building was to house Water Company offices. The remaining five stories were to be the regional headquarters of the Power Corporation. A. G. Wishon and the directors

FIGURE III-F

Territory of the San Joaquin Light & Power Corporation

Map Showing the Ten Counties Served
and Extent of Territory as Compared to
the Total Area of California
in 1914.



Source: San Joaquin Light and Power Magazine, Vol. II, No. 3,
March, 1914, p. 161.

FIGURE III-G

WATER AND POWER, 1876 to 1932

The following chart chronicles the succession of Fresno's water purveyors and their association with power companies.

<u>YEAR</u>	<u>WATER</u>	<u>POWER</u>
1876	Fresno Water Works (McCullough and Andrews)	
1877	Fresno Water Company (Dr. Leach and others)	
1890	Fresno Water Company (Seymour and Chicago investors)	
1895		San Joaquin Electric Company (Seymour and Chicago investors)
1903-4	Fresno City Water Co. (Wishon, Kerchoff, & Balch)	San Joaquin Power Company (Wishon, Kerchoff, & Balch)
1910		San Joaquin Light and Power Corp. (Wishon and others)
1920	Fresno City Water Corp. (Wishon and others)	
<u>Water and Power Parted in 1924</u>		
1924	California Water Service Corp. buys Fresno City Water Co. (Earl C. Elliott, President)	
1926		San Joaquin Light and Power merges with New York based Western Power Corp. (Wishon and others)
1930		Pacific Gas and Electric Corp.
1932	City of Fresno buys Fresno City Water Corp., a division of California Water Service Co. (Commissioner of Public Works, Van Valkenburgh)	

of the Water Company thought that a new corporate identity would expedite the sale of construction bonds. Thus, in February, 1920, the Fresno City Water Company re-incorporated as the Fresno City Water Corporation. Despite the name change and the Railroad Commission's stamp of approval, the proposed Fresno Street water-power building never left the blue-prints. Instead, the headquarters and engineering department of the Fresno City Water Corporation moved into the fourth floor of the San Joaquin Power Building (now the P.G.&E. building) in 1925.⁴²

The water-power alliance was further reinforced at the supervisory level. In 1917, C. B. Jackson was appointed superintendent of the Water Company after several years association with the Power Corporation. Water Company President A. G. Wishon was concurrently general manager of the Power Corporation. His son, A. Emory Wishon, was concurrently Vice President of the Water Company and an official (later General Manager) of San Joaquin Light and Power. The water-power interest also embraced municipal transit companies in Fresno and Bakersfield. The Wishons, father and son, and other Water Company stockholders invested in the Fresno City Railroad, the Fresno Traction Company, and the Fresno Interurban Railroad.⁴³

In the mid-Twenties, Fresno's thirty-year water-power alliance was severed by large mergers in the power business. In December, 1924, the San Joaquin Light and Power Corporation merged with Western Power Corporation of New York, a holding company for Great Western Power. With Great Western Power, San Joaquin Light and Power rivaled Pacific Gas and Electric (P.G.&E.) for control of the Sacramento Valley and the San Francisco Bay Area. Then, in 1930, P.G.&E. absorbed San Joaquin Light and Power in one of the biggest utilities coup d'etats in California history. In that year, P.G.&E. also took control of the giant Midland Counties Public Service Corporation and the Modesto Gas Company. San Joaquin Light and Power retained its local leadership and autonomous corporate identity until P.G.&E. dissolved the San Joaquin Division in 1938.⁴⁴

After the 1924 merger, the San Joaquin Light and Power Corporation folded its silent hand in Fresno's water business and the Water Company looked elsewhere for financial support. In December, 1926, the Fresno City Water Corporation was purchased by the newly incorporated California Water Service Corporation, a subsidiary of Federal Water Service Corporation of New York. California Water Service quickly grew into a powerful state-wide utility, controlling municipal and industrial water supplies on the San Francisco Peninsula, in Los Angeles County, and throughout the Central Valley. Fresno's water system remained part of the California Water service network until the City of Fresno purchased the system in February, 1932.⁴⁵

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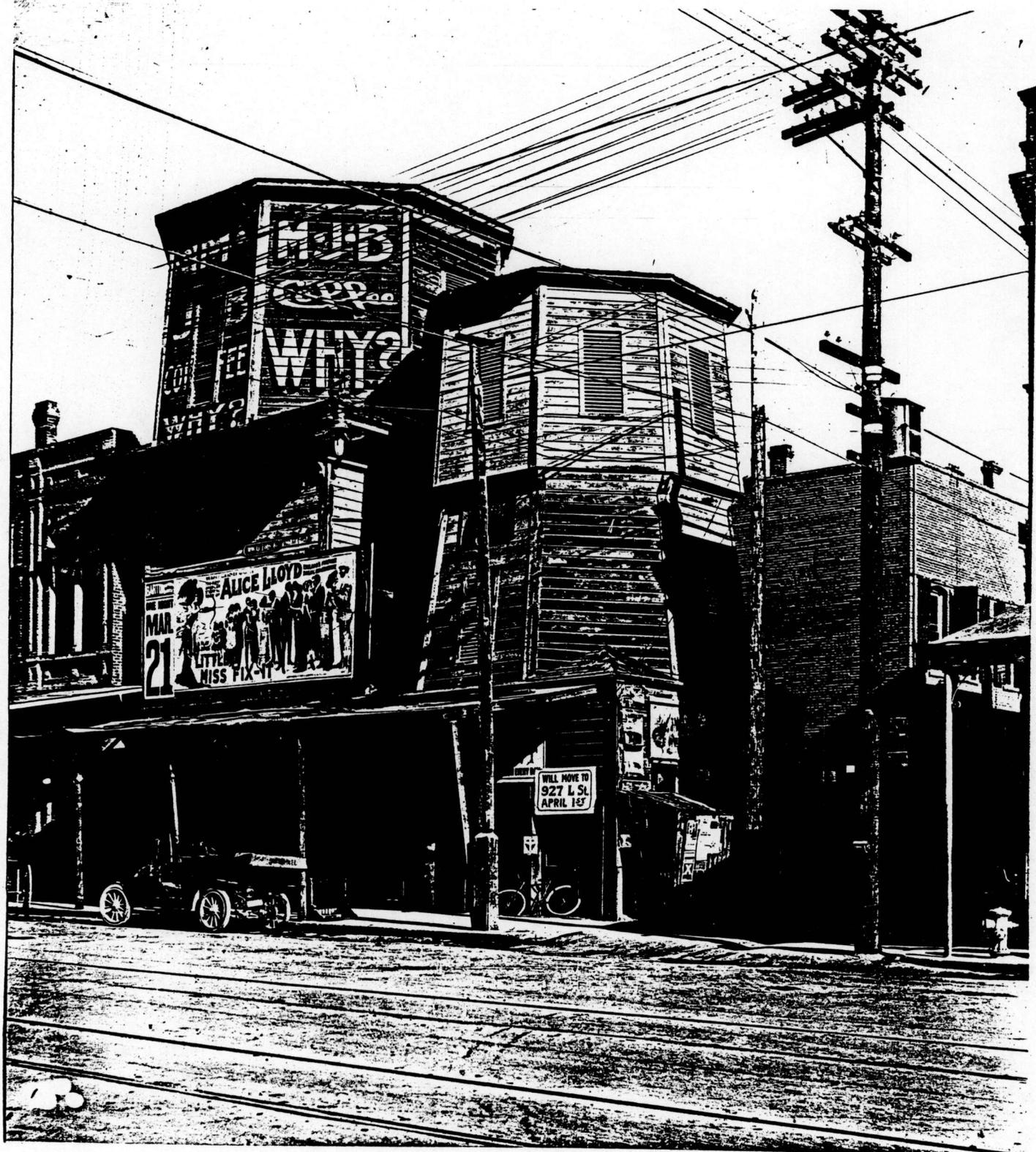
The advent of hydroelectric power registered a crucial turning point in the history of water in the San Joaquin Valley. During the last

quarter of the nineteenth century, irrigation canals had fed and maintained the great underground reservoir or aquifer beneath the Valley floor. In the vicinity of Fresno, wells that had pumped water from one hundred feet in the Seventies could reach water at about forty feet in the first decade of the twentieth century.⁴⁶ With good reason did Fresnoans believe that their first municipal well of 1876 had tapped an "absolutely inexhaustible" water supply.⁴⁷ However, hydroelectric power provided an economical way to exhaust the seemingly inexhaustible supply. Fresno's water table dropped at the rate of one foot four inches per year, from 1920 to 1960. In this new era of pump irrigation, hydroelectric power would help Fresno become one of the nation's most productive agricultural counties. Meanwhile, unrestricted agricultural pumping would lead to severe problems of water and power conservation in the second half of the twentieth century.⁴⁸

The advent of hydroelectric power also registered a turning point in the history of Fresno's municipal water supply. After a false start in the Nineties, water and power interests allied to form a regional public utility, the San Joaquin Light and Power Company. Although the Water Company was not the independent, civic-minded firm it had once been, Fresnoans consoled themselves by the fact that their water system was still locally owned. Then, in 1926, the system was absorbed by the California Water Service Company, a subsidiary of a many-tiered national corporation. No longer could Fresnoans maintain the illusion that the Fresno Water Company would be managed in their best interest. In effect, it was the realization that the Water Company was no longer a home-grown, civic-minded concern which prompted Fresnoans to place the water system in public hands.

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FRESNO WATER WORKS, ABOUT 1916



FROM THE LAVAL COLLECTION, GRAPHIC TECHNOLOGY CO.

CHAPTER FOUR

PUBLIC OWNERSHIP, 1877 TO 1940

We are going to be joint partners in the ownership of water--all of us, from the Sierras to the Slough. Won't it be a grand copartnership? Let us hurry it up, it will be a stepping stone to the next grand move, a joint ownership to all the land. . . ."

--Fresno Expositor, 1890¹

From the Sierras to the Slough, the campaign for the public ownership of waterways and waterworks received a harsh reception. On the farm, irrigators were reluctant to join public corporations with uncertain water rights. In the city, urban consumers saw municipal ownership as a tax burden and a dangerous infringement of private enterprise. Meanwhile, water companies grew into regional monopolies with little public regulation. Still, an outspoken minority contended that municipalities or public corporations could supply water without the profit margin required by private enterprise. Water companies responded that government-owned waterworks, like governments themselves, were inherently inefficient. Only the triumph of public ownership could prove otherwise.

CALIFORNIA WATER AGENCIES, 1887 TO 1920

From the irrigation reform movement of the late nineteenth century grew the notion that large, powerful water systems, municipal water companies, and other private purveyors of water and power should be publicly owned. In 1887, Assemblyman C. C. Wright of Modesto championed a well-publicized bill which he hoped would allow farmers to band together and confiscate the land, canals, and water rights of large estates. The resulting Wright Act of 1887 set an important precedent. For the first time, the California Legislature had declared that the use of water for irrigation was a "public use," endorsing the condemnation of private irrigation systems by public corporations.² Under the Act, "irrigation districts" could be formed where more than fifty irrigators diverted water from a common source. Districts were empowered to condemn private canals, issue bonds, and levy taxes. Armed with the Wright Act, irrigators set out to break the water monopoly by acquiring whatever water rights they needed to irrigate their own land.³

The Wright Act launched an irrigation boom corresponding to the State's phenomenal land boom of the 1880's. In the last two decades of the nineteenth century, the population of California tripled.⁴ Land promoters and railroad publicists lured settlers with claims of abundant

water available in newly formed or proposed irrigation districts. Unfortunately, district organizers were often more interested in raising money than crops. Newcomers with inflated expectations bought district land at inflated prices and the promoters quickly moved on, leaving naive landowners with the awesome task of excavating the canals. As a result, districts soon fell into financial quicksand. Some attempted to pay off contractors with their own unsound, hastily issued bonds. Others had trouble collecting district taxes. Predictably, thirsty farmers used more water than they claimed or claimed more water than they could effectively use. In addition, districts showed little restraint in limiting their projects to a manageable size. Thus, grandiose schemes such as the proposed Central Canal near Chico were conspicuous failures of the Wright Act.⁵

Other districts were felled by drought. In the late Eighties and Early Nineties heavy rainfall encouraged the formation of some thirty irrigation districts. However, after 1895, eleven dry years followed. The drought seemed particularly severe to newly arrived farmers from wet climates who expected great yields. Six irrigation districts in the Antelope Valley north of Los Angeles--the Armagosa, Big Rock Creek, Little Rock Creek, Manzana, Neenach, and Palmdale--were all stunted by dry weather in their first decade. Of those six, only the Little Rock Creek and Palmdale Irrigation Districts survived, and farmers there waited until 1926 for an adequate water supply.

Of the forty-nine irrigation districts formed in the wake of the Wright Act, only a few survived the century. In 1902, irrigation expert Carl E. Grunsky contended that the legal machinery provided by the Wright Act remained "totally inadequate."⁸ Grunsky recommended that the governor appoint a State watermaster to screen district proposals and endorse district bonds. However, the late nineteenth century was an era of local control. With good reason, Central Valley farmers were suspicious of the railroad-dominated State government and the influence of powerful rivals in Sacramento.⁹

Still the State managed to assert some authority. In the decade after the Wright Act, the California Legislature passed minor amendments in every session. Then, in 1897, a new irrigation bill was steered through the Legislature by Assemblyman Eugene A. Bridgford of Colusa County. The so-called Bridgford Act and subsequent amendments increased the State's powers of review and inspection while stripping irrigation districts from some of their local autonomy. A State securities commission was created to review district bonds and the State Engineer was empowered to veto unlikely proposals. Lest it seem that the State was usurping local power, the Legislature reduced the number of votes required to organize districts from two-thirds to a simple majority.¹⁰

Despite State involvement, not a single irrigation district was organized in the dry decade following the Bridgford Act of 1897. Then rainfall and amendments to the Bridgford Act after 1908, encouraged the formation

FIGURE IV-A

TYPES OF
WATER SERVICE AGENCIES
IN THE STATE OF CALIFORNIA

Rural purveyors: agencies which provide water primarily for irrigation.

- 1) California Water Districts
- 2) Irrigation Districts
- 3) Reclamation Districts
- 4) Resources Conservation Districts

Urban purveyors: agencies which provide water primarily for municipalities and domestic consumption.

- 5) Community Service Districts
- 6) County Water Districts
- 7) Metropolitan Water Districts
- 8) Municipal Utility Districts
- 9) Municipal Water Departments
- 10) Municipal Water Districts
- 11) Municipal Waterworks
- 12) Public Utility Districts

Rural and urban purveyors: agencies which provide water for irrigation and domestic use.

- 13) Commercial Water Districts
- 14) County Water Agencies
- 15) County Water Authorities
- 16) County Waterworks Districts
- 17) Flood Control and Water Conservation Districts
- 18) Individual Proprietorships
- 19) Mutual Water Companies
- 20) Privately Owned Public Utilities
- 21) River Basin Authorities
- 22) Water Conservation Districts
- 23) Water Replenishment Districts
- 24) Water Storage Districts

Sources: State of California, Department of Water Resources, State Alpha Listing of Water Agencies (Fresno: typewritten, November 1976), p. iv; see also, Joe S. Bain, et. al., Northern California's Water Industry (Baltimore: John Hopkins Press, 1966), p. 78.

of sixty-six districts in the next twelve years, 1909 to 1921. Water districts, water storage districts, and other types of water agencies grew alongside irrigation districts in these prolific years. In 1917, the Legislature consolidated the Bridgford Act and supplementary legislation in the California Irrigation District Act, the enabling legislation for the 103 irrigation districts currently serving the State.¹¹

The popularity of the Wright and Bridgford Acts inspired the formation of a host of State water agencies modeled more or less after California irrigation districts. Following the Bridgford Act, unincorporated communities, absentee landowners, urban and industrial consumers all clamored for water districts to serve their own diverse needs. In 1911, city dwellers were granted powers enjoyed by irrigators with the Municipal Water District Law. Like irrigation districts, municipal water districts were empowered to acquire water rights, condemn private water systems, issue bonds, and levy taxes. The Legislature encouraged municipalities to build their own water systems with the Improvement Act of 1911, and the Municipal Improvement Act of 1913. For water lobbyists, the two legislative sessions before the First World War were particularly fertile. In 1911 and 1913, the Legislature enacted legislation for some of the most popular of public purveyors: water districts, municipal water districts, county water districts, county waterworks districts, reclamation districts, and others.¹²

As headgates and spillways passed from private to public hands, the State water bureaucracy was born. After eighteen years of neglect, the office of the State Engineer was resurrected in the body of Nathaniel Ellery in 1907. Ellery headed the newly-created State Department of Engineering which, in 1921, became the Engineering and Irrigation Division of the Department of Public Works. Meanwhile, the Legislature hoped to sort out conflicting claims and the chaos of California water law with the formation of a Water Commission in 1913. In 1921, the Department of Public Works absorbed the Commission as the Division of Water Rights which, in 1921, grew into the Division of Water Resources. Then, in 1956, the water divisions of Public Works achieved departmental status in the Department of Water Resources.¹³

THE FRESNO IRRIGATION DISTRICT, 1887 TO 1930

Nowhere was the fight for publicly-owned canals more spirited than on the Fresno plain. In June, 1887, just three months after the passage of the Wright Act, farmers rallied in Selma to organize an irrigation district. As proposed, the district stretched from the foothills to the Fresno Slough, embracing the Fresno Canal system and all others between the San Joaquin and Kings Rivers. The Fresno Expositor assessed the value of this vast network of dams, ditches, and drains at about \$3,500,000, with an additional \$170,000 a year for maintenance. After three years of rally and debate, promoters raised \$5,000 and petitioned

to incorporate as the Fresno Irrigation District. By mid-March, 1890, the District's petition had swelled to 150 signatures (three times the required amount), including a blue-ribbon list of prominent Fresnoans.¹⁴

At the head of the list was District organizer Joseph P. Vincent--wheat farmer, oil magnate, and former Assemblyman from Fresno County. In the Eighties, Vincent had been a leading promoter of the Enterprise Canal, a constant rival of the Fresno Canal downstream. By virtue of its superior legal claim, the Fresno Canal Company had enjoined Vincent and company from diverting the Kings. Four years later--the Wright Act in his pocket and 150 thirsty farmers at his side--Vincent struck back. "The people," he contended, "have been damaged seriously, time and time again, by the failure to receive water; their homes have been threatened with destruction."¹⁵ To prevent this destruction, Vincent and his followers summoned the Wright Act to wrestle the rivers away from greedy "riparianists" (that is, the Fresno Canal Company) and return them to their rightful heirs, "the people."¹⁶ As radical as the proposal seemed, the district enlisted support from such notables as Chester Rowell--founder of the Republican, Fulton Berry--proprietor of the Grand Central Hotel; and Ingvarf Teilman--the City's foremost hydraulic engineer.¹⁷

However, the opposition was equally vocal. "Let good enough alone," insisted one cautious irrigator. "Private enterprise has developed the grandest system of irrigation in the world. . . . No man need cry in vain for water."¹⁸ Farmers along the Fresno Canal were, by and large, adequately provided for and, therefore, not anxious to divide their water ration with the less fortunate. Among those with secure water rights there was one stark realization: you could irrigate all the land some of the time, and some of the land all the time, but you could not irrigate all the land all the time. As one farmer put it: "A man or woman owning 40 acres in the [Fresno Irrigation] District had just as well go out in the morning and pour a bottle of pale ale on the tract as to depend on District water to irrigate it."¹⁹

On April 19, 1890, the District proposal was put to popular vote as required by law. If the District were a question of those with secure water rights versus those with arid land, then there were fewer "haves" than "have nots." Eight hundred forty-five voted for incorporation, 215 against, and the District was ratified with more than the required two-thirds majority.²⁰ Perhaps it was due to opposition from the City of Fresno, especially among property owners, that the District changed its name to the Selma Irrigation District. Mill owners, homeowners, and other urbanites feared that the new district might tamper with the City's water supply. Thus in spring, 1890, Fresnoans withdrew their support, leaving the newly-incorporated Selma Irrigation District looking like a rural ring with an urban center.²¹

Soon it was clear that the grand design was a glorious flop. On July 14, 1890, District voters turned back a million dollar bond. Bonds were again defeated on December 17, 1890, and on November 16, 1891. Even staunch defenders of public ownership fled to the opposition when they realized that it would cost more than \$4.50 per acre, per year to irrigate their land with District water. A court fight followed in which farmers along the Fowler Switch, the Enterprise, and the Centerville and Kingsburg Canals attempted to secede. However, the District held itself together for fifteen years. Trustees were elected, taxes collected, but not a pint of water was ever diverted. Finally, on February 1, 1905, the bone-dry Selma Irrigation District was dissolved by referendum with a landslide vote of 149 to 1.²²

The disastrous history of the Selma Irrigation District kept the farmers along the Fresno Canal content with private enterprise well into the twentieth century. Between 1897 and 1909, irrigators in Fresno County and throughout the State shelved the Wright Act and used other governmental channels to voice grievances. In 1909, the Fresno Canal and Irrigation Company hoped to escape the yoke of State interference by declaring itself a private, not a public, corporation:²³

The Fresno Canal Company is not a quasi-public corporation but is a corporation organized for the purpose of carrying on business and private enterprises. . . .

However, the Wright Act and its successors had defined irrigation as a "public use" of water. Thus, despite the Company's statement to the contrary, the Fresno Canal Company became a "public utility water corporation" by law.²⁴

As a public utility, the Fresno Canal and Irrigation Company fell under the scrutiny of the State's most active regulatory agency, the California Railroad Commission. Born in the State Constitution of 1879, the Commission achieved a reputation as a whitewash agency for the Southern Pacific. However, in 1911 and 1912, the Legislature fortified the Commission by statute and constitutional amendments. The Public Utilities Act of 1912 granted the Railroad Commission broad regulatory powers over water, power, gas, and transit companies as well as railroads. Then in 1913, newly elected Governor Hiram Johnson and the Republican Progressives arrived in Sacramento on the white horse of the clean government, anti-monopoly crusade. Charged with the "progressive" spirit, the Railroad Commission emerged with an anti-monopoly bent and the power to enforce it.²⁵

During the tenure of the Fresno Canal Company, the Railroad Commission heard scores of complaints from irrigators on the Fresno plain. Downstream landowners protested that the Company gave preferential service upstream. Upstream irrigators complained that the lateral canals were forever choked with debris and in disrepair. Such was the chaos that on March 28, 1914, the Commission decreed seventeen commandments for the

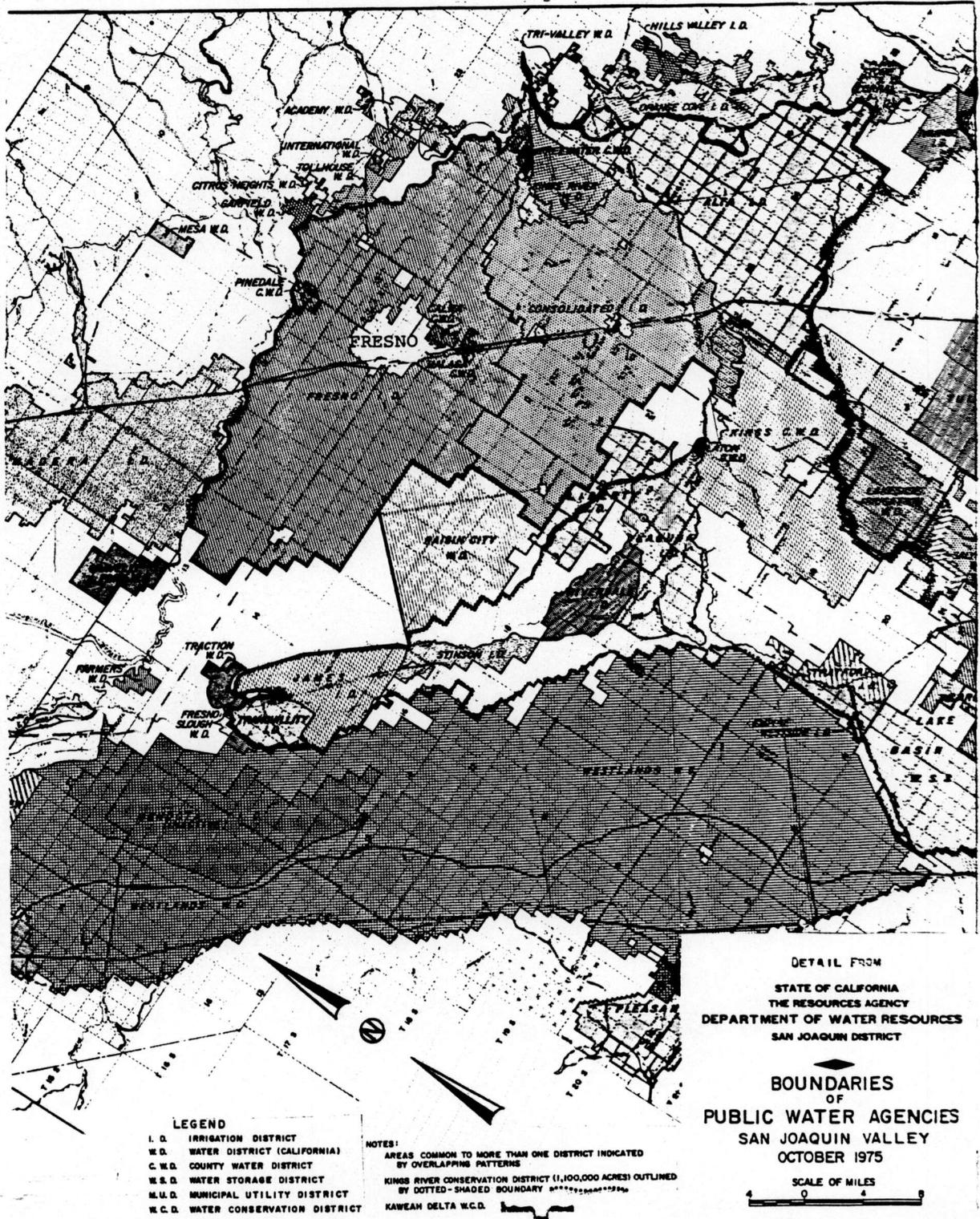
peaceful co-existence of the Fresno Canal Company and its customers. Under the new "rules for operation," firm guidelines were established for the adjudication of water during the dry season. To enforce this adjudication, Company ditch tenders were to visit each headgate daily. Anyone else caught tampering with the headgates would be prosecuted.²⁶

Try as it might, the Railroad Commission could not bridge the ever-widening gap between private enterprise and public ownership. In 1919, the irrigation district movement--dormant for a generation--came alive in a burst of headlines. "WATER USERS CAN CONDEMN PROPERTY UNDER WRIGHT LAW," announced the Republican as if no one had thought of doing it before.²⁷ A week later, an equally large headline responded to the contrary: "LANDOWNERS SHOULD DEAL WITH CANAL COMPANY DIRECT."²⁸ From the plethora of arguments pro and con surfaced three sore bones of contention: water rates, water rights, and water supply. More than others, these three concerns defined the debate which raged from the spring of 1919 until election day, June 26, 1920.

The dispute over water rates revolved around the related issue of valuation--that is, the assessed value of the Fresno Canal Company and all its holdings. Under California law, public utilities could make a profit of 8% on their investment. In other words, a canal company with an assessed valuation of \$1,000,000 could set its water rates to bring in \$80,000 profit annually. One sure way to increase profits was to inflate the value of the corporation. In 1917, the Fresno Canal and Irrigation Company re-incorporated as the Fresno Canal and Land Company. Two years later, the same investors again re-incorporated as the Fresno Canal and Land Corporation. With each name change came the retirement of old bonds and the issuance of new ones; and with each new bond, stock appreciated. By 1919, the Corporation claimed an assessed valuation of \$6,000,000, representing about 500% appreciation in a single decade. If the Corporation were to reap an 8% return on \$6,000,000, the annual cost of irrigating an acre would rocket from 62¢ to \$3.00.²⁹

For many, all the percentage points added up to one stark summation: fraud. In spring, 1919, irrigators hastily organized a defense league to amass statistics and present their own valuation to the Railroad Commission. The Fresno District Water Rights Owners Defense Association, as the irrigators called themselves, soon discovered the basis for the Corporation's astronomical valuation. The Corporation had assessed the value of the water carried by their canals as well as the canals themselves. In addition, the Corporation counted many small, independently excavated ditches as their own. Several natural waterways such as Fancher and Dry Creek were in use as irrigation channels; these too were assessed and added to the total. In August, 1920, attorneys for the defense association summed up the Corporation's valuation in three words, "ridiculous, exorbitant, and absurd."³⁰

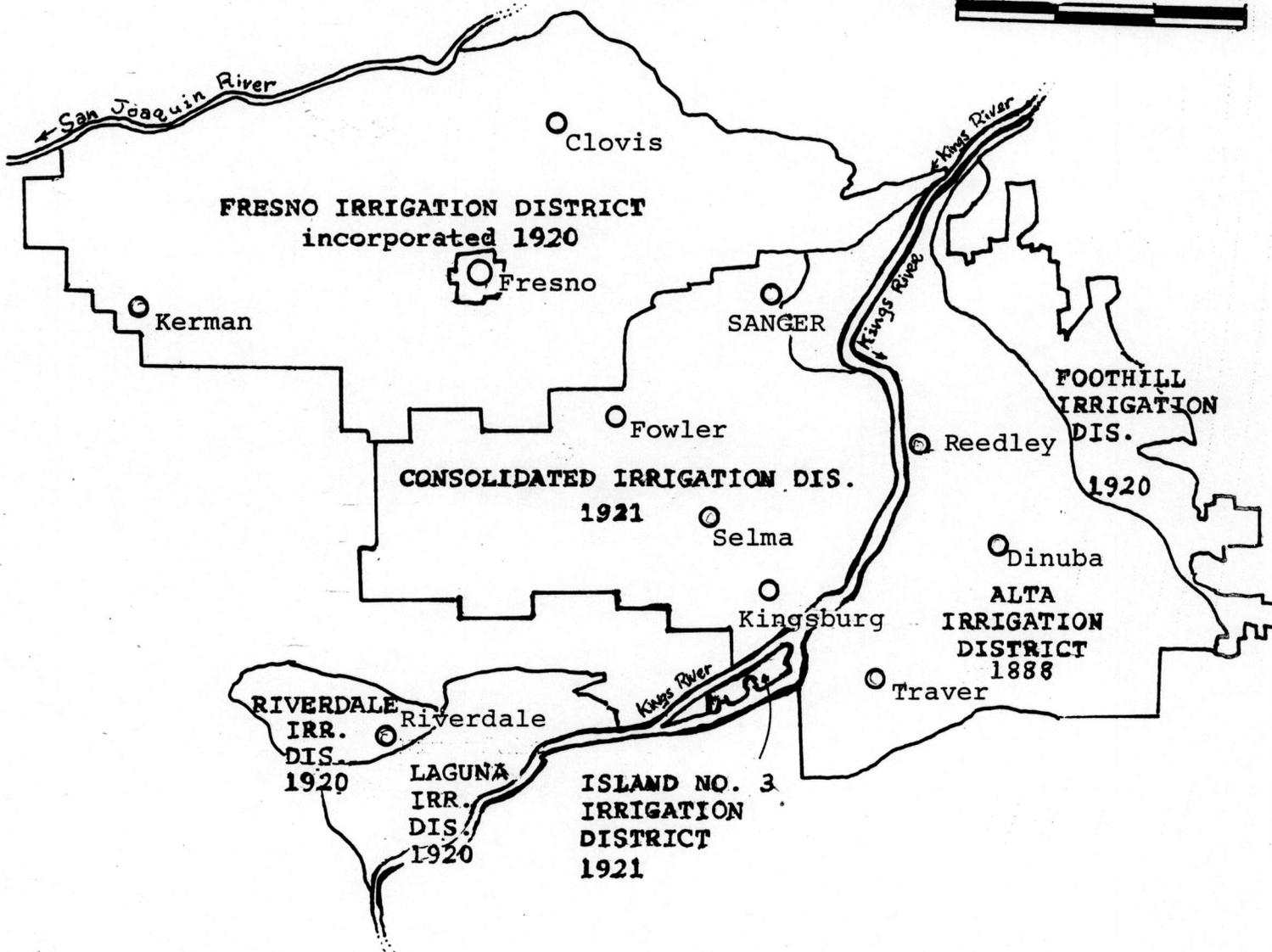
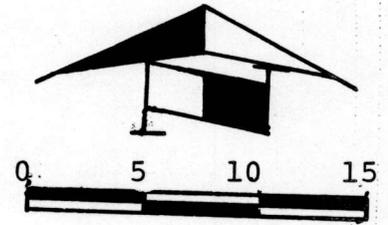
FIGURE IV-B
PUBLIC WATER AGENCIES



IRRIGATION DISTRICTS

ON THE KINGS RIVER

~AS OF 1921~



Sources: Fresno Bee, October, 23, 1935; and State of California, Department of Public Works, Division of Water Resources, Bulletin No. 18-B, 1931 Revision (Sacramento: State Print. Off., 1932), pp. 47-48.

In 1919, the Fresno Canal and Land Corporation brought suit against independent irrigators to determine precisely who owned what. In effect, the Corporation claimed that maintenance and use were nine-tenths of the law. Many ditches and canals of uncertain origins were maintained by the Corporation and, therefore, part of the Fresno Canal system. Attorneys held that the Corporation owned not only the ditch but all the water within. The opposition was led by the so-called "free water men" of the Fresno District Defense Association. Free water men contended that both water and canals belonged to the irrigators. The Corporation, they argued, merely maintained a system which was already publicly owned. In June, the Railroad Commission settled the suit to the dissatisfaction of both parties. The Commission held that the Corporation was a public utility and, as such, canals and water were publicly regulated. However, all contracts would expire in June, 1921. At that time, the Corporation could raise rates to guarantee an 8% return.³¹

The Fresno Canal Corporation may have been publicly controlled, but neither corporation nor customer could pretend that it was publicly owned. Since 1915, for example, irrigators had petitioned the Canal Company to build a major storage reservoir at Pine Flat, twenty-six miles east of Fresno on the Kings River. At the helm of the Pine Flat campaign was Michael F. Tarpey, raisin magnate, miner, and Democratic candidate for Lieutenant Governor in 1886. Tarpey and his colleagues contended that an additional 40,000 acres could be irrigated with stored water. The dam at Pine Flat could be built for an estimated \$9,000,000, the sooner, the cheaper. Yet the Company dragged its feet. Despite a renewed sense of urgency in 1919, irrigators would wait another thirty-seven years for the completion of Pine Flat Dam in 1952 (and it was then built primarily for flood control, see Chapter 5).³²

Thus it was with numerous grievances and great expectations that irrigators banded together as the Fresno Irrigation District (F.I.D.) on July 26, 1920. Unlike the Selma Irrigation District of 1890, the formation of F.I.D. pretended to be no triumph of common-folk irrigators. On the Board of Directors sat some of the wealthiest landowners in Fresno County, including Jesse C. Forkner and Edwin J. Bullard. No one pushed harder for incorporation than officials of the Fresno Canal and Land Corporation itself. For many years, British stockholders had searched for a way to free their Fresno investment. In fact, some thought that the rate hike was a corporation ploy to force public ownership on the complacent. It was, therefore, not surprising to find corporation President L. A. Nares and Chief Engineer Ingvar Teilmann on the list of active supporters. In fact, Teilmann had supported the formation of an irrigation district since 1915.³³

Having incorporated, the District proceeded to negotiate for the sale of the so-called "Moses J. Church system" which in a half century had grown to embrace almost everything that carried water from the foothills to the Fresno Slough, from the San Joaquin to the Kings River. F.I.D. opened the bidding with a hopeful \$1,000,000 for the entire system. The Fresno Canal Corporation came down slightly from their initial

valuation of \$6,000,00 to \$5,350,000. Then, after a month of hard bargaining, the Corporation grudgingly accepted \$1,750,000, a clear victory for the District. Almost simultaneously, the Fresno Canal and Land Corporation shed vast irrigation holdings downstream. In 1921, the remainder of the late great Fresno Canal Company empire was divided among hungry triplets: the Consolidated, Laguna, and Riverdale Irrigation Districts.³⁴

The Fresno Irrigation District was an immediate and lasting success. On February 8, 1921, members approved a \$2,000,000 bond, \$1,750,000 to purchase the Fresno and Gould Canal systems and an additional \$250,000 for improvements. Officially, 260 miles of canals passed from private to public hands on May 16, 1921. Four years later, F.I.D. had doubled the holdings of the former Corporation, serving 9,000 customers through 530 miles of canals. Reinforced concrete replaced wood, earth, and cobblestones; and one hundred regulating stations sprung up along main canals. In 1925, Deputy State Engineer Paul Bailey commended F.I.D. for "the reconditioning of a system that was unfit for satisfactory service but a short time ago."³⁵

So healthy was the new district that it survived severe drought and national depression which, after 1929, felled irrigation districts across the State. On January 1, 1932, F.I.D. retired its bonds as scheduled. Thereafter, the cost of water per acre, per year dropped; from \$2.50 an acre in 1931, to \$1.00 in 1933, to 90¢ in 1934. By then, F.I.D. had grown into the second largest water purveyor, public or private, in the San Joaquin Valley.³⁶

MUNICIPAL OWNERSHIP, 1890 TO 1940

Fresnans had flirted with the notion of municipal ownership almost since the founding of the township. As early as 1876, the informal town counsel had talked of installing public wells for fire protection. However, waterworks remained an empty suggestion until a devastating blaze on July 24, 1882, rekindled the proposal. The following year, Fresnans formed a fire commission and installed public wells and hydrants. Meanwhile, the town's everyday thirst was quenched by private enterprise. Since 1876, the Fresno Water Works (later the Fresno Water Company) enjoyed a monopoly of domestic service, supplying homes and businesses from a single well near the corner of Fresno and "J" (modern Fulton). During the boom years of the 1880's, the Water Company profited and attracted a bevy of out-of-state investors in 1890. However, the community continued to consider waterworks a tax burden rather than a money-making enterprise.³⁷

Nevertheless, a small but vocal minority contended that anything the private sector could do, the public sector could do better. "Experience has shown in many cities," argued a local judge, "that the matter supplied by those holding a franchise, whether water, gas or electric light is often of inferior quality and quantity and is more costly to the consumer

than it should be."³⁸ On September 23, 1889, the City Board of Trustees received a petition for the municipal ownership of all city utilities, specifying the waterworks, the gas company, and the proposed power plant on the San Joaquin River. By 1890, the petitioners were calling themselves the "Nationalists." "We the Nationalists of Fresno," they proclaimed, "hereby request that [the Trustees] take steps in the near future towards supplying a plant, not only for electric light, but also of gas, water and ice works, to be built and maintained by the City. . . ."39

The Nationalist proclamation was hardly radical. By the 1890's, municipally owned waterworks were as common as streetcars in urban America. New York City, for example, had maintained wells at the taxpayers' expense since Colonial times. Philadelphians began the battle over public waterworks during the 1790's; although initial attempts to bring water into the city were expensive failures. However, by 1822 city engineers devised a reliable system of reservoirs and water wheels which brought Philadelphia abundant water at enviable rates. Similarly, taxpayers in Cincinnati had operated their own water system since 1839. From Boston to Chicago, from Seattle to San Diego, municipalities had proven that public waterworks paid.⁴⁰

In Fresno, however, municipal ownership ran against the grain of a community committed to small government and low taxes. It had taken Fresnoans a decade to tax themselves at all and thirteen years to incorporate--that is, to create a legal "city" with salaried officials. Even as an incorporated city, public works were few and taxes minimal. In 1899, for example, the City collected only \$2,361 in taxes. An additional \$25,416 in various fees brought the general fund to about \$28,000. At the same time, the City Engineer estimated that municipal waterworks would cost the taxpayers \$280,000, or about ten times the general fund.⁴¹

Whatever chance the Nationalists had of talking the City into the water business dwindled in 1894. In that year, the Water Company demolished its unsightly tanks and presented the community with the now well-known Fresno Water Tower. In the shadow of the elegant tower, the Nationalist portrait of the Water Company as greedy profiteers hardly seemed accurate. For the next eight years, municipal ownership simmered with little community support. Then in 1901, the Nationalists revived their campaign and put a \$280,000 water bond before the voters. Such a public debt would take forty years to repay in diminishing payments ranging from \$21,000 in 1902 to \$7,350 in 1942. Predictably, the voters rejected the bonds by a two-thirds majority and the Fresno Republican called the whole episode "little more than a farce."⁴² Municipal Nationalism, as such, never resurfaced.⁴³

In subsequent decades, the campaign for municipal ownership revolved around the issue of local ownership. By and large, Fresnoans favored locally-owned businesses, for the community hoped to spread the profits at home. In 1902, Fresno's bankrupt water and power companies were

re-organized by Albert Graves Wishon, a local utility magnate of high standing. Under Wishon, local utilities provided exemplary service at reasonable rates. Then in 1924 and 1926, Wishon's companies were swept up by national corporations: the Federal Water Service Corporation and the Western Power Corporation of New York. Although some protested that Fresno had lost its home-grown utilities, many consoled themselves by the fact that the power company retained its local management even if the profits were now diverted out of State.⁴⁴

On the other hand, Fresnans could no longer pretend that their water system was locally controlled, for the new owners had replaced the local managers with their own men from New York. Exactly who these men were and who employed them remained somewhat of a mystery. After 1925, the Water Corporation sat at the bottom of a huge and amorphous corporate pyramid. Fresno's City Water Corporation was, in fact, owned by the California Water Service Company which was owned by the California Water Service Corporation which was owned by the Federal Water Service Corporation which was "held" by the Tri-Utilities Corporation of New York. At the end of the maze was G. L. Ohrstrom and Company, a Wall Street firm which controlled the stock of Tri-Utilities and all its subsidiaries from New York to Fresno. With the realization that Fresno's water company was part of this national conglomerate came renewed interest in municipal ownership as a means to win back local control and keep profits at home.⁴⁵

Meanwhile, the California Water Service Corporation aggravated its position by inflating its valuation. In January, 1926, the California Water Service Corporation had purchased the Corporation for \$1,800,000. The following year, the Corporation asked the Railroad Commission to re-assess the property at \$3,500,000. California law guaranteed utilities a fair return on their invested capital; and therefore, an increased valuation would justify increased rates. Although the Corporation said otherwise, this was the same ploy that the Fresno Canal Corporation had used to raise rates in 1919. And like the irrigators on the Fresno Canal, urban consumers fought a possible increase in water rates with the threat of public ownership.⁴⁶

In 1929, the municipal ownership campaign was spearheaded by the City's Finance Commissioner, William Glass, and Commissioner of Public Works, Andrew M. Jensen. Glass and Jensen reported that the books of the City Water Corporation showed healthy profits in every year since 1906. In 1926, the Corporation had reaped a \$200,000 profit after taxes. "It is well within the possibilities of the City to make money on the water system," contended Glass. "Why send \$200,000 profits East each year when we can keep it here."⁴⁷ Furthermore, Glass and Jensen hinted that municipal ownership would, in the long run, reduce the City's unpopular property tax.⁴⁸

On the defensive, the California Water Service Corporation implored Fresnans to "THINK before you disturb an ideal situation."⁴⁹ The

FIGURE IV-D

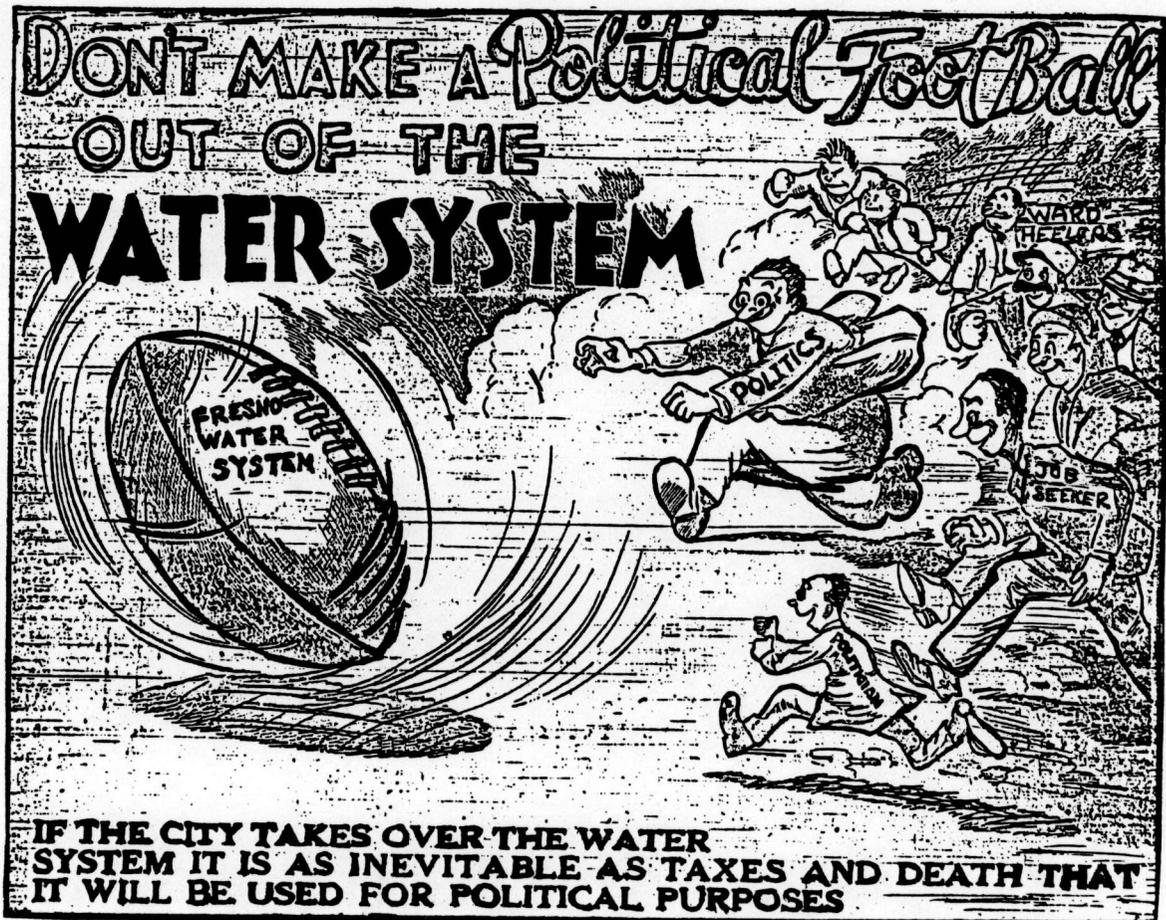
MUNICIPAL OWNERSHIP OF WATER PLANTS
IN EIGHT CALIFORNIA CITIES
1930

	Long Beach	Pasadena	Glendale	San Bernadino	Eureka	Lodi	Tulare	Turlock	Greater Fresno
Population	141,528	75,875	62,607	37,453	15,748	6,778	6,202	4,256	80,000
Number of Consumers	23,850	24,592	15,430	10,614	4,397	2,335	1,516	1,465	18,853
Million Gallons of Water Sold	7,299	4,792		2,155	541		19		8,221
Gallons Per Capita Per Day	141	173		155	94		85		281
Year of Purchase or Construction	1911	1912	1914	1893	1914	1910	1912	1909	1932
Cost of Plant System	2,962,625	5,101,580	2,541,577	1,755,474	270,000	162,246	197,550	183,246	
Total Receipts in \$	906,625	945,507	547,962	232,817	117,846	49,064	36,312	28,845	425,370
Total Expenses in \$	328,034	286,565	197,210	89,386	61,142	14,174	19,226	12,745	226,945
Gross Earnings in \$	578,591	658,942	350,752	143,431	56,704	34,890	17,086	16,100	198,425
Earnings in % of Cost of Plant	19.5	12.9	13.8	8.2	21.0	21.5	8.6	8.8	

Source: Fresno Bee, September 28, 1930.

FIGURE IV-E

CALIFORNIA WATER SERVICE CORPORATION ADVERTISEMENT



Source: Fresno Bee, November 1, 1930.

Corporation boasted that the City could match neither the quality nor cost of the service provided by private enterprise. At about a nickel per 1,000 gallons, Fresno enjoyed the lowest rate of any city in the State with the possible exception of Sacramento. Furthermore, the Corporation declared, "it has never been the intention of the water company to either install meters or [apply] for an increase in rates."⁵⁰ However, the press pointed out that California Water Service Corporation had installed meters in Stockton, Chico, Bay Point and elsewhere. On the other hand, the City Commission (formerly the Board of Trustees) pledged that municipal ownership would insure that domestic consumers remained unmetered.⁵¹

Yet, the California Corporation did enlist some support on the issue of taxation. Municipal ownership required municipal bonds. If water profits could not cover bond payments, then the deficit would be made up in city taxes. On October 22, 1930, the Corporation ran a full-page ad in the Republican listing eight California cities that showed deficits in their municipal water departments for the 1928/1929 fiscal year. Sacramento, for example, had kept its water rates low by asking taxpayers to make up a \$125,847 deficit. Similarly, water department profits fell short of bond payments in Santa Monica, Redlands, Whittier and elsewhere. On the other hand, the Bee listed eight California cities where municipal water departments had made a profit above their bond payments. The City of Lodi, for example, had netted a return of 21.5% on a \$162,246 water bond (see figure IV-D). In the history of municipal ownership, there were successes and failures enough to please both friends and adversaries.⁵²

Meanwhile, the Railroad Commission had assessed Fresno's water system at \$2,370,000, more than a million dollars less than the Corporation's estimate. By August, 1930, the Corporation had run out of appeals and could no longer delay municipal ownership proceedings. On September 18th, Commission of Public Works, C. C. Van Valkenburgh, Jr. proposed a bond of \$2,520,000 "for the acquisition under eminent domain proceeding of a . . . waterworks consisting of all the lands, properties and rights of the California Water Service Company."⁵³ The City Commission then set a bond election for November 4th.⁵⁴

A spirited campaign followed in which the California Corporation ran full-page ads in both papers warning that municipal waterworks would become a "political football," a fountain of patronage and corruption.⁵⁵ On the attack, a host of civic clubs mobilized support for the bonds. The Fresno Labor Council estimated that 98% of organized labor would support municipal ownership. And Fresno Woodmen of the World endorsed the water bond by a unanimous vote. New organizations surfaced as election day approached. There was the Own Your Own Water Plant Club and the Women Water Bond Boosters. City employees also voiced their support. On November 4, 1930, the bond carried by a landslide victory of 10,957 to 3,530.⁵⁶

Officially, private enterprise became public on the morning of January 31, 1931. For \$2,450,000 the City purchased thirty pumping stations (at about \$15,000 each), twelve automobiles, an electrical substation, 230 miles of mains, and an office lease. Perhaps the most coveted acquisition was the Old Water Tower, a community landmark since 1893. In addition, the City acquired the California Corporation's thirty-four person staff, including General Manager Claude H. Weekes. Under Weekes, the Water Department added some \$80,000 of improvements in the next eight years. Eight-inch pipe replaced First World War mains of riveted steel and new electric pumps kept pace with the falling water table.⁵⁷

So profitable was the City Water Department that the Commissioners had trouble spreading the wealth. Finance Commissioner William Glass contended that the City should invest \$120,000 of Water Department funds in government bonds. Legislative Commissioner George F. Sharp preferred to invest in government securities or stock. Eventually, a compromise was reached where by the City purchased some bonds, financed municipal improvements, reduced taxes and lowered the water rate. Taxpayers received a nominal (2%) but symbolic reduction in the City's property tax. The Water Department also added \$8,500 a year to the City treasury to replace the taxes paid by the Water Company. In addition, Department funds financed such diverse "capital improvements" as the widening of Broadway Avenue and the construction of City Hall.⁵⁸

Rate-payers, as well as taxpayers, were the direct beneficiaries of municipal ownership. In 1934, the Water Department returned \$23,000 to consumers in the form of rate reductions. Meanwhile, a campaign for municipal ownership of the garbage franchise called for further demonstration that the City could operate more efficiently than private enterprise. The Commission responded by slashing rates 8% within the City limits and 12% in the County. Then in June, 1936, the City supplied a month of free and unlimited water to domestic consumers. The June rebate continued and rates fell steadily until May, 1939. The City began retiring its water bonds as scheduled in January, 1941.⁵⁹

* * * * *

The sanctity of private enterprise died hard on the Fresno plain. In the 1890's, Fresnans resisted the notion of public ownership while private waterways became public across the State. On the farm, the Selma Irrigation District became the Wright Act's most conspicuous failure--for in its fifteen-year history, the District irrigated not an acre. In the City, municipal Nationalism sounded more like municipal socialism to a community committed to private enterprise and limited government. Meanwhile, private purveyors fortified their markets. The Fresno Canal Company and its affiliates monopolized the Kings while the City Water Company joined a regional purveyor of water and power. As a result, the Fresno Canal remained privately owned until the Corporation

itself was ready to sell. Similarly, by the time the community turned to municipal ownership, Fresno and San Jose were the only California cities above 30,000 without City-owned water systems.⁶⁰

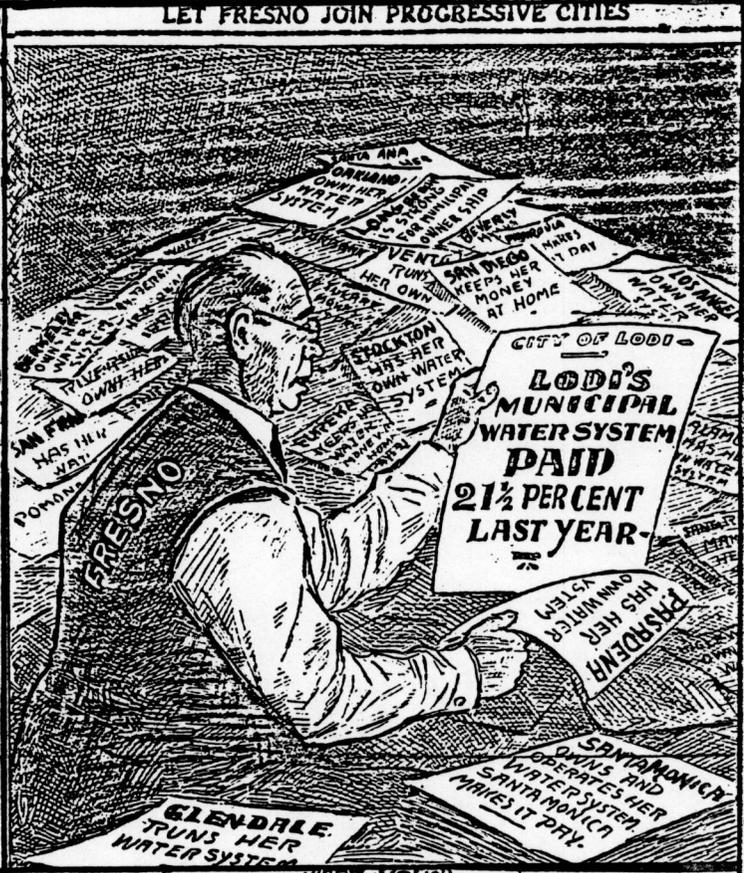
Although a long time in coming, public ownership proved an immediate success. In its first four years, the Fresno Irrigation District doubled its holdings while modernizing an antiquated system. Subsequently, water rates dropped to about one-third of what irrigators had paid the private company. Meanwhile, the District retired its bonds as scheduled. The City Water Department proved equally successful. In its first decade, the Department slashed rates, expanded the system, added storage facilities, and continued the excellent service the community had enjoyed from the private concern. Furthermore, Water Department profits lowered the property tax and financed a variety of civic improvements. After 1932, the success of the Water Department sparked interest in the municipal ownership of waste disposal, the airport, and hydroelectric power. Clearly, in the City as well as the farm, public ownership was alive and well.

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EDITORIAL CARTOONS OF THE FRESNO BEE



GETTING HIS ORDERS



"SEZ YOU?"



Sources (clockwise): Fresno Bee, September 25, 1930; September 29, 1930; October 4, 1930; October 7, 1930.

CHAPTER FIVE

WHAT PRICE FEDERALISM? 1919 TO 1970

An almost unbelievable number of agencies were spawned and in due time became involved in developing, storing, and distributing water in California. It is no wonder that this swarm of jurisdictions--each a self-governing island of special interest--left people feeling helpless and exposed, as in the feudal middle ages.

--Erwin Cooper, Aqueduct Empire, 1968¹

As a very general rule of thumb, California's population doubled every decade of the latter half of the nineteenth century and every other decade since 1900. Nowhere was population growth more evident than in the proliferation of public water agencies, for every migrant brought a thirst and further demands on California's precious yet dwindling resource. In the San Joaquin Valley--the dry, southern two-thirds of the Central Valley--many of these agencies took the form of irrigation districts and rural water associations which lobbied the Legislature and Congress for a vast redistribution of the State's water. The federal government responded, but with the redistribution of water came the controversial re-evaluation of water rights. The rivalry which surfaced in the wake of federal reclamation projects has opened a Pandora's Box of litigation from which the Valley still suffers.

Even as Fresnoans debated municipal ownership, the City stumbled into an intergovernmental thicket as dense as any in American federalism. In 1931, the City filed claim to the San Joaquin River. Thirty-two years later, the claim was finally realized. In the interim, Fresno challenged the federal government, the State, and surrounding irrigation districts in order to defend water rights which had been taken for granted since 1872. Among the side effects was the disturbing articulation of animosity between city and farm which had lain beneath the surface since the nineteenth century. For the City of Fresno, this was the price of a dependable water supply.

THE CENTRAL VALLEY PROJECT, 1919 TO 1965

California is a semi-arid state and yet it contains a region unequalled for its agricultural wealth and diversity--the Great Central Valley. Water flows through the Valley in two major rivers or river systems:

the Sacramento which bears the melting snows of Shasta and the northern Sierras, and the San Joaquin which drains the south. While the Sacramento basin contains about one-third of the Valley's farmland, it receives about two-thirds of the water. The San Joaquin basin contains two-thirds of the land but only one-third of the water. Thus, the Sacramento floods while the San Joaquin basin suffers droughts, and this is the climatic imbalance which Valley farmers have sought to rectify since settlement. Irrigators soon realized that the task of diverting the northern-most floods some 500 miles south was beyond the resources of private canal companies, beyond irrigation districts, beyond even the State. And so in the 1930's, it was left to the federal government to construct the vast network of dams, canals, and power plants known as the Central Valley Project.²

At the close of the First World War, the Central Valley Project took shape in the plans of Colonel Robert Bradford Marshall, chief hydrographer for the U. S. Geological Survey. The war had brought an unprecedented demand for California food and fiber and the farm community searched for a water plan to keep pace with war-time growth. Meanwhile, the water table beneath the San Joaquin Valley fell at an alarming rate. Colonel Marshall addressed the problem with a twelve-page report, published by the California Water Association in 1919. The Marshall Plan proposed a series of dams on the Sacramento River and two canals to funnel surplus water into the San Joaquin Valley. Then, pumps and tunnels would carry the Kern River through the Tehachapi Mountains and into Los Angeles County. Perhaps the most controversial proposal concerned the construction of power plants and transmission lines which, in effect, would place hydroelectric power facilities in governmental hands. Here Marshall was courting formidable rivals.³

The Marshall Plan took legislative form as the Water and Power Bill, passed in the Senate but defeated in the Assembly in 1921. The following year, the Water and Power Bill became a California initiative and went down to defeat in popular election. Leading the counterattack was the Pacific Gas & Electric Company which had its own plans for the power development of the Central Valley. Although defeated, the Marshall Plan remained prophetic. In an era when irrigators rarely thought in millions of dollars, Marshall and his followers were thinking in billions. The sheer audacity of the plan won many converts and forced the State to consider state-wide water management.⁴

Even as the Marshall Plan went down to its first defeat, the Legislature authorized a massive study of California's water resources. A million dollars and ten years later, the State engineer unveiled the State Water Plan of 1931, which became the Central Valley Project Act of 1933. The Act called for two dams and four main canals along with pump stations and power plants. The centerpiece of the project would be a dam at the base of Mount Shasta where the Pit and McCloud Rivers became the Sacramento River. A dam at Friant would impound the San Joaquin and divert the river north through the Madera Canal and south through the Friant-Kern Canal. By way of the San Joaquin pumping system (later the Delta-Mendota Canal), the Sacramento would empty into the San Joaquin and the

Contra Costa Conduit, which would carry fresh water through the Sacramento-San Joaquin Delta. As in the Marshall Plan, the State included provisions for power plants at the dam sites. To pay for it all, the Legislature authorized \$170,000,000 in bonds.⁵

Leading the opposition was P.G.&E. attorney Fred G. Athearn. Athearn hoped to thwart the project by referendum, put before the voters in December, 1933. Although Athearn claimed he acted as a concerned taxpayer, not a P.G.&E. man, his financial support was obvious. On December 7, 1933, the Sacramento Bee published a joint letter from Senators J. M. Inman and Bradford S. Crittenden, exposing Athearn's support;⁶

There was really no doubt, at any time, as to the source of the opposition to this project, but it is well that the public should know--beyond any possibility of contradiction--that the power corporations are the real agencies seeking to defeat California's program of business recovery and unemployment relief. . . We have the spectacle of the power companies using our own money--the money of California rate-payers--to fight a project which is essential to our economic recovery.

However, the power companies were not alone in their opposition to the Central Valley Project. Some thought the project would bankrupt the state. Taxpayers would be paying off bonds for seventy years at five and one-half percent interest. Furthermore, in 1933, farmers suffered more from overproduction than water shortage. During the depression, farm prices fell so low that irrigated land remained uncultivated. At a time when the federal government was paying farmers not to grow, it seemed like great folly to put more land in production. Also, the populated coast would benefit less directly than the Valley. And the 1933 Act made no provisions for the bulk of California's population south of the Tehachapis.⁷

The Project also re-opened the public ownership debate, a familiar theme in the Valley. Opponents charged that unfair governmental competition would bankrupt private purveyors of water and power. Hence, public ownership would discourage private investment. And with the decline of private enterprise would come the rise of public bureaucracy. Under the Act, the Project Authority would consist of three elected officials and two gubernatorial appointees. If a vacancy occurred, the governor could control the Authority with his own replacement. Thus, some feared that the Central Valley Project would soon become a breeding ground of partisan patronage. In a year when Californians debated civil service reform, the patronage issue hit a responsive chord.⁸

Meanwhile, defenders pictured the Central Valley Project as an economic panacea. The Project would employ some 25,000 for three years, indirectly creating jobs for 100,000 Californians. In addition, the State was in danger of losing tax revenue from some 200,000 acres of reclaimed land returning to desert for lack of water. Proponents envisioned the

Sacramento and San Joaquin Rivers as great thoroughfares of trade due to the increased navigability of the rivers. Inexpensive electric power was another attraction. Proponents also noted that fresh water from the Contra Costa Conduit would hold back salt water creeping up the Delta from the San Francisco Bay. This would preserve farmland and protect domestic water systems on the south shore of Suisun Bay. As election day approached, the Project won such influential supporters as the California State Federation of Labor, the Veterans' Welfare Board, the California Grange, the U. S. Bureau of Reclamation, the Army Corps of Engineers, and President Franklin Delano Roosevelt himself.⁹

On election day, December 19, 1933, Californians endorsed the Central Valley Project by the narrow vote of 459,712 to 426,109. While the Los Angeles area opposed the measure two to one, the Project carried by landslides in San Francisco and throughout the Central Valley. In drought stricken Tulare County, voters endorsed the Project twenty to one.¹⁰

However, money remained the missing ingredient. The Depression had so crippled the State's economy that California could find no buyers for its bonds. Fortunately, the Project came at a time when New Dealers were planning public waterworks on a grand scale. In Roosevelt's first term, 1933 to 1937, the Federal Government began such grandiose projects as Grand Coulee Dam (funded by the NIRA) and the water and power development of the Tennessee Valley (under the TVA). And so, in 1935, California virtually begged the Federal Government to take on the Central Valley Project as well.¹¹

There is evidence to suggest that the authors of the Central Valley Project Act had intended the Project to be federally-financed all along. Sections 14, 15, and 26 of the 1933 Act enabled the State to take advantage of the National Industrial Recovery Act (NIRA) and other New Deal programs. In addition, State pamphlets had called for a federal project as early as 1931. Deviously or not, the State project became federal with the Rivers and Harbors Act of 1935. After a brief tug-of-war between the Army Corps of Engineers and the Bureau of Reclamation, the Bureau took control with a cautious appropriation of \$4,200,000. Some \$200,000,000 would follow in the Congressional spending-spree of the subsequent decade.¹²

Construction began in 1937. As amended by the Bureau, the initial Project consisted of two major dams, five canals, power plants and transmission lines. Shasta Dam dominates the north, impounding the Sacramento River and its northern tributaries in California's largest storage reservoir. Nine miles downstream, Keswick Dam provides a regulating after-bay for Shasta. The Sacramento River flows some 180 miles south into the Delta Cross Channel which weaves through the waterways of the Sacramento-San Joaquin Delta and empties into the Delta Mendota Canal near Tracy.¹³

The Delta-Mendota Canal, in turn, carries the Sacramento River another 117 miles into the San Joaquin River at Mendota Pool some 40 miles west

INITIAL FEATURES OF THE CENTRAL VALLEY PROJECT

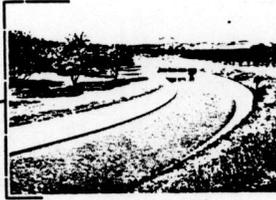


Sources: U.S. Bureau of Reclamation, Central Valley Project (Sacramento: mimeographed report, 1945).

INITIAL SOUTHERN FEATURES OF THE CENTRAL VALLEY PROJECT



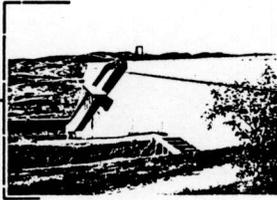
CONTRA COSTA CANAL—



—46 MILES LONG. BRINGS IRRIGATION TO THE FARMS OF CONTRA COSTA COUNTY AND SUPPLIES WATER TO THE TOWNS AND INDUSTRIES ON THE SOUTH SHORE OF SUISUN BAY.



FRIANT DAM—



—STORES THE WATER OF THE SAN JOAQUIN RIVER FOR DIVERSION THROUGH THE MADERA AND FRIANT-KERN CANALS ONTO THE THIRSTY LANDS OF THE SAN JOAQUIN VALLEY AND FOR FLOOD CONTROL.



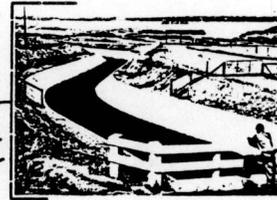
MILLERTON LAKE—



—THE RESERVOIR BEHIND FRIANT DAM—WILL STORE 520,000 ACRE FEET OF WATER FOR IRRIGATION AND FLOOD CONTROL IN THE SAN JOAQUIN VALLEY. IT OFFERS ATTRACTIVE RECREATIONAL ADVANTAGES.



MADERA CANAL—



—DIVERTS WATER NORTHWARD FROM FRIANT DAM FOR IRRIGATION USE IN MADERA COUNTY. IT BEGAN OPERATING DURING THE SUMMER OF 1944.



DELTA CROSS-CHANNEL—
—CARRIES SACRAMENTO RIVER WATER ACROSS THE DELTA FOR TRANSFER INTO THE SAN JOAQUIN VALLEY AND FURNISHES A FRESH WATER SUPPLY TO REPEL SALT WATER INTRUSION.

DELTA-MENDOTA CANAL—
—PUMPS DELTA CROSS-CHANNEL WATER INTO THE FOOTHILLS NEAR TRACY FROM WHENCE IT FLOWS SOUTH TO MENDOTA TO REPLACE SAN JOAQUIN RIVER WATER DIVERTED AT FRIANT DAM.

FRIANT-KERN CANAL—
—160 MILES LONG. DIVERTS WATER SOUTHWARD FROM FRIANT DAM FOR IRRIGATION USE IN THE SOUTHERN SAN JOAQUIN VALLEY.

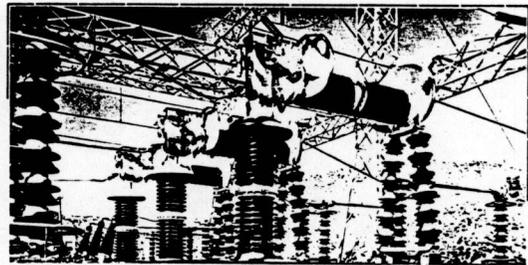


CENTRAL VALLEY PROJECT
POST-WAR AND FUTURE DEVELOPMENT

THE LONG-RANGE PLAN FOR THE CONSERVATION AND FULL BENEFICIAL USE OF THE VALLEY'S WATER RESOURCES ENVISIONS AN ENCIRCLING CHAIN OF DAMS AND RESERVOIRS LINKED BY CANALS. THROUGH THIS CONTROL AND REGULATION, THE BASIC RESOURCE OF THE VALLEY—WATER—WILL BE CHANNIELED FOR THE GREATEST BENEFIT TO THE GREATEST NUMBER IN THE PERFORMANCE OF ITS MULTIPLE TASKS.



IRRIGATION



HYDRO-ELECTRIC POWER

Source: U.S. Bureau of Reclamation, Central Valley Project (Sacramento: mimeographed report, 1945).

of Fresno. Here takes place a curious feat. The Sacramento replaces water from the San Joaquin, cut off sixty miles upstream by Friant Dam. By way of this "exchange of waters," the San Joaquin River irrigates the Valley's east side down to Bakersfield, while water from the Sacramento River flows to the Delta in the riverbed of the San Joaquin. In effect, water from Shasta Reservoir takes a 234 mile detour off its natural course to the Delta. At the Delta, the Contra Costa Canal provides fresh water to urban and rural consumers between Martinez and Antioch on the south shore of Suisun Bay.¹⁴

Friant Dam is the Bureau's southern fortress, impounding the San Joaquin behind 2,000,000 cubic yards of concrete. Upon completion in 1944, Friant was the world's fourth largest dam, exceeded in concrete bulk only by Boulder, Grand Coulee, and Shasta Dams. From Friant, the Madera Canal diverts the San Joaquin 37 miles north to the Chowchilla River. The Friant-Kern Canal carries the river 160 miles south, enabling the cultivation of semi-tropical crops in the driest part of the Central Valley.¹⁵

After the Second World War, the Central Valley Project continued to grow, but at a less frantic pace. Folsom Dam on the American River began as an Army Corps of Engineers project, but, in 1949, was re-authorized as a joint project of the Corps and the Bureau. In the late Fifties, Congress approved the construction of Trinity Project, which diverts the Trinity River into the Sacramento at Shasta Dam. The Bureau also received Congressional authorization for the construction of the Nimbus Dam and power plant, the San Luis Dam, the Red Bluff Division Dam, the Corning Canal and hundreds of miles of canals and transmission lines. By the mid-sixties, Congress had granted the Project some \$1,660,000,000. And the Central Valley Project continues to expand. The Bureau of Reclamation expects to spend another \$2,500,000,000 to keep pace with California's water needs until the twenty-first century.¹⁶

Unfortunately, Californians could not receive Congressional appropriations without Congressional regulations. Most vexing was the 160-acre limitation. This was a feature of the federal Reclamation Act of 1902, strengthened in 1911, 1914, and 1926. The law prohibits the use of federally subsidized water on farms exceeding 160 acres (or 320 acres for a farm jointly owned by husband and wife). Specifically, the 1902 Reclamation Act stated: "No right to the use of water for land in private ownership shall be sold for a tract exceeding 160 acres to any one landowner" Thus, the 160-acre limitation challenges the Central Valley Project's largest consumers: the Southern Pacific Railroad, Standard Oil, the Kern County Land Company, and other land barons of the Valley. In addition, thousands of smaller land companies, ranchers, and family farmers are required to sell off excess holdings in order to receive federal water.¹⁸

Opponents of the 160-acre limitation have charged that modern agribusiness requires large acreage. This was one of many contentions of Sheridan Downey, U. S. senator from California who became the personal nemesis of the Bureau of Reclamation. In 1947, Downey wrote: "The 160-acre limitation is" a symbol of . . . unbridled bureaucracy--the usurpation

of power by a wealthy and unscrupulous federal agency."¹⁹ In this way, Downey and his followers argued that the Bureau's administration of the acreage limitation would undermine the free enterprise system. Indeed, the Communist Party of America supported the limitation for just that reason. On the other hand, the limitation has been defended by the California Grange, the Congress of Industrial Organizations (C.I.O.), the Catholic Rural Life Conference, and other organizations in favor of breaking up the Valley's large estates.²⁰

Such was the controversy that anti-Bureau forces hoped that the federal government would surrender the Project to the State. The State ownership campaign climaxed in 1945, then fizzled. Thereafter, excess landowners have deferred the full effect of the limitation with such tactics as using the Bureau's water to recharge underground water supplies, mixing the water with natural streams, and tying up their contracts in court while working for repeal of the 160-acre limitation. Meanwhile, excess landowners have shopped elsewhere for dams and canals. In 1960, voters endorsed the California Water Plan which looked to the Feather River (a tributary of the Sacramento River) as the source of the State's next billion dollar water project.²¹

RIVALRY ON THE KINGS: 1945 TO 1952

While some excess landowners have turned back to the State, others have discovered that there is more than one door to the federal treasury. The Army Corps of Engineers is also a builder of dams and canals. Officially, there is no overlap between the Corps and the Bureau of Reclamation. The Army's projects are for flood control and navigation; the Bureau's projects are primarily for irrigation. Unofficially, the Bureau has often tread on the Army's domain and vice versa. In the intergovernmental confusion following the Second World War, the Army tended to regard the Bureau as would-be empire builders, attempting to dominate the agricultural community by controlling its most precious resource. The Bureau, on the other hand, saw the Army as a potential roadblock to agricultural reform, a tool of P.G.&E., large landowners and other anti-Bureau factions.²²

After the war, this off-the-record competition surfaced in the Pine Flat Project on the Kings River. The Army Corps received Congressional authorization and \$2,750,000 to dam the Kings at Pine Flat, twenty-six miles east of Fresno. Meanwhile, the Bureau included Pine Flat in their state-wide reclamation plan, with provisions for canals and a power plant. A fiery debate ensued in which irrigators and other factions turned one governmental arm against another.²³

The Army's claim was defended by the Kings River Water Association, representing the irrigation districts on the Kings. The Association reasoned that if Pine Flat became part of the Bureau's system, the temptation would be great to divert a portion of the Kings away from the irrigators who had been using the river since the late nineteenth

century. Charles Kaupke, watermaster of the Kings, contended that the river yielded no surplus. Even with a storage reservoir at Pine Flat, irrigators along the Kings could make good use of every pint. As Kaupke put it:²⁴

We don't want some organization coming on our stream and making a diversion and telling us what is surplus and what is not surplus We have operated these projects for seventy-five years; now the Bureau finds the water rights on the Kings River are complex and involved; therefore the dumb clucks living in this area can't operate them and they should be taken to Washington and administered from there. Do you wonder why we are up on our ears?

Furthermore, there was the bothersome question of the 160-acre limitation. If the Army built the dam, irrigators would be asked to pay about one-third the cost of construction and, in return, receive the Kings as they had for seventy-five years--with no strings attached. On the other hand, the Bureau was bent on social reform. As with most reclamation projects, the irrigators would repay the federal government over decades with no interest. This interest-free loan would amount to a federal subsidy and, as such, would require irrigators to sell off their lands in excess of 160 acres (or 320 acres under California's community-property laws). If enforced, the acreage limitation would mean a social revolution, a radical redistribution of wealth on the Fresno plain and throughout the western states. "I cannot see," proclaimed a representative of the Kings River Water Association, "that our social set-up . . . needs to have its control exercised from over 3,000 miles away" ²⁵ Watermaster Kaupke put it more bluntly; "It would be better never to build the Pine Flat Dam than to have it built under the regulations proposed by the Bureau of Reclamation." ²⁶

Yet Kaupke was not the unanimous voice of all farmers in the Kings River watershed. The California Grange had backed the Bureau all along. To the Grange, the Bureau stood for the small farmer and, furthermore, the Bureau was authorized to build power plants while the Army was not. One member of the Fresno County Pomona Grange made the following statement at a State water conference: ²⁷

To a lot of us in my section it looks like our only real hope to get all there is to get out of the Kings River development is to have the job done by the Reclamation Bureau. It is pure folly to build a fence around the Kings River. It seems to me that . . . the Central Valley will gain the most from the unified development of our remaining water resources. The Bureau of Reclamation has a plan to accomplish this, and what is more important, they have definite and understandable policies under which they propose to do the job. The Army Engineers have stated proudly that they have no policy.

Eventually, it was up to the federal government to bridge troubled waters and the buck stopped, as it always did, at the desk of President

Harry Truman. In 1947, Truman decreed that the Pine Flat Dam would be built by the Army Corps of Engineers as a flood control project. However, the water released for irrigation would be administered by the Bureau of Reclamation. This was a compromise which satisfied no one. Irrigators would pay about one-third the cost of construction for the privilege of storing their water behind the Army's concrete. Once released from Pine Flat Reservoir, use of the river was bound by the Bureau's regulations, 160-acre limitation and all. On the other hand, the Bureau lamented that the Army's dam could not be tied to the Central Valley Project for more efficient State-wide water management.²⁸

In 1952, Pine Flat Dam stood completed, thereafter administered jointly by the Army Corps of Engineers and the Bureau of Reclamation. But the rivalry persisted. A decade-long controversy developed over exactly how much money was being spent for flood control and how much for reclamation. In the middle were the irrigation districts, who, after an involved law suit, were required to pay \$14,250,000 for what the court called "incidental" water conservation benefits (i.e., irrigation benefits). Despite the litigation, irrigators could at least rejoice in the fact that--after forty some years of debate--there was finally a dam and storage reservoir on the Kings River.²⁹

RIVALRY FOR THE SAN JOAQUIN, 1930 TO 1963

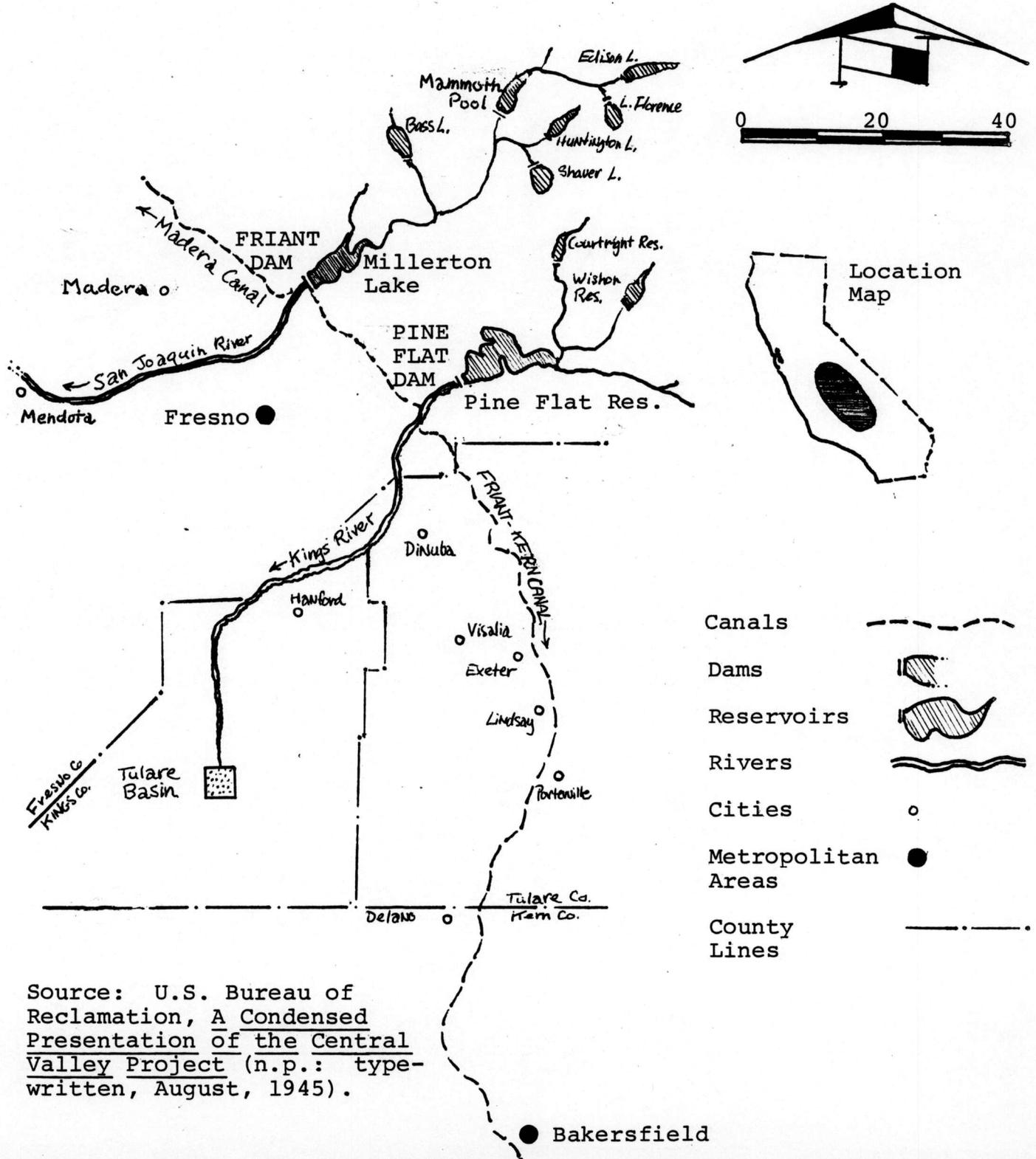
Historically, the San Joaquin River had drained the central Sierras, bearing the melting snows some 250 miles to San Francisco Bay. With autumn rains and spring thaw, the river flooded, and much of the San Joaquin soaked through the river bed into the permeable stratum or "aquifer" beneath. But men and concrete have altered this prehistoric pattern of flooding and percolation. In 1944, the Central Valley Project diverted the San Joaquin north and south while replenishing its westward course with water from the Sacramento. This the Bureau of Reclamation modestly called its "exchange of waters."³⁰

In this great "exchange" lay a man-made gap. A dam held the river at Friant and the Delta-Mendota Canal joined the San Joaquin at Mendota. Between Friant and Mendota lay sixty miles where the river had slowed to a trickle. Ground water was the primary concern, for well owners downstream from Friant blamed the new dam for impounding the flow required to replenish ground water supplies. And so, in 1947, land-owners riparian to (that is, on the banks of) the San Joaquin sued the federal government for hoarding water rightfully theirs. The subsequent decade was one of suit and counter suit in which a national audience watched a legion of well-armed plaintiffs attack the Central Valley Project and the very notion of federal reclamation.³¹

Leading the charge was the City of Fresno with its own historic claim to the San Joaquin. Since the Thirties, Fresnoans had hoped to modernize the water system by adding surface water to the over taxed ground water

FRIANT AND PINE FLAT

FEDERAL WATER PROJECTS ON THE KINGS AND SAN JOAQUIN RIVERS



Source: U.S. Bureau of Reclamation, A Condensed Presentation of the Central Valley Project (n.p.: type-written, August, 1945).

supply. In 1930 and 1931, the City had applied to the State Water Rights Commission for the right to 175,000 acre feet of the San Joaquin River annually. Such a diversion could support an urban population of 500,000 and increase the City's water supply sixfold. Public Works Commissioner C. C. Van Valkenburgh predicted that so-called "surplus waters from the San Joaquin" would keep pace with urban growth for the next fifty years.³²

In reality, there was no such thing as "surplus" water in the San Joaquin. Every gallon of the river had been claimed many times over by the twentieth century. Nevertheless, the City boldly announced its plans to capture the alleged surplus with a municipally-owned dam and storage reservoir at Friant. The Fresno Irrigation District also hoped to be the architect of Friant Dam. The District proposed to tap the reservoir with a canal and the City proposed a pipeline for the same purpose. To complicate matters, the Madera Irrigation District threw in its own bid to build a dam in the same location. While City and irrigation districts fought among themselves, Californians ratified the Central Valley Project on December 12, 1931. Subsequently, dam building at Friant became the charge of the Bureau of Reclamation under the U. S. Department of the Interior. Yet the City's claim to the San Joaquin, however impotent in 1931, would remain on the books to become a useful trump in the water rights hearings of the next thirty years.³³

Even as the Bureau turned the first spade at Friant, protest sounded downstream. In February, 1936, riparian landowners held a mass meeting in Kerman to denounce the proposed dam. A similar group met in Madera. Undaunted, the Bureau forged ahead into the Forties, pushing hard for completion during the Second World War. In 1944, while the allies recaptured Europe, Friant Dam put valuable acreage into the battle at home for food and fiber. From Friant, the Madera Canal diverted about 700,000 acre feet per year north; the Friant-Kern Canal diverted 2,900,000 acre feet south. This left some 910,000 acre feet, about one-fourth the natural flow, heading west on its historic course to the Delta. By 1945, farmers 150 miles away from Friant were irrigating their crops with its bounty.³⁴

Of course, irrigators just a few miles downstream were less fortunate. Along the former alluvial plain on the late, great San Joaquin, farmers and ranchers turned to year-round agricultural pumping. Then, quite suddenly, nature seemed to strike back. Wells began "breaking suction" and spitting up brine. The water table fell five feet a year in places, and irrigators sunk wells deeper and deeper to keep pace (see figure V-D). In 1947, riparian landowners filed suit against the Bureau of Reclamation and its parent agency, the Department of the Interior. Although many law suits followed, the press latched on the names of the initial plaintiff and defendant, and the rivalry on the San Joaquin became nationally known as Rank versus Krug.³⁵

Everett G. Rank, the plaintiff, was one of 1,100 riparian landowners between Friant and Mendota Pool. Julius A. Krug, the defendant, was

Secretary of the Interior and, as such, was the cabinet officer responsible for the Bureau's controversial policies out west. Initially, anti-Bureau forces had high hopes for Julius Krug. However, Krug struggled to keep the Bureau on the path of his predecessor and, for his pains, became one of the most cursed men in the San Joaquin Valley.³⁶

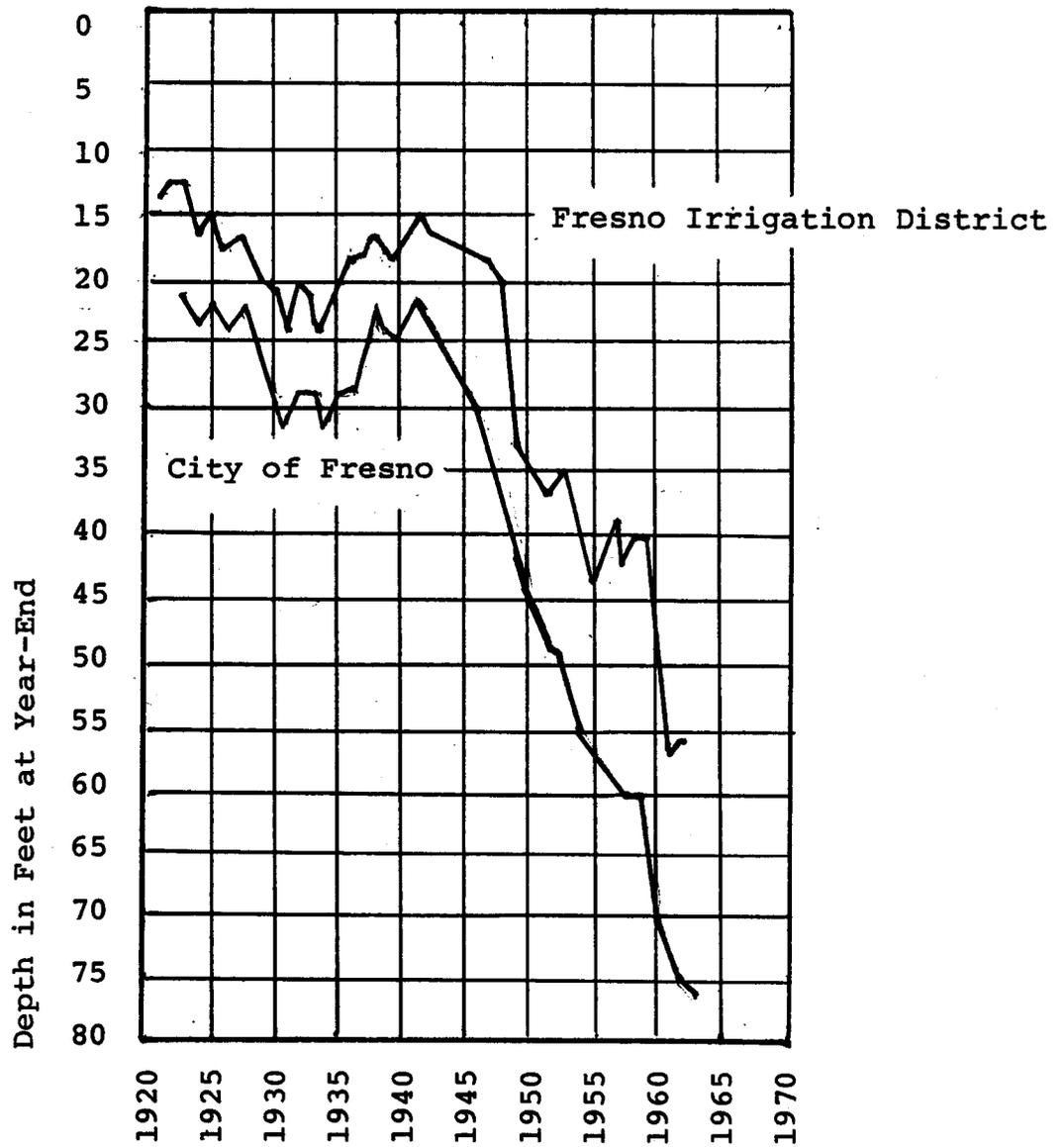
Riparian landowners were not the only ones cursing Krug. The water table beneath downtown Fresno had fallen about seven feet during the Second World War and continued to sink at an alarming rate. Wells that had been pumping water at thirty feet in 1945 had dropped to forty-five feet in 1950. But the City played its hand cautiously, waiting for the outcome of Rank v. Krug. Then, in 1951, the City was forced into action by an unforeseen complication. The Bureau of Reclamation announced that Fresno would have to pay \$10 an acre foot for water from the Friant-Kern Canal. This was an outrage, for farmers as far south as Bakersfield paid only \$3.50 an acre foot. Thus, Fresno was being asked to pay thrice for water the City had claimed as its own twenty years earlier.³⁷

With the realization that nothing would be won without a fight, the City filed suit against the Bureau of Reclamation on January 8, 1952. This was a "companion suit" to Rank v. Krug, and Fresno hired Rank's attorney, Claude L. Rowe, to argue the City's case as well. Under Rowe's counsel, Rank and his neighbors had already won the first round in Superior Court. The case was appealed to Federal District Court in Los Angeles and the riparianists were also expected to win there. In the meantime, the Tranquility Irrigation District (west of Fresno at Mendota) entered the ring on behalf of the plaintiffs. The State of California, also responsible for the location of Friant Dam, became an "intervening defendant" in support of the Bureau of Reclamation. Lest the verdict be announced before Fresno advanced its own claim, high-priced consultants were flown in from San Francisco and Phoenix to map the course of ground water beneath the City. When the trial re-opened in January, 1952, the plaintiffs expected a quick victory. But the City's part in the San Joaquin water rivalry had just begun.³⁸

The City's case rested on the contention that Friant Dam had cut off Fresno's underground supply. Special witness Charles H. Lee testified that over-pumping had created a "cone of depression" in the water table beneath downtown Fresno (see figure V-E). Whereas the cone had hugged close to the central city in the Twenties, it had crept north toward the river since the construction of Friant Dam. Lee's testimony was supported by Harvey H. Shields, manager of five county waterworks districts between the City and the river. Shields noted that wells in the Fig Garden District had fallen eight feet in five years. The evidence suggested that the City's ground water supply was fed from the north and northeast, and that the supply had been impounded upstream.³⁹

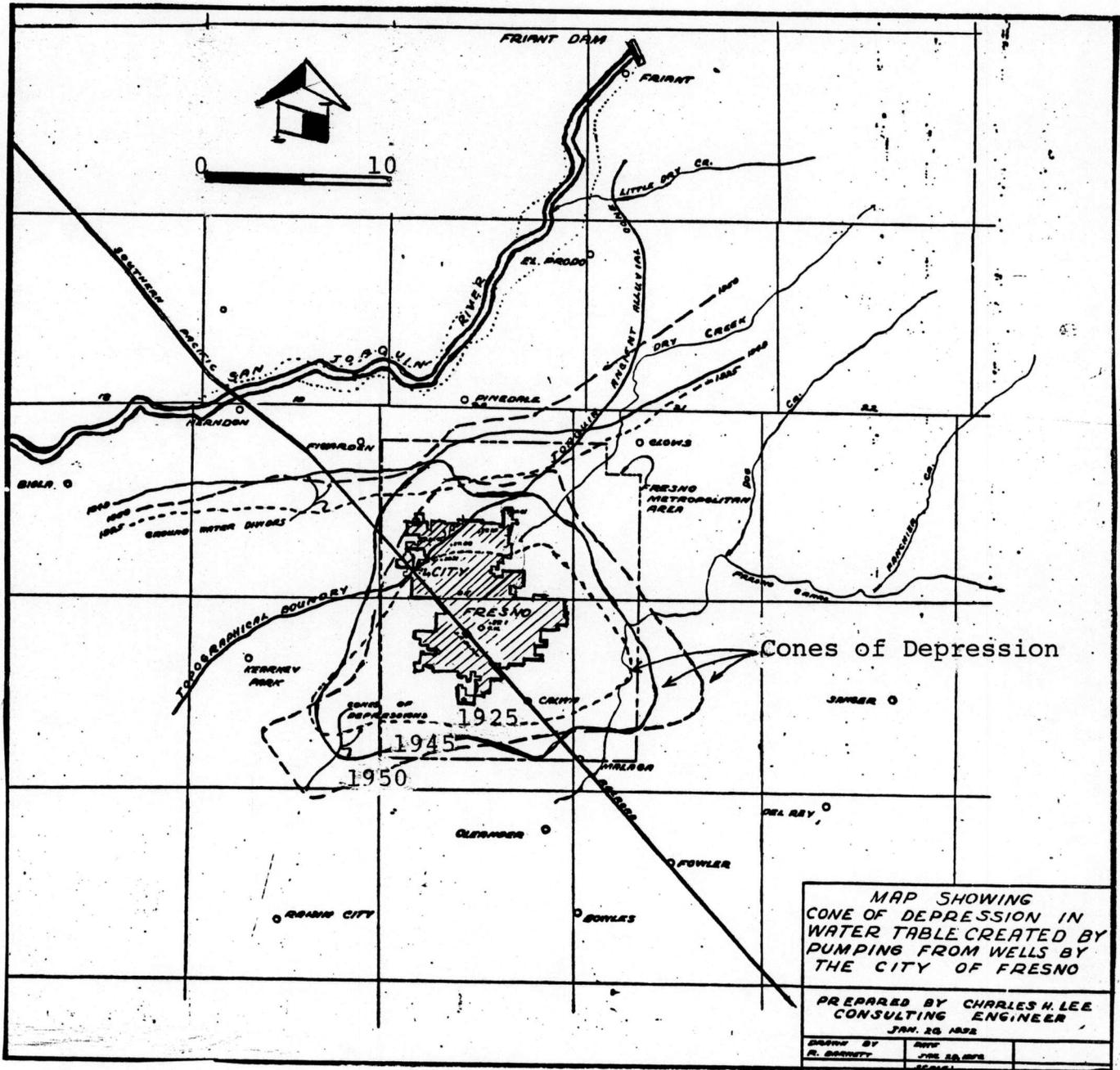
The defense countered that Fresno itself was to blame for the City's so-called "cone of depression." Since the Twenties, the population of Fresno had doubled, swelling from 45,000 in 1920 to 90,000 in 1950. Most of this growth had occurred north of downtown, precisely where the water table had most recently fallen. The defense asked: might it not

FALLING WATER TABLE:
GROUND WATER DEPTH IN AND AROUND FRESNO,
1922 TO 1963



Source: James E. McCormick, "The Fresno Irrigation District" (Worcester, Mass.: unpublished M.A. thesis for Dept. of Geography, Clark Univ., 1965), figure 3, taken from Fresno Irrigation District Annual Reports.

MAP SUBMITTED IN EVIDENCE BY CITY CONSULTANT CHARLES H. LEE,
 CITY OF FRESNO VERSUS U.S.A., ET. AL.,
 JANUARY, 1952



Source: Central Files, PWDCF.

be more logical to assume that urban consumption was responsible for the falling water table rather than a dam some twenty miles away? The water table, after all, had fallen in neighboring regions where there were not new dams. Furthermore, the Bureau's experts claimed that the City had been pumping from depths higher than the bed of the San Joaquin River. Thus, the Bureau mused that the City would have water run uphill to support its claim. Red-faced, the City's experts recessed to examine their notes.⁴⁰

It was left to City consultant Charles Lee to fashion a rebuttal. Armed with reams of colored maps, Lee contended that the ancient San Joaquin had flowed through the site of modern Fresno in paleolithic times. Dinosaurs, it seems, tread a frequent path from the foothills along the ancient river to watering grounds near Fresno. Milleniums passed and remains of these prehistoric creatures became the permeable layer of fossiliferous rock through which the ancient river still ran. As fantastic as this story sounded to many, it contained a measure of geologic truth. Recent studies have shown that ground water beneath the City moved southwesterly from the San Joaquin to the Fresno Slough and beyond. To a lesser degree, the City's underground reservoir tapped the Kings River, imported to the plain by irrigation canals. Perhaps Fresno had no paleolithic pipeline per se, yet there was evidence to suggest that water from the San Joaquin had run beneath the City and that man and his works had altered this prehistoric pattern.⁴¹

In this way, City and Bureau bantered back and forth for a year and one-half of continuous testimony. Then, on August 4, 1953, the District Court of Appeals rendered judgment: the Bureau of Reclamation had been impounding water "illegally" behind Friant Dam. The City had won; the Bureau had lost . . . temporarily.⁴²

A full decade of appeals would follow. First the Bureau appealed; then the State appealed. In April, 1955, the City won another round and the State appealed again. With each appeal came various compromise proposals. The Bureau could hardly tear down Friant Dam, so the State proposed to compensate the City with a series of smaller dams designed to simulate the effects of seasonal flooding. These "check dams" would create a twenty-one mile reservoir below Friant. Yet all the City really wanted was permission to tap the existing reservoir for the going agricultural rate--\$3.50 an acre foot. Meanwhile, the Bee estimated that the trial was costing the City \$4,000 a day.⁴³

Ultimately, the City would win the battles but lose the war. On February 6, 1956, the U. S. Court of Appeals re-affirmed Fresno's claim and granted the right to the San Joaquin at the agricultural rate. Immediately, sharp cries of protest echoed throughout the Valley. If the federal government had no right to impound water at Friant, then the legal basis of the Central Valley Project and the constitutionality of federal reclamation were in jeopardy. Thus, thousands of farmers along federally built canals considered the City's victory a direct threat to their own livelihoods. Especially concerned were the fourteen irrigation districts fed from Friant Reservoir. "They were clawing at us," protested James F. Sorenson of the Orange Cove Irrigation District. "I'd worry a heck of a

lot more about the City of Fresno rather than Southern California taking our water."⁴⁴ Such protest along with the combined appeal of irrigation districts and the federal government would sway the courts in the 1960's.⁴⁵

On April 1, 1961, the U. S. Ninth Court of Appeals denied the City's claim to the San Joaquin. Simultaneously, the court overruled the claim of Everett Rank and the riparian landowners below Friant. Then on April 15, 1963, the Supreme Court affirmed the Bureau's constitutional right to divert water from one watershed to another. "It appears clear," wrote justice Tom C. Clark, "that Fresno has no preferential rights to contract for the (Central Valley) Project water . . ."⁴⁶ Muted within the final verdict lay the armistice to three decades of intergovernmental rivalry. Fresno, the vanquished, signed a contract to tap Friant Reservoir at \$10 an acre foot. And the U. S. Bureau of Reclamation, the victor, continued the redistribution of the Valley's most coveted resource.⁴⁷

CITY AND FARM. 1948 TO 1960

"There is a sneaking suspicion lurking in the rural brain," contended the Fresno Expositor, "that city folk live in the ease and luxury furnished by the brawn and sinew of their country cousins."⁴⁸ These were the sentiments of the 1890's, but they were echoed by later decades as well. Urban-rural contention invariably surfaced when water was in short supply, for both city and farm claimed the rivers as their own. On the Fresno plain, urbanites had resisted the formation of an irrigation district since 1890. Fresno homeowners, mill owners and the business community at large envisioned the Fresno (later Selma) Irrigation District as a front for greedy farmers who would hoard domestic water for cattle and crops.⁴⁹

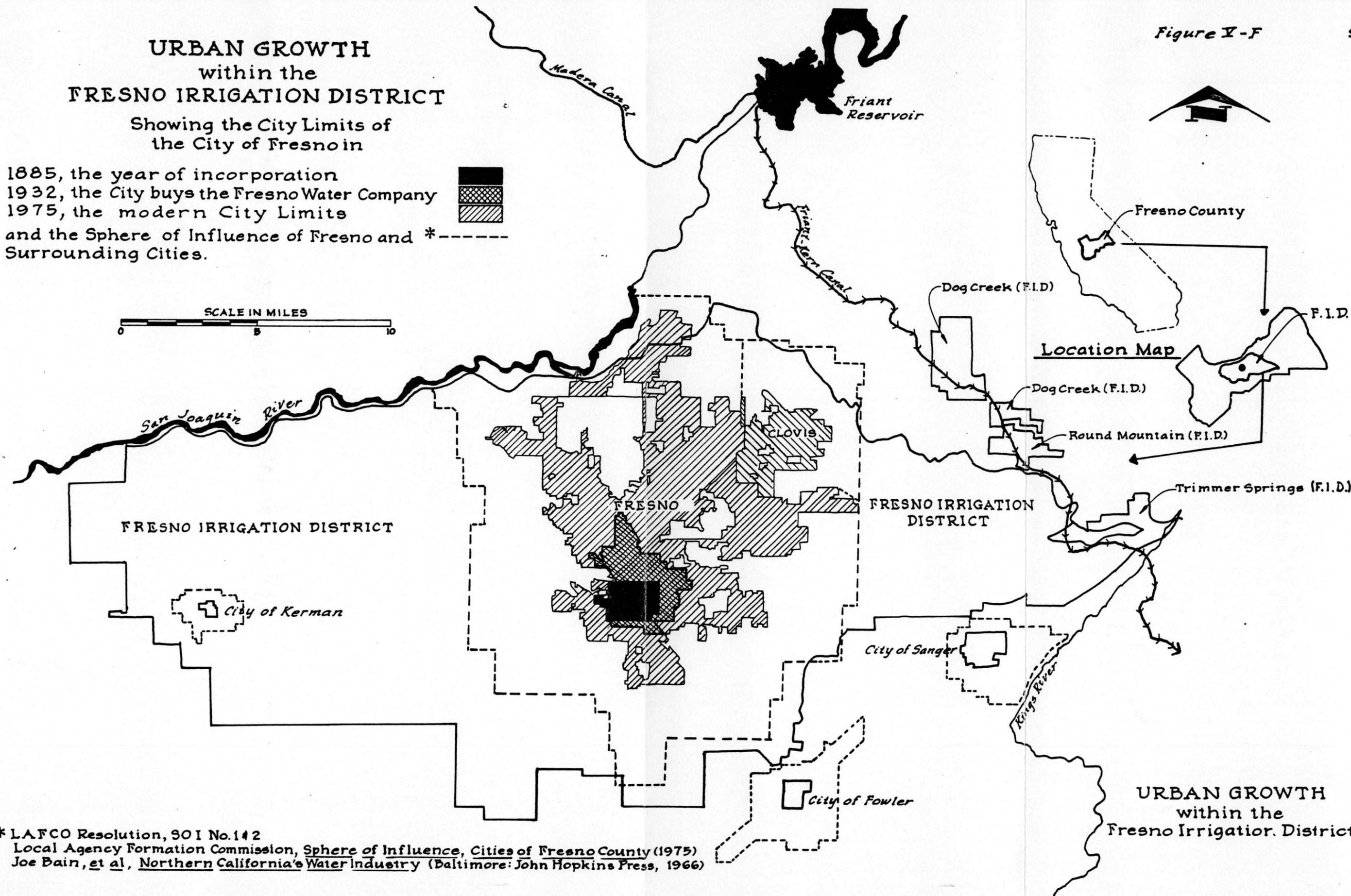
The suspicion was mutual. When the Fresno Irrigation District organized in 1920, the City of Fresno remained an independent island inside the District but outside its jurisdiction. However, mutual exclusion did little to quell the water rivalry on the horizon. Beginning in 1948, the District and the City brought conflicting claims before the State Water Rights Board. Both contended that Friant Dam had cut off underground supplies and both hoped to make up the deficiencies with surplus water from the San Joaquin. The District, however, accused the City of claiming more than its fair share based on an overestimate of population growth.⁵⁰

Furthermore, there were the issues of urban sprawl and taxation. Since the Twenties, the City of Fresno had grown rapidly into F.I.D. territory (see figure V-F). As orchards became subdivisions, the district diverted the Kings elsewhere. Yet, city dwellers within the District were still required to pay an irrigation tax to maintain the canal. In 1951, City attorneys submitted a bill to the State Legislature which would exempt urbanites from the District's tax. "We want to get to the point,"

URBAN GROWTH within the FRESNO IRRIGATION DISTRICT

Showing the City Limits of
the City of Fresno in

1885, the year of incorporation
1932, the City buys the Fresno Water Company
1975, the modern City Limits
and the Sphere of Influence of Fresno and *
Surrounding Cities.



* LAFCO Resolution, SOI No.142
Local Agency Formation Commission, Sphere of Influence, Cities of Fresno County (1975)
Joe Bain, et al, Northern California's Water Industry (Baltimore: John Hopkins Press, 1966)

URBAN GROWTH
within the
Fresno Irrigatior. District

explained City Commissioner Chester H. Cary, "where people who come into the City are not made to pay for something they do not use."⁵¹

However, the District emphatically claimed the city dwellers did indeed use the District's canals. Irrigation canals diverted the Kings River onto the plain where much of it percolated into the aquifer beneath and was the primary source of the City's supply. The controversy erupted in December, 1954, when District Manager Carl J. Gronlund made a startling proposal. The Fresno Irrigation District would ring the City with pumps to reclaim Kings River water which had seeped into Fresno's underground supply. Furthermore, canals would be lined with concrete to insure that no urbanite watered his lawn with District water. These were idle threats, yet they seemed real enough at a time when the water table fell several feet a year.⁵²

There would be more such threats and counterthreats as city and farm fought over ground water supplies. At one point, Mayor Gordon G. Dunn accused irrigators of using "Hitler-like" tactics to wrestle away the City's supply.⁵³ "We in the City of Fresno," the Mayor explained, "feel that all underground water within the boundaries of the City belongs to the citizens of Fresno. We have no quarrel with the Fresno Irrigation District . . . as regards to waters which are captured . . . by means of their water works system; but we do feel that those waters, which through the age old processes set up by nature come within our boundaries, are ours by subterranean water right."⁵⁴

At the end of the decade, President Eisenhower declared "City-Farm Week," a time for urban and rural communities to settle their differences in a spirit of good will. It was timely advice for the water rivals on the Fresno plain.⁵⁵

* * * * *

The water rivalries of the 1950's may well have left Fresnans with a somber query: what is the price of federalism? The City of Fresno stood within fifteen miles of two great rivers; and yet, the federal government was astride both the Kings and San Joaquin, exporting their bounty to other counties and watersheds. While Fresno remained thirsty, farmers 150 miles away irrigated their crops with water that had historically replenished the City's supply. Meanwhile, the average depth of the water table had fallen from twenty-two feet to seventy-seven feet in the post war decades. Similarly, the water table beneath the Fresno Irrigation District had, on the average, fallen from fifteen feet to fifty-five feet in the same period. The rapidly diminishing ground water supply renewed a volatile urban-rural rivalry which had smoldered since the nineteenth century.

On the other hand, the price of federalism was not so great. With Friant and Pine Flat, Fresnans received a level of reclamation and flood control which could never have been attempted by local agencies.

Furthermore, much of the wealth brought to the plain by federal reclamation trickled into the metropolis. Thus, in 1971, the City began to recharge its ground water supply with surface water from the Friant-Kern Canal. The \$10 an acre foot price tag--seemingly exorbitant in the 1950's--was considered a reasonable, even enviable rate in the drought years of the 1970's.

If the Fifties were years of intergovernmental strife, then the Sixties were years of reconciliation. In 1963, the Legislature attempted to settle territorial disputes among public agencies through Local Agency Formation Commissions (LAFCO's). In Fresno, LAFCO was instrumental in arresting the proliferation of water districts which had become a source of considerable friction between City and County. In the meantime, City and County handed common problems of flood control and drainage to a single agency--the Fresno Metropolitan Flood Control District. The City and the Fresno Irrigation District also reconciled their differences in the years following Rank v. Krug. In 1972, City and District entered into an agreement whereby F.I.D. received a gallon of treated wastewater southwest of town for every half gallon of Kings River water the District delivered to infiltration beds northeast of town.⁵⁶

By the Seventies, it was clear that cooperation, not conflict, would be the heritage of federal reclamation. With the turbulent Fifties behind them, former rivals were able to chart a new course into the calmer waters of regionalism.

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FIGURE V-G

IMPORTANT DATES
IN THE SAN JOAQUIN WATER RIVALRY,
1928 TO 1971

- 1928 Fresno Irrigation District begins negotiations for the purchase of a dam site at Friant.
- 1930 and 1931 Fresno claims 175,000 acre feet of the San Joaquin and announces its own plans for a dam at Friant.
- 1931 through 1937 Friant Dam becomes part of the State's, then the federal government's, Central Valley Project, thereby superseding plans for a locally-built dam.
- 1944 Friant Dam completed.
- 1947 Everett Rank sues Bureau of Reclamation for diverting the San Joaquin River through Friant Dam.
- 1952 Fresno files suit in federal district court for right to buy water from Friant Reservoir.
- 1953 Fresno wins suit but Ninth District Court of Appeals suggests that the United States be made a co-defendant with the Bureau of Reclamation.
- 1954 Entire suit retried.
- 1956 Fresno wins again. City obtains right to buy water from Friant at the agricultural rate: \$3.50 an acre foot.
- 1957 U.S. Court of Appeals dismisses appeal by State of California.
- 1958 United States and irrigation districts complete appeal.
- 1959 State Water Rights Board validates Fresno's claim but concedes right of federal government to set water rates.
- 1961 Ninth District Court of Appeals denies Fresno's claim. City draws contract with the Bureau of Reclamation for 60,000 acre feet per year from Friant for \$10 an acre foot.
- 1963 U.S. Supreme Court uphold federal court's denial of the City's claim. City signs 1961 contract with Bureau.
- 1971 Fresno Irrigation District delivers Friant water to City infiltration beds. Recharge program begins.

CHAPTER SIX

PAST AND PRESENT: 1850 TO 1978

Fresno is to be a manufacturing center, a great market for . . . industry, a Mecca for capital. . . . The boundaries of our corporation will be expanded and change from a big town to a great city. No picture the pen can paint will tell sufficiently of our limitless possibilities.

--Fresno Expositor, 1890¹

True to the prophecies of the 1890's, Fresno has become a center for industry and agriculture, the largest metropolis of the San Joaquin Valley. Much of urban as well as rural growth was sparked by the agricultural bonanza of the post war decades. In these years, cotton became the region's number one export, with grapes second and cattle third. Since 1950, the Valley's bountiful harvest has placed Fresno County first in the nation in total value of agricultural production.² The City has grown alongside the farm community and shared in its prosperity. As in the County at large, the Fifties and Sixties were Fresno's growth decades with the City's population rocketing from 91,000 in 1950 to 166,000 in 1970. Today, the City hosts some 190,000 residents, enveloped by a metropolitan area of about 323,000. Planners expect another 200,000 to arrive by the twenty-first century.³

A glance at the map reveals that urban growth has been fraught with jurisdictional growing pains. Fresno is clearly a victim of what planners call "leapfrog growth," for the city limits have leaped over older unincorporated areas to encompass newly developing neighborhoods miles away (see figure VI-A). Leapfrogging annexations have left the City looking like an abandoned puzzle with several dozen missing pieces. The missing pieces represent county islands, all served by various forms of special districts. Special districts provide water, sewers, street lighting, recreation, and other municipal services normally provided by city governments. Of the sixty-some special districts serving Greater Fresno, more than half provide water. In addition, there are fourteen private purveyors and countless independently owned wells (see figure VI-B). Such is the proximity of Fresno's public purveyors that nextdoor neighbors can be served by different water agencies.⁴

The State Legislature has attempted to unravel this jurisdictional web with the Knox-Nisbet Act of 1963. The Act created local agency formation commissions (LAFCO's), regulatory agencies with the charge of minimizing territorial disputes among local agencies. These new

commissions replaced the more limited authority granted to county boundary commissions. In Fresno, LAFCO designated each local agency its "sphere of influence" in 1975. Essentially, this is an agency's jurisdiction, an area it may dominate without fear of encroachment from rival agencies. In practice, sphere of influence lines are "no trespassing" signs erected by LAFCO and, for the most part, respected by the local agencies themselves.⁵

The City of Fresno also has its sphere of influence. This is a sprawling area of about 150 miles, generally considered to be an approximation of the city limits twenty years hence. If and when this expansion occurs, Fresno would cover about one-third of the surrounding Irrigation District. Opponents of city expansion have questioned these long-range plans. Farmers contend that cars and concrete will defoliate prime agricultural land. Suburbanites fear that annexation will raise taxes and spoil the rural charm of their neighborhoods. If the City ceases to grow, then small water districts and independent companies may continue to serve unincorporated county islands. On the other hand, the continuing pattern of annexations may mean that the City will be the sole purveyor of water in its jurisdictional area. This, then, is the issue which currently holds the fate of community water systems--public and private, urban and rural--in and around the City of Fresno.⁶

* * * * *

"There is plenty of water around," observed a Valley farmer. "The trouble is, there's just too much farming going on."⁷ Therein lies the story of burgeoning city and farm competing for a more or less static water supply.

The competition began almost with settlement. In the 1870's, early irrigators diverted the rivers where they pleased, with ambiguous claims and little time to sort out the convoluted passages of the State Water Code. A farmer simply built a dam, dug a ditch, and let his neighbor downstream worry about the consequences. However, this haphazard tradition of appropriation would eventually lead to bitter, often violent, rivalry when there were more crops than water. Out of the chaos rose the water monopolists--a few men with the foresight to secure title to the rivers and the power to defend their claims. By the turn of the century, both the Kings and the San Joaquin were firmly in the grip of giant land and water corporations powerful enough to lock the headgates of the Central San Joaquin Valley.

City as well as farm underwent the process of monopolization by regional water corporations. When the Southern Pacific founded its Fresno Depot in 1872, the motley settlement had no steady water supply. Water was imported by tank cars or hoisted by rope and bucket from open wells. An unpredictable water supply plagued the settlement until two men bored a single municipal well in 1876. Still, the waterworks remained

FRESNO CITY LIMITS, JUNE 1977



Source: Technical Services, Planning and Inspection, City of Fresno.

FIGURE VI-B

TYPES OF WATER PURVEYORS
 WITHIN THE FRESNO-CLOVIS METROPOLITAN AREA
 AS OF JULY, 1978

Purveyors	Number
1. City of Fresno	1
2. City of Clovis	1
3. County of Fresno	1
4. Fresno Irrigation District	1
5. Highway City Community Service District	1
6. Fresno County Service Agency #11	1
7. Mutual Water Companies	2
8. County Water Districts	3
9. Private Water Companies	12
10. County Water Works Districts	30
Total	53

Sources: Fresno County Local Agency Commission, Spheres of Influence for the Special Districts Within the Fresno-Clovis Spheres of Influence (Fresno, unpublished report, n.d.); see also, Kenneth W. Hohmann, City of Fresno Annexation Coordinator, July 18, 1978.

a makeshift system hardly adequate for fire protection. Not until the advent of hydroelectric power were there fortunes to be made in the water business. After a false start in the 1890's, power companies added municipal water systems to their regional empires. Such a corporation had grown up in Fresno and it, in turn, was swept up by an even larger concern. By the 1930's, the Fresno Water Company was but a division of a state-wide corporation, owned by a national conglomerate and controlled by a holding company in New York.

So well entrenched was private enterprise on the Fresno plain that the public ownership campaign suffered many defeats before its ultimate victory well into the twentieth century. In the 1890's, an attempt to condemn private canals ended in expensive failure and the City's bid for municipally owned utilities proved equally disastrous. Not until 1920 did the public ownership campaign gain sufficient momentum to organize irrigation districts on the Kings. A decade later, municipal ownership was triumphant as well. However, newly-formed public purveyors would find other rivals as fierce as private enterprise. With the advent of federal reclamation came the redistribution of the State's water resources on a grand scale. Public purveyors rushed in for the spoils and collided. It was left to the federal courts to pacify the contenders and work out a new balance of power on the Fresno plain.

This, then, is the heritage of the modern metropolis and its water supply. Old rivalries between private enterprise and public ownership became new rivalries between the public purveyors themselves. Currently, there are signs that the old rivalries may be buried in a new, growing spirit of cooperation among public agencies in and around Fresno. However, only careful attention to the turbulent past will allow policy makers to steer a calmer course into the future.

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APPENDIX A

IMPORTANT DATES IN FRESNO'S WATER HISTORY

- 1856 Fresno County created by State Legislature.
- 1868 Settlers prove irrigation a success on the Fresno plain.
- 1871 Canal companies tap both the San Joaquin and Kings Rivers.
- 1872 Central Pacific establishes Fresno Station.
- 1874 Fresno becomes the county seat.
- 1876 First municipal waterworks constructed near the corner of Fresno and "J" (Fulton).
- 1877 Beginning of Lux vs. Haggin suit--a test of the unpopular riparian doctrine.
- 1880 Population of Township, 1,112; County, 9,478.
- 1882 June 24th--Freshans call for public waterworks after costly fire.
- 1883 First public wells and cisterns installed along Mariposa Street.
- 1884 Incorporation and public waterworks gain support during "Great Flood of 1884."
- 1885 City of Fresno incorporated on October 12th; population 3,459.
- 1886 California Supreme Court upholds the riparian doctrine in the final appeal of Lux vs. Haggin.
- 1887 Wright Act provides for the formation of publicly-owned irrigation districts.
- 1890 Population of City, 10,818; County, 32,026.
Out-of-town investors purchase Water Company.
- 1894 Water Company replaces unsightly tanks with graceful "Old" Water Tower.
- 1897 Nares Compromise adjudicates Kings River.
- 1900 Population of City, 12,470; County, 37,862.
- 1903 Water Company purchased by power magnates.

- 1910 Population of City, 24,926; County, 75,657.
- 1919 Marshall Plan calls for State-wide water and power development.
- 1920 Population of City, 45,086; County, 128,779.
July 26th--Fresno Irrigation District formed.
- 1926 Water Company becomes a subsidiary of a national utility conglomerate.
- 1930 Population of City, 52,513; County, 144,379.
November 4th--voters approve \$2,520,000 bond for municipal ownership of water system.
- 1931 January 31st--City purchases the Fresno holdings of the California Water Service Corporation.
- 1933 Voters endorse \$170,000,000 bond issue for Central Valley Project.
- 1937 U. S. Bureau of Reclamation begins construction of the Central Valley Project.
- 1940 Population of City, 60,685; County, 178,565.
- 1944 Friant Dam completed.
- 1947 Riparian water users sue Bureau of Reclamation in celebrated Rank vs. Krug case.
- 1950 Population of City, 90,626; County, 276,515.
- 1952 City of Fresno enters Rank vs. Krug suit.
Pine Flat Dam completed.
- 1956 District Court of Appeals rules in favor of Fresno and the riparianists in the Rank vs. Krug case.
- 1960 Population of City, 129,500; County, 365,945.
- 1963 Bureau of Reclamation wins final appeal of Rank vs. Krug; Supreme Court rules that Fresno has no clear claim to San Joaquin River.
LAFCO created.
- 1970 Population of City, 165,900; County, 413,329.
- 1972 City begins recharging ground water at Leaky Acres infiltration beds.
- 1978 Population of Fresno-Clovis Metropolitan Area approximately 323,000.

APPENDIX B

IMPORTANT MEN IN FRESNO'S WATER HISTORY

Andrews, Lyman	Partner of George McClough and co-builder of Fresno's first municipal waterworks (1876).
Athearn, Fred G.	P.G.&E. attorney who led the campaign against the Central Valley Project.
Church, Moses J.	Celebrated "Father of Irrigation" in Fresno County.
Chapman, William S.	Land baron who invested heavily in canal enterprises of the 1870's.
Forkner, Jesse C.	Developer of Fig Garden area, organizer and director of FID in 1920.
Easterby, Anthony Y.	First to experiment with irrigated wheat farming on the Fresno plain.
Kaupke, Charles A.	Watermaster of Kings River and critic of Bureau of Reclamation Pine Flat project of 1952.
Ferguson, John William	Publisher of the <u>Fresno Expositor</u> and charter investor in the <u>Water Company</u> of 1877.
Fowler, Thomas	Cattleman, politician and chief adversary of the canal builders of the 1870's.
George, Henry	Social reformer and critic of William Chapman and other wealthy land speculators of the 1870's.
Glass, William	Finance Commissioner and champion of municipal ownership in 1930.
Jensen, Andrew M.	Commissioner of Public Works and champion of municipal ownership in 1930.
Kearney, Martin Theodore	Raisin magnate, speculator and agricultural publicist.
Krug, Julius A.	Secretary of the Interior under Truman and, as such, defendant in the celebrated <u>Rank vs. Krug</u> suit.
Leach, Lewis	Banker and director of the Water Company, 1877 to 1890.
Lux, Charles	Partner of Henry Miller and plaintiff in the landmark <u>Lux vs. Haggin</u> water trial.

- McCullough, George Partner of Lyman Andrews and co-builder of Fresno's first municipal waterworks (1876).
- Marshall, Robert Bradford Author of the Marshall Plan (1919) which laid the foundation of the Central Valley Project.
- Moffet, Samuel Spokesman for irrigation reform and the Wright Act of 1887.
- Miller, Henry Notorious "Cattle King" of the San Joaquin Valley.
- Nares, Llewelyn Arthur English investor who took over the Fresno Canal Company in 1894 and authored the Compromise of 1897.
- Ohrstrom, G. L. Wall Street financier who controlled the stock of Tri-Utilities (which owned Fresno's water system on the eve of municipal ownership in 1930).
- Perrin, E. B. Chief stockholder of the Fresno Canal Company in the 1880's.
- Rank, Everett G. Leader of the riparian landowners who sued the federal government for diverting the San Joaquin at Friant Dam (Rank vs. Krug, 1947-1963).
- Rowe, Claude L. Prosecuting attorney in Rank vs. Krug who advanced the City's claim to the San Joaquin River, 1947-1963.
- Rowell, Chester Third mayor of Fresno, founder of Fresno Republican and supporter of the Fresno Irrigation District campaign of 1890.
- Seymour, John J. Manager of the Fresno Water Company, 1890 to 1902.
- Stanford, Leland, Jr. President of the Central Pacific who selected the Fresno town site.
- Tarpey, Michael F. Raisin magnate and leader of the campaign to build Pine Flat Dam in 1915.
- Teilman, Ingvar H. First City Engineer of Fresno and chief engineer of the Fresno Canal Company.
- Van Valkenburgh, C. C. Commissioner of Public Works and organizer of 1930 bond issue for municipal ownership.

- Vincent, Joseph P. Assemblyman, Canal builder and chief spokesman for the Fresno Irrigation District campaign of 1890.
- Weeks, Claude H. General Manager of the Water Company who was hired by the City after municipal ownership in 1931.
- Wishon, Albert Graves Builder of the San Joaquin Light and Power corporate empire.

APPENDIX C
ALPHABETICAL LISTING OF NINETEENTH CENTURY
APPROPRIATORS OF THE FRESNO SLOUGH,
SAN JOAQUIN AND KINGS RIVERS

Aliso Canal.

This Miller & Lux Corporation Canal irrigated some 3,000 acres near the juncture of the Fresno Slough and San Joaquin River. Construction began in 1899. (Treadwell, Cattle King, 1931, pp. 62-77; see also, Mead, USDA, Bulletin No. 100, 1902, p. 247.)

Blyth Canal.

In 1897, the California Pastoral and Agricultural Co. turned wild grassland near Chowchilla into irrigated grazing land. When the San Joaquin rose to a high point, water spread across the prairie as it hit a series of four to six-foot levees. (Grunsky, USGS, Water-Supply Papers, 1898, pp. 71-73; see also, Mead, USDA, Bulletin No. 100, 1902, p. 247.)

Burrell Ditch.

Built in 1890, the ditch shared the Riverdale Ditch headgate to the Murphy Slough of the Kings River and was managed by the Murphy Slough Association. (Mead, USDA, Bulletin No. 100, 1902, p. 247.)

Calamity Ditch.

This high water ditch, constructed in 1894, diverted Kings River water about four miles west from its headgate a mile north of Summit Lake. (Mead, USDA, Bulletin No. 100, 1902, p. 247.)

Carmelita Ditch.

Excavated in 1896, the ditch irrigated the Carmelita Vineyard by tapping the Kings River through the Seventy-Six Canal. Ironically, the rights of the ditch cost about as much to defend as the cost of construction. (Mead, USDA, Bulletin No. 100, 1902, p. 247.)

Centerville and Kingsburg Canal.

In 1877, the farmers near Kingsburg and Selma organized a company to irrigate their lands by tapping the Kings River north of Centerville and running water south, parallel to the river. Individual stockholders were themselves responsible for completion of the sections. (Grunsky, USGS, Water-Supply Papers, 1898, p. 50.)

Centerville Bottoms Ditches.

In the 1850's, settlers began diverting the Kings River through a network of narrow ditches. Farmers controlled and directed water by damming the ditches with cobblestones and other debris. The flood of 1867-68 washed out many of the earliest ditches. (Peirson, "Fresno's Past: Water Comes to the Plains," Fresno Guide, undated clipping, FCFL, p. 3-4; see also, Mead, USDA, Bulletin No. 100, pp. 284-86.)

Byrd Ditch: Built in 1859, washed out in the flood of 1867-68; rebuilt in 1885.

Cameron Ditch: Built circa 1885, employed a brush dam to divert water from Patterson Slough.

Dennis Ditch: Built circa 1859, employed a brush dam to divert water from Patterson Slough, a channel of the Kings River.

Dunnigan-Byrd Ditch: Built in 1888, diverted water from a high water Kings River channel.

Fink Channel: The eastern branch of the Outside Slough first used for irrigation in 1868.

Fink Ditch: One of many small ditches off of Fink Channel in the late nineteenth century.

Hanke Ditch: Built in 1895 to irrigate lands previously served by Barton Ditch. Tapped Moody Slough, a channel of the Kings River.

Jacobie Ditch: Diverted water less than a mile off the main channel of the Kings River.

Mitchell Ditch: Diverted water less than a mile from a branch of the Outside Slough, a branch of the Kings River.

New Jack Ditch: Built in 1898, irrigated about 160 acres between two branches of the Outside Slough.

Rice Ditch: Built circa the 1860's, diverted water from the Centerville and Kingsburg Canal of the Kings River.

Centerville Ditch.

In 1868, settlers in Centerville organized the Centerville Canal and Irrigation Company which excavated a small ditch to the Kings River in 1869. In 1874, the Fresno Canal Company acquired the rights of the Centerville Ditch in exchange for stock and water to the original settlers. (Grunsky, USGS, Water-Supply Papers, 1898, p. 47.)

Chowchilla Canal.

Built in 1874, this Miller & Lux Corporation Canal made no formal claim to the San Joaquin River, but appropriated water by the right of constant use. The 38-mile canal irrigated about 8,000 acres annually. (Mead, USDA, Bulletin No. 100, 1902, pp. 226-247.)

Crescent Canal.

Built in 1885 and 1886, the Crescent Canal irrigated the southern portion of the Fresno Swamp in the west delta area of the Kings River. By the turn of the century, the canal irrigated about 9,400 acres. (Grunsky, USGS, Water-Supply Papers, 1898, p. 62.)

East Side Canal.

Built in 1887, the East Side Canal irrigated about 2,500 acres of alfalfa and grain southwest of Merced. Six weirs diverted the San Joaquin about twenty miles off its natural course. (Mead, USDA, Bulletin No. 100, 1902, p. 247.)

Emigrant Ditch.

In 1875, a group of farmers organized the Emigrant Ditch Company to bring water from the Kings River south of Kingsburg. For several years, litigation prevented the use of Emigrant Ditch until a compromise was reached with the owners of Fowler-Switch Canal. The several branches of Emigrant Ditch irrigated about 7,000 acres. (Grunsky, USGS, Water-Supply Papers, 1898, p. 57.)

Enterprise Canal.

Construction began about 1876. The Enterprise was the only canal on the Fresno plain with its dam and headgate above the Fresno Canal and, as such, became a chief rival of the Fresno Canal Company. In the 1880's, the Fresno Canal Company used its superior rights to enjoin the Enterprise Canal from diverting the Kings. Farmers along the Enterprise struck back with a campaign to condemn the Fresno Canal in the Selma Irrigation District. In 1896, the Enterprise received some water with the Nares Compromise and the canal was extended north of Fresno toward the San Joaquin River. (Otis, Reminiscences of Early Days, 1911; see also, Selma Enterprise, Heritage Selma, 1976, 3-G.)

Fresno Canal.

In 1870, Moses J. Church acquired several small ditches including Sweem Ditch and excavated the first major canal from the Kings River near Centerville to farms surrounding the City of Fresno.

After two decades of litigation over water rights, the Kings River and Fresno Canal Company added the Fresno Canal to their network. By 1900, the Fresno Canal irrigated about 70,000 acres. (Bancroft, History of California, 1890, vol. 24, p. 10, ft. 60.)

Fresno Slough Pump Irrigation Stations.

When the Kings River floods, the Fresno Slough drains the Fresno Swamp into the San Joaquin River at Las Juntas. In the nineteenth century, the slough remained stagnant much of the year with insufficient current for canal irrigation. In the late 1890's, four pumping stations near Las Juntas irrigated surrounding farms: Borland Pump (1899), Lee Pump (1898), Mitchler Pump (1899) and Whiteside Pump (1899). In their first years, the pumps irrigated at least 10,000 acres at a cost ranging from 20¢ to 35¢ per acre. (Mead, USDA, Bulletin No. 100, 1902, pp. 312-14.)

Fowler Switch Canal.

In 1883, farmers in the vicinity of Fowler formed a corporation which managed the construction of a canal network which irrigated 10,000 acres in the 1890's. Among the major ditches and canals of the system were the Cleaveland Ditch, the Western Canal, the Elkhorn Canal, and Grant Ditch. In addition, the Emigrant Irrigation Ditch Company claimed water from Fowler Switch Canal for its own system. (Grunsky, USGS, Water-Supply Papers, 1898, p. 48.)

Gould Canal.

In 1871, a group of farmers near the future settlement of Fresno incorporated the Kings River and Fresno Canal Company to bring water to their own land. The canal had a bottom width of twenty-four feet and a top width of thirty-six feet and tapped the Kings about seven miles northeast of Centerville. The first mile included a wooden flume. During low-water periods, the canal choked off the Fresno Canal and its neighbors downstream. This led to a lawsuit in which the Fresno Canal and Irrigation Company acquired the Gould Canal in 1875. (Expositor, June 9, 1875; August 18, 1875; October 6, 1876; and December 8, 1875; see also, Keck, "Gould Canal," 1976.)

Hite Ditch.

Constructed in the 1890's, Hite Ditch was originally a branch of Stimson Canal but a legal claim forced ditch owners to divert their own water from Bogg Slough of the Kings River. (Mead, USDA, Bulletin No. 100, 1902, p. 312.)

James Canal.

The James Canal Company, which began as the Enterprise Canal and Irrigation Company in 1888, operated twenty-four miles of main canal and eleven branches between the San Joaquin and the Fresno Slough. In 1900, the Superior Court of Fresno County claimed that the Enterprise weirs impaired navigability of the San Joaquin and thereby enjoined the company from irrigating 42,000 acres near the City of Fresno. (Mead, USDA, Bulletin No. 100, 1902, p. 248.)

James East Side Canal.

Constructed in 1885, the canal diverted the Kings River by way of Murphy Slough and irrigated as much as 5,000 acres at the turn of the century. (Mead, USDA, Bulletin No. 100, 1902, p. 312.)

James West Side Canal.

Constructed in 1892 and 1893, the canal diverted the Kings River about ten miles through on the Fresno Swamp Sloughs. The James West Side Canal irrigated as much as 12,000 acres at the turn of the century. (Mead, USDA, Bulletin No. 100, 1902, p. 312.)

Jacobs Canal.

Constructed about 1880's, the canal tapped the Kings River six miles southwest of Lemoore. The canal served flood lands on the northern shore of Tulare Lake. (Grunsky, USGS, Bulletin No. 100, 1898, p. 69.)

Laguna De Tache Rancho Canals.

Also referred to as River Ranch, the Laguna De Tache tract covered about 68,000 acres, almost the entire north fork of the Kings River Delta. In the 1860's, there were several small ditches off of Murphy and Cole Slough. In 1869, one such ditch accidentally changed the natural course of the river and was thereafter called St. John's Channel or New Cole Slough. Grant Canal, the main canal, was constructed in 1873. Soon after, the Vanderbilt Canal Company extended Grant Canal across Murphy Slough by what was referred to as the Vanderbilt Cut. The Zalda and James were other important additions to the Laguna de Tache network in the 1880's. In that decade, the Sunset Irrigation District laid claim to portions of the Rancho's system but the courts soon found the irrigation district illegally organized. Although the owners of the Laguna de Tache property had won five of seven major law suits between 1885 and 1899, the Rancho helped organize the Murphy Slough Association (1899) to arbitrate overlapping claims outside of the courts. (Abstract of Title to Rancho Laguna de Tache for Laguna Lands Limited, 1902; see also, Grunsky, USGS, Water-Supply Papers, 1898, p. 86.)

Last Chance Ditch.

In 1872, farmers in the south delta area of the Kings River organized the Last Chance Water Ditch Company. During the high-water season, a canal superintendent regulated the canal's intake at the Kings River headgate. In the 1890's, about half the company's operating expenses were paid out in court fees. (Grunsky, USGS, Water-Supply Papers, 1898, p. 65.)

Leinberger Slough.

The slough is a natural high-water channel of the Kings River delta. Not until the 1890's was there a major effort to irrigate from the slough although the Last Chance Ditch maintained a headgate on the slough since the 1870's. (Mead, USDA, Bulletin No. 100, 1902, p. 301.)

Liberty Canal.

In 1882, farmers in the vicinity of Riverdale attempted to divert the Kings River through Murphy Slough which is an extension of Cole Slough. However, the water supplied proved unsatisfactory and the canal was extended seven miles to hook up with Sutherland Canal. (Grunsky, USGS, Water-Supply Papers, 1898, p. 86.)

Lower Kings River Canal.

Farmers in the vicinity of Lemoore constructed the canal to irrigate their own lands. Construction began in 1870 and operations were expanded to irrigate about 20,000 acres at the turn of the century. (Grunsky, USGS, Bulletin No. 100, 1902, 1898, p. 67.)

Millrace Canal.

Built in 1882, Millrace Canal actually consisted of two ditches owned by the same company and connected the Kings River by way of Murphy Slough. (Grunsky, USGS, Water-Supply Papers, 1898, p. 86.)

Murphy Slough Association.

In 1899, the Murphy Slough Association was organized to apportion the waters of the Murphy Slough in an effort to avoid the back-breaking expense of constant litigation over the water rights of the members. (Mead, USDA, Bulletin No. 100, 1902, p. 306.)

Mussel Slough Ditch.

This ditch was constructed in 1875 for speculative purposes. Promoters formed a corporation and hoped to sell 10,000 shares. Water was sold at 31¢ to 62¢ per acre per year and a canal superintendent made sure that irrigators paid. The ditch went out of service in 1893. (Grunsky, USGS, Bulletin No. 100, 1898, p. 64.)

Peoples Canal.

In 1872, the Peoples Canal Company began construction of what grew to be a thirty-seven mile canal network. The headgate tapped the Kings River from the south of Kingsburg and divided into three branches: The West Fork supplied the vicinity of the town of Grangeville, the Middle Fork irrigated land west of Hanford, and the East Fork dipped about four miles south of Hanford. (Grunsky, USGS, Water-Supply Papers, 1898, p. 62.)

Rhodes Canal.

Constructed about 1868, the Rhodes Canal was one of the first on the Kings. With its head about six miles south of Kingston, the canal ran through Wrights Cut to Carother Slough. The canal was maintained not by a company or association but in an informal way by farmers with no clear claims. By the turn of the century, the canal irrigated as much as 4,000 acres west of Lemoore. (Grunsky, USGS, Bulletin No. 100, 1898, p. 69.)

Reed Ditch.

One of many ditches which tapped the Kings River by way of Murphy Slough. Farmers in the vicinity formed a corporation and extended the small ditch in 1891. (Grunsky, USGS, Bulletin No. 100, 1898, p. 58.)

Riverdale Ditch.

Built in 1875, Riverdale Ditch was a branch of Burrell Ditch which tapped the Kings River by way of Murphy Slough, (Mead, USDA, Bulletin No. 100, p. 307.)

Roundtree Ditch.

Built in 1889, Roundtree Ditch was one of the few ditches off Murphy Slough that held out from the Murphy Slough Association. (Mead, USDA, Bulletin No. 100, 1902, p. 308).

Sanger Flume.

The Sanger Flume and Lumber Company floated lumber from the Sierras down to Sanger (about fourteen miles east of Fresno) by tapping a feeder stream of the Kings River. (Mead, USDA, Bulletin No. 100, p. 238.)

San Joaquin And Kings River Canal And Irrigation Company Canals.

In 1872, work began on the largest irrigation system on the San Joaquin. Headgates on both the San Joaquin and Fresno Slough diverted water down the Outside Canal, the Parallel Canal and the Dos Palos Colony Canal. Miller & Lux Corporation owned the controlling interest of this multi-million dollar canal network. (Alexander, U.S. Report of Board of Commissioners, 1874, p. 28, see also Treadwell, Cattle King, 1931, pp. 62-77.)

Selma Irrigation District.

Formed in 1890, the Selma Irrigation District became one of the Wright Act's many failures. The district hoped to better irrigate some 271,000 acres southwest of Sanger by wrestling for portions of the Fowler Switch and Centerville and Kingsburg Canals. However, a million dollar bond issue was twice defeated in popular election and the district disbanded. (State Department of Public Works, Bulletin No. 18-B, 1932; see also, Mead, USDA, Bulletin No. 100, p. 296.)

Seventy-Six Canal.

In 1882, the Seventy-Six Canal began diverting water from the southeast side of the Kings River between the present-day town of Piedra and Centerville. In 1888, the Alta Irrigation District became one of the first districts formed under the Wright Act. In 1890, the Seventy-Six Canal became the main canal of the Alta Irrigation District. Under the management of the district, the irrigation capacity of the Seventy-Six Canal expanded from 50,000 acres to about 130,000 acres in a decade. (Grunsky, USGS, Water-Supply Papers, 1898, p. 52.)

Stimson Canal.

Built in 1889 and two years later acquired by the Stimson Canal and Irrigation Company. The canal drained and irrigated reclaimed area of the Fresno Swamp in the Kings River Delta. (Mead, USDA, Bulletin No. 100, 1902, p. 306.)

Sunset Irrigation District.

Another failure of the Wright Act, the district was organized in 1891 to irrigate some 360,000 acres between Tulare Basin and the juncture of the Fresno Slough and San Joaquin River. Grandiose plans to run a gravity canal from Summit Lake and built a reservoir on the Kings River delta dissolved when the courts ruled that the Sunset Irrigation District was illegally organized. (State Department of Public Works, Bulletin 18-B, California Irrigation District Laws, 1931 revision.)

Sweem Ditch.

Construction began in 1870 but the ditch was bought out and expanded by the Fresno Canal Company before completion. (Tielman, Historical Story, 1944, p. 2-5.)

Tulare Basin Canals.

After the water receded, Tulare Lake bed required irrigation as much as the higher plains. Canal construction was quick and inexpensive due to the flat, smooth surface of the lake bed. Canal

projects of the 1890's included: Kings Canal, West Side Canal, Clausen and Blakely Canal, and Lovelace Canal. Together, these canals irrigated some 4,000 acres in the vicinity of Tulare Basin at the turn of the century. (Mead, USDA, Bulletin No. 100, 1902, pp. 304-5.)

Turner Ditch.

Built in 1875 and enlarged in 1890. Turner Ditch diverted the Kings River by way of Murphy Slough toward the Fresno Swamp area west of the Laguna de Tache Rancho. The Turner Ditch was one of many under the management of the Murphy Slough Association. (Mead, USDA, Bulletin No. 100, 1902, p. 306.)

Upper San Joaquin River Canal.

In the nineteenth century, the only attempt to cut a canal through the high bluffs of the upper San Joaquin ended in a disastrous financial failure. The Upper San Joaquin River Canal Company hoped to irrigate land belonging to the Bank of California and others on the higher plains above Herndon. Despite continuous repairs, the river washed out the weir and cut across levees. In 1887, the company abandoned the San Joaquin and made plans to tap the Kings River. (Mead, USDA, Bulletin No. 100, 1902, p. 246.)

ABBREVIATIONS

CCF	Office of City Clerk, Fresno
CSA	California State Archives
CSL	California State Library, Circulation
CSLCS	California State Library, California Section
CSLGP	California State Library, Government Publications
CSUF	California State University, Fresno
CSUFSC	California State University, Fresno, Special Collections
ELFB	Editorial Library of the <u>Fresno Bee</u>
FCCHS	Archives of the Fresno City and County Historical Society
FCFL	Fresno County Free Library
PWDCF	Public Works Department, City of Fresno
UCSB	University of California, Santa Barbara

FOOTNOTES, CHAPTER 1

¹Address to Congress, cited in Edward F. Treadwell, The Cattle King: A Dramatized Biography (Fresno: Valley Publishers, 1931), p. 32.

²Paul E. Vandor, History of Fresno County, California (Los Angeles: Historic Record Co., 1919); cited in Erma Peirson, "Fresno's Past: Sinks of Dry Creek," Fresno Guide, February 6, 1964.

³Historically, the Fresno town site was the flood plain of Dog, Red Banks, Fancher, and Big Dry Creek. For description of Fresno before white settlement see Wallace W. Elliott, History of Fresno County, California (San Francisco: Wallace W. Elliott & Co., 1882), p. 19; and The Fresno Weekly Expositor, July 3, 1972.

⁴May 21, 1872; see also, Expositor, May 15, 1872 and June 5, 1872.

⁵The construction team of the Central Pacific considered Fresno to be the exact geographical center of California and the future commercial "hub" of the Central Valley; see The Fresno Bee, June 11, 1972.

⁶Letter from Southern Pacific Company in San Francisco (September 13, 1924), reference files, FCFL; see also, Guy L. Dunscomb, A History of Southern Pacific Locomotives (Modesto, 1963); and Teilman, Historical Story, p. 9.

⁷The Sinks of Dry Creek were, in fact, the alluvial plain of Big Dry Creek, although many referred to the stream as, simply, Dry Creek.

⁸For a technical explanation of the percolation of groundwater on the Fresno plain see Jerold J. Behnke and S. S. Haskell, Jr., "Ground-water Nitrate Distribution Beneath Fresno, California," Journal of American Water Works Association, 60 (April, 1968). p. 477.

⁹Erma Peirson, "Fresno's Past: Water Comes to the Plains," Fresno Guide, n.d., vertical file, FCFL; see also Elwood Mead, ed., U. S. Department of Agriculture, Office of Experiment Stations, Report of Irrigation Investigations in California, Bulletin No. 100 (Washington, D.C.: G.P.O., 1902), p. 283.

¹⁰Ben Randal Walker, Fresno: 1872-1885 A Municipality in the Making (Fresno: Fresno County Historical Society, 1934), p. 6.

¹¹Ben Randal Walker, The Fresno County Blue Book (Fresno: Arthur H. Lawson, 1941), pp. 77-80.

¹²Besides Fresno, the candidates for County seat were Borden, (near Madera), Sycamore, (near Herndon), Lisbon, (near Clovis), Kings River, (near Centerville) and Centerville; see Fresno County Historical Society, Eighty Years of Fresno County, 1856-1937 (Fresno, 1937), p. 26: see also Owen C. Coy California County Boundaries: A Study of the Division of the State to Counties and the Subsequent Changes in their Boundaries (Fresno: Valley Publishers, 1973), pp. 181-86.

- ¹³For example see Expositor, March 25, 1874.
- ¹⁴Cited in Vandor, History of Fresno County, p. 355.
- ¹⁵Walker, Fresno, 1872-1885, pp. 4-5.
- ¹⁶Expositor, March 25, 1874.
- ¹⁷Ibid.
- ¹⁸Walker, Fresno, 1872-1885, for a detailed description of Fresno in the 1870's see the diary of M. K. Harris, 1878, reprinted in part in Vandor, History of Fresno County.
- ¹⁹Elbie W. Eiland, Front Row Center; Historical Record of Fresno City as Remembered by Two Lifelong Residents . . . (Mimeographed; the Fresno County Free Library), p. 54; see also Vandor, History of Fresno County, p. 304.
- ²⁰Expositor, January 12, 1876.
- ²¹Fresno Weekly Expositor (formerly the Millerton Weekly Expositor), January 19, 1876.
- ²²Ibid.
- ²³The remarkable growth of the Fresno Water Company is the subject of Chapter Three; see also, Fresno Republican, July 29, 1928.
- ²⁴Expositor, July 28, 1882, see also, Walker, Fresno; 1872-1885, p. 6.
- ²⁵Expositor, July 25, 1882.
- ²⁶Ibid.
- ²⁷Thomas Hughes was popularly known as the "Father of Fresno City." S. A. Miller owned the Fresno Republican newspaper; see Elliott, History of Fresno County, p. 203.
- ²⁸Expositor, June 14, 1883.
- ²⁹Expositor, June 15, 1883; and October 31, 1883.
- ³⁰Expositor, February 2, 1884.
- ³¹Expositor, February 6, 1884; February 7, 1884; February 8, 1884; and February 18, 1884.
- ³²When capitalized, the word "Politics" generally carried pejorative connotations. For a discussion of the pros and cons of incorporation see the Expositor, September 23, 1885.

³³Fresno became the first incorporated city of the County; see "Articles of Incorporation" (1883 and 1885), City Clerk, Fresno; see also, Expositor, June 10, 1874, August 2, 1883, December 2, 1883, May 3, 1884, September 23, 1885, October 7, 1885, October 28, 1885; and Minutes of the Board of Supervisors of Fresno County, April 10, 1885, through November, 1885.

³⁴Expositor, November 17, 1885; Ingvart H. Teilman, The Historical Story of Irrigation in Fresno and Kings Counties in Central California (Fresno: Williams & Sons, 1943), p. 21; see also, Minutes of the Board of Trustees of the City of Fresno, (November 28, 1885), vol. A., p. 133, and Minutes (April 30, 1888) vol. B, p. 170.

FOOTNOTES, CHAPTER 2

¹ Cited in Addresses of the State Irrigation Committee to the Fresno and Riverside Irrigation Conventions and to the Anti-Riparian Voters of California, n.p., 1886, p. 88; CSLCS.

² For mission agriculture see Andrew F. Rolle, California A History (NY: Thomas Y. Crowell Co., 1963), p. 75; see also, Erwin Cooper, Aqueduct Empire: A Guide to Water in California, Its Turbulent History and its Management, (Glendale, Calif.: Arthur H. Clarke Co., 1968), pp. 12-21.

³ Teilman, Historical Story, p. 2; see also, Frank F. Latta, Handbook of the Yokuts Indians (Oildale, Calif.: Bear State, 1949); S.F. Cook, the Aboriginal Population of the San Joaquin Valley, California (University of California Anthropological Records, 1955), vol. 16, pp. 383-426; Robert F. Heizer, et. al, California Indian History: A Classified and Annotated Guide to Source Materials (Ramona, Calif.: Ballena Press, 1975), p. 84; for a colorful description of the Valley and the natives before Statehood see Heinrich Kunzel, Upper California, translated from the German by Anthony and Max Knight (San Francisco: Book Club of California, 1967), FCFL.

⁴ Mead, USDA, Bulletin No. 100, 284-5; see also, Teilman, Historical Story, p. 6.

⁵ Erma Peirson, "Fresno's Past: Water Comes to the Plains," Fresno Guide, undated clipping in Water Supply Vertical File, FCFL; see also, "The Story of Irrigation is the Story of Water" (1947), FCCHS, pp. 3-4.

⁶ Hubert Howe Bancroft, History of California, v. 24, 1890, p. 10; see also, Peirson, "Water Comes," Fresno Guide; and Teilman, Historical Story, pp. 7-9.

⁷ Bancroft, History of California (San Francisco History Company, 1890), vol. 24, p. 10, ft. 60; see also, Peirson, "Water Comes," Fresno Guide; Teilman argues that Easterby deserves the credit for farthing irrigation in Historical Story, p. 7.

⁸ Expositor, June 9, 1875; August 18, 1875; October 6, 1875; and December 8, 1875; see also, Howard Keck, Fresno Irrigation District, "Gould Canal History Brief" (typewritten, 1976), FCFL; and Carl Ewald Grunsky, "Irrigation Near Fresno, California," in U. S. Department of the Interior, Water-Supply and Irrigation Papers of the United States Geological Survey, No. 18 (Washington, D.C.: G.P.O., 1898).

⁹ San Francisco Evening Bulletin, August 31, 1868, quoted at length in Gerald D. Nash, "Henry George Re-examined: William S. Chapman's Views on Land Speculation in Nineteenth Century California," Agricultural History, vol. 33, July 1959, p. 133.

¹⁰Ibid.

¹¹Lilbourne A. Winchell, A History of Fresno County and the San Joaquin Valley (Fresno, 1933), p. 104-05; see also, Nash, "Henry George," Agricultural History, p. 134.

¹²Henry George, Our Land and Land Policy: National and State (San Francisco, 1871), cited in Nash, "Henry George," Agricultural History, p. 133; see also, Henry George, Poverty and Progress: An Inquiry Into the Cause of Industrial Depressions . . . (NY: Doubleday, 1879).

¹³Paul W. Gates, "The Homestead Act in an Incongruous Land System," American Historical Review, vol. 41, July 1936; for the myth of the yeoman see Richard Hofstadter, Age of Reform: From Bryan to F.D.R. (NY: Knopf, 1955), pp. 23-26.

¹⁴Virginia Thickens, "Pioneer Agricultural Colonies of Fresno County," California Historical Society Quarterly, vol. 25, pp. 17-38; Nash, "Henry George," Agricultural History, p. 132; Expositor, December 8, 1875.

¹⁵The town of Los Banos was surveyed by Miller & Lux in 1899 and then became the corporation's headquarters, see Erwin G. Gudde, California Place Names: The Origin and Etymology of Current Geographical Names (Berkeley, University of California Press, 1949), p. 183.

¹⁶Treadwell, Cattle King, ch. 8; Walton Bean, History of California: An Interpretive History (NY: McGraw-Hill Co., 1968), p. 265. The Tulare Canal had many names: the West-Side Canal, the San Joaquin Canal, the Mid-Valley Canal, the Main Canal; see U. S. Geological Survey, Hydrologic Unit Map - 1974, State of California (Washington: G.P.O., 1974).

¹⁷Wallace Smith, Garden of the Sun (Fresno: California History Books, 1939), pp. 193-94.

¹⁸Col. B. S. Alexander, et. al., U.S. Report of the Board of Commissioners on the Irrigation of the San Joaquin, Tulare, and Sacramento Valleys . . . (Washington, D. C.,: G.P.O., 1874), p. 28; see also, Treadwell, Cattle King, pp. 62-77.

¹⁹Mead, USDA, Bulletin No. 100, p. 304; see also, Treadwell, Cattle King, pp. 62-77.

²⁰Treadwell, Cattle King, pp. 71-72; see also, Expositor, May 26, 1876.

²¹Treadwell, Cattle King, p. 162; Miller's notoriety crept into the folklore of his domain, see Smith, Garden of the Sun, pp. 154-55; for San Joaquin Canal Company see Gerald D. Nash, State Government and Economic Development (Berkeley: University of California Press, 1964), pp. 192-93.

²²Mead, USDA, Bulletin No. 100, p. 240; "The Story of Irrigation," p. 5.

²³Expositor, October 20, 1875; see also, Fresno County Centennial Almanac (Fresno: Fresno County Centennial Committee, April 1956), p. 34-35.

²⁴The often-told story of Church and Easterby's part in the range war is recounted in Peirson, "Water Comes,". Teilman minimizes the violence of the conflict in Historical Story, pp. 7-9; see also, "An Act to Protect Agriculture and to Prevent the Trespassing of Animals Upon Private Property . . .," Statutes of California, March 20, 1876; see also, Fresno Bee, October 23, 1935; and Smith, Garden of the Sun, p. 198.

²⁵Example from Millerton Court House, cited in Mead, USDA, Bulletin No. 100, p. 37.

²⁶Frank Soule estimates that there were fifty miner's inches in one cubic foot in Mead, USDA, Bulletin No. 100, p. 251; Robert Kelley estimates that appropriation of a miner's inch equalled about 17,000 gallons a day, see Gold vs. Grain: The Hydraulic Mining Controversy in California's Sacramento Valley (Glendale, Calif.: Arthur H. Clarke Co., 1959), p. 27.

²⁷Grunsky, "Irrigation Near Fresno," pp. 39-42; for claims see Mead, USDA, Bulletin No. 100, p. 271.

²⁸Mead, USDA, Bulletin No. 100, pp. 230, 235, 250, and 271.

²⁹Comparative studies of irrigation in Spain, India, and Egypt were popular in the late nineteenth century; see Alexander, U.S. Report of the Board of Commissioners, p. 67; and Mead, USDA Bulletin No. 100, pp. 216 and 235.

³⁰Fort Miller later became Millerton, the seat of Fresno County (1856 to 1874); see Ben R. Walker, Historic Values in the Area to be Covered by the Water of Millerton Lake, (n.p., 1943) Typewritten, FCFL, p. 1.

³¹With the advent of hydraulic mining in 1853, water became the most valuable tool in the miner's kit. But hydraulic mining was not practiced in Fresno County, see Kelley, Gold vs. Grain, p. 27; see also, August J. Bowie, Jr., A Practical Treatise on Hydraulic Mining in California with Description of the Use of Ditches, Flumes, Wrought-Iron Pipe, and Dams; (New York: D. Van Nostrand Co., 1950) p. 80-81.

³²Index to the Laws of California, 1850-1920, (Sacramento: Calif. State Printing, 1921) Grunsky, "Water Appropriations," p. 272.

³³More specifically, the riparian doctrine states: "Every proprietor of lands on the bank of a stream has an equal right to use the waters which flow in the stream and, consequently, no proprietor can have the right to use the water to the prejudice of any other proprietor. Without the consent of the other proprietors, no proprietor can either diminish the quantity of water which would otherwise descend to the proprietor below or throw the water back upon the proprietor above;" from Address to Members, p. 4.

³⁴Address to Members, pp. iii and vii.

³⁵Elwood Mead, USDA, Bulletin No. 100, p. 45.

³⁶For Swamp Land Act see, Statutes at Large and Treaties of the United States of America (Boston: Charles C. Little, 1851), p. 519.

³⁷69 Calif. 255-454 (1886).

³⁸Miller directed the attack but the historic case was misfiled as Charles Lux v. James D. Haggin and the Kern River Land & Canal Corporation. Wallace Smith reports the defendant's corporation as Haggin & Carr, Garden of the Sun, p. 450. Actually, Trevis, not Carr, owned the land irrigated by Calloway Canal; see Cooper, Aqueduct Empire, p. 41.

³⁹Expositor, May 5, 1887; March 28, 1887; and March 29, 1887.

⁴⁰69 Calif. 258 (1886).

⁴¹Mead, "Agricultural Situation," USDA, Bulletin No. 100, p. 48; see also, 69 Calif. 246 (1886).

⁴²Mead, "Agricultural Situation," USDA Bulletin No. 100, p. 44.

⁴³Republican, December 2, 1887; for Miller-Haggin settlement see Treadwell, Cattle King, p. 94.

⁴⁴Sometimes referred to as the West Side or San Joaquin and Kings River Canal; see, for example, Alexander, U.S. Report of the Board of Commissioners, p. 28.

⁴⁵Treadwell, Cattle King, p. 71-72; Smith, Garden of the Sun, p. 450-51.

⁴⁶Expositor, May 26, 1876; Smith, Garden of the Sun, p. 450-51.

⁴⁷Expositor, July 28, 1875.

⁴⁸Expositor, October 20, 1875.

⁴⁹Ibid.

- ⁵⁰ Glenn S. Dunke, Boom of the Eighties in Southern California (Los Angeles: Huntington Press, 1944), p. 242.
- ⁵¹ Addresses of the State Irrigation Committee (1887), preface; see also, Joe S. Bain, et. al., Northern California's Water Industry; The Comparative Efficiency of Public Enterprise in Developing a Scarce Natural Resource (Baltimore: John Hopkins Press, 1966), p. 297.
- ⁵² Smith, Garden of the Sun, pp. 424, 451, 457-59, 461, 562; for list of anti-riparian newspaper articles see Addresses of the State Irrigation Committee (1887).
- ⁵³ Dunke, Boom of the Eighties, p. 265.
- ⁵⁴ Ibid., pp. 13, 14, 104, 106, 179, 231-242, and 264.
- ⁵⁵ 69 Calif. 255 (1886).
- ⁵⁶ Laws and Resolutions Passed by the Legislature of 1885-86 at its Extra Session (1887), pp. 29-20.
- ⁵⁷ Cooper, Aqueduct Empire, p. 45.
- ⁵⁸ 164 U.S. 112 (1897).
- ⁵⁹ California State Department of Public Works, Division of Engineering and Irrigation, Irrigation Districts in California, 1929, by Frank Adams, Bulletin 21 (1930); see also, Bain, Northern California's Water Industry, pp. 296-98.
- ⁶⁰ Cooper, Aqueduct Empire, pp. 33-48; see also, Smith, Garden of the Sun, pp. 461; and Dunke, The Boom of the Eighties, pp. 242-43.
- ⁶¹ For example, the California Grange estimated some 3249 square miles of land hoarded by "monopolists," Expositor, October 13, 1875.
- ⁶² Also known as River Ranch; Smith, Garden of the Sun, p. 5.
- ⁶³ Grunsky estimates 68,000 acres; "Water Appropriation", USDA, Bulletin No. 100; p. 308.
- ⁶⁴ "Rancho Laguna de Tache," Fresno Past & Present, January, 1962, vol. 4, p. 1.
- ⁶⁵ Expositor, March 22, 1896, Expositor, January 18, 1892, Grunsky, Water Appropriators, Mead, "Agricultural Situation," Bulletin No. 100; pp. 58 and 277.
- ⁶⁶ This is a conservative estimate, see Charles E. Palmer, "The Story of the Kings River" (1955), Mimeographed, FCFL, p. 24-25.

⁶⁷Expositor, November 19, 1888; A History of Fresno County, California . . . (San Francisco: Wallace W. Elliott & Co., 1882), p. 109.

⁶⁸Palmer, "Story of Kings," p. 26.

⁶⁹Republican, March 3, 1889, Doctor Perrin's brother Robert was also involved in the purchase of the Fresno Canal; see Paul E. Vandor, History of Fresno County, California (Los Angeles: Historic Record Co., 1910), p. 259.

⁷⁰Republican, March 15, 1889; April 24, 1891; see also, Fresno Bee, April 24, 1966; Memorial and Biographical History of the Counties of Fresno, Tulare, and Kern, California (Chicago: Lewis Publishing Co., 1892), p. 459; and, Palmer, "Story of the Kings," p. 25-27.

⁷¹Teilman, Historical Story p. 25; see also, "Story of Irrigation," p. 7; Palmer, "Story of Kings," p. 27; and Statutes of the California Commission (1917), vol. 12, p. 455.

⁷²Expositor, January 18, 1892; and March 22, 1896, see also, Teilman, Historical Story, p. 28; for biography see Vandor, History of Fresno, vol. 1, p. 957.

⁷³Expositor, March 17, 1892.

⁷⁴William H. Shafer, manuscript letter, Selma, August 31, 1930; reprinted in Smith, Garden of the Sun, p. 458.

⁷⁵Teilman, Historical Story, p. 25-27.

⁷⁶Teilman, Historical Story, p. 28.

⁷⁷The Committee of Thirty actually had thirty-two members, including representatives of the Alta Canal, the Consolidated Canal, the Fresno Canal, Kings County, the Laguna Irrigation District, and Tulare Lake; see Charles L. Kaupke, Forty Years on the Kings River, 1917-1957 (Fresno: Hume Printing & Lithograph Co., prepared for the Kings River Water Association, 1957), p. 6-7.

⁷⁸"Story of Irrigation," p. 7; William H. Shafer, "Historical Story" with I. Teilman, p. 1-5.

⁷⁹The claim that Nares and the British investors controlled 96% of the Kings is a conservative estimate based on the following calculation. The average annual flow of the Kings, 1910 to 1915, was 1,792,483 acre feet (see Republican, March 19, 1930). Teilman's survey begun about 1896, reported all but 320 to 900 cubic feet per second outside of Nares control (Historical Story, p. 24). Using the larger estimate of 900 cfs, and pretending that the maverick canals diverted that much water year-round (which they did not), the Fresno Canal interests controlled all but 64,264 acre feet a year: 96% of the average annual flow.

⁸⁰ Shafer, Historical Story, p. 5-10; Kaupke, Forty Years, p. 7-8; Vandor, History of Fresno, vol. 1, p. 957.

⁸¹ Mead, USDA, Bulletin No. 100, p. 26; cited in Joe S. Bain, et. al. Northern California's Water Industry (Baltimore: John Hopkins Press, 1969), p. ii.

⁸² Kaupke, Forty Years, p. 1-10.

⁸³ Mead, "Agricultural Situation," USDA Bulletin No. 100, p. 38.

FOOTNOTES, CHAPTER 3

¹Bee, October 23, 1930.

²Expositor, July 10, 1872; January 12, 1876; see also, Vandor, History of Fresno County, pp. 304 and 307; and Eiland, Front Row Center, p. 54.

³Republican, June, 1925.

⁴Expositor, June 19, 1876.

⁵Lewis, Memorial and Biographical History, pp. 93 and 426; see also, Elliott, History of Fresno County, pp. 121, 122, and 128; Republican, November 11, 1928; July 29, 1928; and Expositor, July 25, 1882.

⁶Elliott, History of Fresno County, p. 122.

⁷Republican, July 29, 1928; see also, Edwin M. Eaton, Vintage Fresno, Pictorial Recollections of a Western City (Fresno: Huntington Press, 1965), pp. 76-79.

⁸For a new biographical sketch of Ferguson see Fresno--Past and Present, vol. 19, No. 2, June 1977; for Faymonville see Eaton, Vintage, p. 57, for Leach see Vandor, History of Fresno County, vol. 1, pp. 232 and 654 and Lewis, Memorial and Biographical History, p. 93. The other directors of the Water Company were A. M. Dickey, A. M. Clark, A. Goldstien and George Bernard, Sr. (President), see Republican, July 29, 1928. For water rates see "Monthly Rates" of the Fresno Water Company (ca. 1879), FCCHS.

⁹For land boom see Dunke, Boom of the Eighties, pp. 26-27; for State-wide population figures see United States Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970, (Washington, D. C.: G.P.O., 1975), Part I, p. 25.

¹⁰Advertisement for Martin Theodore Kearney's Fresno County, about 1876, FCCHS, reprinted in Eaton, Vintage Fresno, p. 17.

¹¹For a biographical sketch of Kearney see "M. Theo. Kearney," Fresno County Centennial Almanac, pp. 125-26; population figures from Walker, "Dates in Fresno History," Fresno, 1872-1885; for another Fresno publicist see an 1882 article in Harpers' reprinted in part by the Bee, November 1, 1959.

¹²Elliott, History of Fresno County, p. 103; see also Republican, July 29, 1929.

¹³Mill Creek Canal was nicknamed Church Ditch after its builder, Moses James Church. In the 1890's, the Ditch became quite polluted with sewage from nearby houses. The City obtained an injunction which forced the Fresno Canal and Irrigation Company to fill it in; see Ernestine Winchell, "Fresno Memories: Abatement of Mill Ditch," Republican, March 6, 1927.

¹⁴Expositor, July 25, 1882; see also, American Association of University Women, Heritage Fresno: Homes and People (Fresno: Pioneer Press, 1975), pp. 38-39.

¹⁵On the modern site of the 1876 Water Works stands the Guarantee Savings Building (formerly the Mattei Building). Like the Water Works, the Guarantee Building is architecturally Classical (specifically "Classical Revival"), with three distinct sections corresponding to the parts of a greek column.

¹⁶Spencer Kendig, "The Fresno Water Tower," Fresno-Past and Present, vol. 10, No. 4, October, 1964, p. 1.

¹⁷Expositor, March 16, 1887; see also, Kendig, "Water Tower," p. 1; and Republican, July 29, 1928.

¹⁸In 1894, the Directors of the Fresno Water Company were John J. Seymour (President), J. M. Callier (Secretary), H. D. Calson, D. W. Ferguson, O. J. Woodward, H. Cheach, and C. H. Caffin, see Expositor, November 1, 1894. Other prominent officials were Howell and Liddell, see San Joaquin Power Magazine, July, 1925, p. 3; see also, Vandor, History of Fresno County, p. 657; and Lewis, Memorial and Biographical History, p. 93.

¹⁹Instead, the bottom three stories of the "Old Water Tower" have been used as a meter repair shop and City storage. Fresno's first library was finished in 1904, with a \$30,000 grant from Andrew Carnegie; see Eaton, Vintage Fresno, pp. 109-110.

²⁰The Water Tower was in continual use until 1963. In Front Row Center, Eiland gives 1878-9 as the construction date of the Old Water Tower; however, that was the construction date of Fresno's second public water tank at Fresno and Fulton; see National Register of Historic Places (Washington: G.P.O., 1974), p. 41; and, the original blueprints which show a much more ornate water tower than was ever built, in "Water Tower" file, PWDCF; Conversation with Ara Dolarian, Art Professor, CSUF, November 4, 1977.

²¹San Joaquin Power Magazine, July, 1925, p. 3.

²²Water storage capacity and population growth are admittedly crude indexes. A better comparison would be between dollars invested and number of customers, or better yet, between gross expenditures and net profit of the water company in each decade. Unfortunately, this data has not survived. However, the data recorded herein can suggest that the Water Company was unprepared for population stagnation; see Elliott, History of Fresno County, p. 122, and Lewis, Memorial and Biographical History, p. 93; for population estimates see "Dates in Fresno History," Walker, Fresno, 1872-1885.

²³State of California Railroad Commission, Decisions of The Railroad Commission of the State of California (Sacramento: State Printing Office, 1913), vol. I, p. 967-970.

²⁴"Story of Irrigation," p. 9; see also, Albert Graves Wishon, "History of San Joaquin Electricity" (March, 1920), ELFB.

²⁵In other words, water reached the generator after a 1,412 foot drop, which generated about 611.4 pounds of pressure per square inch.

²⁶Imperial Fresno, 1897 promotional pamphlet of the Fresno Republican (Fresno: Fresno Republican Publishing Co., 1902), p. 1, PWDCF.

²⁷Articles of Incorporation of the San Joaquin Electric Company. April 8, 1895, CSA; see also, San Joaquin Light and Power Company, "Twenty-Eight Years of Constant Development," 1925, ELFB, and Bee, November 30, 1924.

²⁸Wishon, "History of San Joaquin Power," pp. 1 and 2.

²⁹See chapter II, footnote No. 33.

³⁰In the terminology of the day, Fulton G. Berry had a reputation for being a "plutocrat" and a "corporate magnate," see Wishon, "History of San Joaquin Power", p. 3; see also, San Joaquin Light and Power Magazine, July, 1925, pp. 4-6.

³¹Republican, July 18, 1926; see also, Bee, June 18, 1936; Fresno--Past and Present, January and April, 1959; and Vandor, History of Fresno County, pp. 1306-07.

³²Story of Irrigation, p. 9; for influence of the gasoline engine on agricultural pumping see The Selma Enterprise, February 17, 1955; see also, Articles of Incorporation of the Mount Whitney Power Company, December 29, 1899, CSA.

³³Bee, June 18, 1936; see also, "Story of Irrigation," pp. 8-10.

³⁴In 1905, San Joaquin Power increased its capitalization by issuing \$800,000 in bonds; see Bee, November 30, 1924; see also, San Joaquin Light and Power, Twenty-Eight Years, pp. 12, 3 and 8.

³⁵The Crane Valley reservoir increased the generating capacity of the original powerhouse (no. 1) from 1,450 k.w. to 16,000 k.w. The reservoir apparently eliminated the water shortage caused by Fulton Berry's ditch; see Wishon, "History of San Joaquin Power," p. 8.

³⁶History of Midland Counties Public Service Corporation. (Fresno: typewritten, ca. 1920), ELFB.

³⁷The Power, Transit and Light Company controlled all electric street railroad, and gas companies in and around Bakersfield.

³⁸Railroad Commission, Decisions, vol. I, 1911-12, p. 969; see also, Wishon, "History of San Joaquin," p. 2; and San Joaquin Light and Power, "Twenty-Eight Years."

³⁹ Statistics are based on 1919 and 1920 estimates by San Joaquin Corporation President A. G. Wishon in "History of San Joaquin," p. 13; see also, Moody's Investors Service, Inc., 1977), p. 1435.

⁴⁰ Apparently one of the original steam pumphouses was replaced.

⁴¹ Cited in San Joaquin Power Magazine, July, 1925, p. 5; see also, Articles of Incorporation of J. C. White Company, Secretary of State Archives, Corporation Division.

⁴² The Railroad Commission treated Fresno's Water and Power interests as separate corporations but admitted that "the stockholders of the Water Company are large stockholders in the power company;" see Railroad Commission, Decisions, vol. 17, pp. 770-73; vol. 1, p. 969; vol. 12, p. 727, vol. 13, p. 524 and vol. 16, pp. 134-40; see also, Bee, April 23, 1919.

⁴³ San Joaquin Power Magazine, July, 1925; p. 6; see also, Vandor, History of Fresno County, p. 1307; for A. Emory Wishon see, Bee, January 5, 1948; and "Final Tribute," Bee, January 6, 1948.

⁴⁴ Bee, November 30, 1924; December 2, 1924; Moody's Public Utilities Manual, p. 1435.

⁴⁵ For the growth of the California Water Service Company see Railroad Commission, Decisions, vol. 29, p. 471; vol. 30, p. 876; vol. 31, pp. 327, 417, and 472, vol. 32, pp. 183 and 422; vol. 33, p. 103, 247, 275 and 502; vol. 34, pp. 379 and 887.

⁴⁶ However, well depths varied considerably and the data remains fragmentary until the 1920's. Paul E. Vandor, in History of Fresno County (1919), gives testimony that the water table rose significantly by the early twentieth century. Given the intensive ditch irrigation, the notion that the Fresno water table was on the rise, 1870 to 1900, is quite plausible; see Vandor, History of Fresno County, pp. 304-6.

⁴⁷ Elliott, History of Fresno County, p. 122.

⁴⁸ For water table data, see Fresno, Water Service Division, Department of Public Works, Annual Report: Fiscal Year 1958-1959, December 11, 1959; p. 14, PWDCF.

FOOTNOTES, CHAPTER 4

¹Expositor, February 21, 1890.

²Section 12 of the Wright Act, see State of California, Legislature, Laws and Resolutions (1887), p. 30; see also, Mead, USDA, Bulletin No. 100, p. 30.

³Districts were formed by popular election by voters residing within the proposed boundaries. A board of directors was elected and a bond filed (theoretically for twice the probable cost of the project). District proposals needed to be ratified by a two-thirds majority in popular election; see State of California, Legislature, Laws and Resolutions (1887), p. 30.

⁴Between 1880 and 1900 the population of California increased from 560,000 to 1,485,000; see U. S. Bureau of the Census, Historical Statistics, Part 1, p. 25.

⁵Mead, USDA, Bulletin No. 100, pp. 274-75; see also, Cooper, Aqueduct Empire, pp. 45-47; and S. T. Harding, Water in California (Palo Alto: N-P Publications, 1960), p. 83-85.

⁶Cooper, Aqueduct Empire, p. 45-47.

⁷The seven survivors were the Alta (organized in 1888), Brown Valley (1888), Little Rock Creek (1892), Modesto (1887), Turlock (1887), Tulare (1887), and Walnut (1893); see State of California, Department of Public Works, Division of Water Resources, Bulletin No. 18-B, California Irrigation Laws (Sacramento: State Printing Office, 1932), pp. 45-48.

⁸Mead, USDA, Bulletin No. 100, p. 274.

⁹Ibid. see also, Cooper, Aqueduct Empire, p. 46; and State Department of Public Works, Bulletin No. 18-B, pp. 31 and 45-47.

¹⁰Harding, Water in California, p. 84-85; see also, State Department of Public Works, Bulletin No. 18-B, p. 47-48.

¹¹State of California, Controller, 1975-6 Annual Report, Financial Transactions, Special Districts of California (Sacramento: State Printing Office, 1977), p. IX; see also, State of California, Department of Water Resources; General Comparison of Water District Acts (Sacramento: State Printing Office, 1973), p. 44.

¹²Harold E. Rogers and Stan H. Nichols, Water for California (San Francisco: Bancroft-Whitney, 1967), vol. 2, pp. 230-31, 535-540, and 635-654; see also, State of California, Assembly Intern Committee Reports, Water District Laws of California, Section 2 (Sacramento: State Printing Office, 1953), pp. 10-14; and Department of Water Resources, Water District Acts, pp. 14, 29, 32, 57, 90, 95, and 227-257.

¹³State of California, Statutes, 1971, ch. 52, p. 421; see also, Cooper, Aqueduct Empire, p. 50.

¹⁴Selma Irrigator; June 18, 1887; July 9, 1887; May 5, 1889; May 19-23, 1889; see also, Fresno Expositor, February 12, 1890; February 14, 1890, February 19, 1890; March 5, 1890.

¹⁵Expositor, February 19, 1890.

¹⁶Ibid.

¹⁷Republican, November 17, 1910; see also, Bee, November 10, 1974; and Expositor, February 14, 1890.

¹⁸Expositor, February 12, 1890.

¹⁹Expositor, February 26, 1890.

²⁰Board of Supervisors, Minutes, April 19, 1890.

²¹Board of Supervisors, Minutes, March 3, 1890; and March 25, 1890; for homeowners opposition see Expositor, March 5, 1890.

²²Selma Enterprise, Heritage Selma (Selma: Press of the Selma Enterprise, July 1, 1976), p. 3-6; see also, Selma Irrigator, February 5, 1905.

²³Railroad Commission, Decisions, June 6, 1919.

²⁴Ibid.

²⁵Eugene R. Hallett, ed. Public Utilities Act of California (San Francisco: Louis Sloss and Co., 1912).

²⁶Railroad Commission, Decisions, March 28, 1914, April 3, 1913, June 27, 1913, February 7, 1915; April 19, 1916; May 26, 1916; October 21, 1916; February 7, 1917.

²⁷Republican, April 9, 1919.

²⁸Republican, April 14, 1919.

²⁹For name change see Republican, March 15, 1919; for assessed valuation see Republican, January 2, 1931.

³⁰Republican, August 20, 1920; May 18, 1919; and January 2, 1931.

³¹Railroad Commission, Decisions, June 6, 1919; see also Republican, April 9, 1919; April 14, 1919, April 17, 1919; Republican, August 20, 1920; and Bee, February 17, 1945.

- ³²Republican, January 23, 1920; April 14, 1919; May 25, 1919.
- ³³F.I.D., "New Year's Report" in Republican, January 2, 1931; see also Teilman, Historical Story, p. 30.
- ³⁴Republican, August 20, 1920; January 2, 1931; see also, Teilman, Historical Story, p. 30; and Smith, Garden of the Sun, p. 469.
- ³⁵Republican, January 25, 1925.
- ³⁶Republican, January 23, 1925; April 24, 1930, January 2, 1931; see also, Bee, September 21, 1933; October 23, 1935; for drought of 1930 see Republican, April 19, 1930. Only the Imperial Irrigation District was larger than F.I.D., see F.I.D., Annual Report, 1935.
- ³⁷Expositor, January 19, 1876; June 15, 1883; October 31, 1883; see also, Republican, July 29, 1928.
- ³⁸Expositor, April 2, 1890.
- ³⁹Ibid.; see also, Board of Trustees, Record, October 13, 1886; September 23, 1889; July 1, 1890.
- ⁴⁰American Public Works Association, History of Public Works in the United States (Chicago: American Public Works, 1976), pp. 217-245.
- ⁴¹For 1889 budget see Trustees, Record, July 1, 1890, see also Republican, December 14, 1901.
- ⁴²Republican, December 21, 1901.
- ⁴³Republican, July 29, 1901; December 13, 1901, December 29, 1901; see also, Trustees, Record, October 7, 1901.
- ⁴⁴Wishon, "History of San Joaquin Power;" see also San Joaquin Light and Power Magazine, July, 1925.
- ⁴⁵Bee, October 23, 1930; see also, Republican, October 2, 1930.
- ⁴⁶Bee, February 3, 1930; November 10, 1936; see also, Republican, January 15, 1930; February 4, 1930; and Railroad Commission, Decisions, March 21, 1927.
- ⁴⁷Republican, October 1, 1930.
- ⁴⁸Republican, September 4, 1929, September 5, 1929, February 16, 1930; Bee, September 5, 1959.
- ⁴⁹Republican, November 2, 1930.

⁵⁰Bee, January 23, 1930.

⁵¹Republican, January 15, 1930.

⁵²Bee, September 28, 1930; see also, Republican, October 22, 1930.

⁵³Commission of the City of Fresno, Minutes, September 18, 1931.

⁵⁴Commission, Minutes, January 23, 1930; see also, Bee, November 26, 1929; January 15, 1930; February 3, 1930; August 21, 1930.

⁵⁵Bee, November 1, 1930.

⁵⁶Commission, Minutes, November 13, 1930; see also, Bee November 6, 1931.

⁵⁷Bee, February 1, 1931; September 19, 1939; see also, Republican, December 19, 1930; and City of Fresno, Report of the Water Department, 1936, PWDCF.

⁵⁸Republican, April 24, 1931, May 19, 1931; see also, Fresno, Report of the Water Department, 1936.

⁵⁹Bee, February 16, 1934; June 18, 1936; March 19, 1936; August 27, 1936; September 10, 1936; May 8, 1939; May 12, 1939.

⁶⁰Republican, September 24, 1930.

FOOTNOTES, CHAPTER 5

- ¹Cooper, Aqueduct Empire, p. 58.
- ²For hydrology of the Central Valley see Bain, Northern California's Water Industry, p. 26, 29 and 32.
- ³Cooper, Aqueduct Empire, pp. 51-53; see also, Robert de Roos, The Thirsty Land: The Story of the Central Valley Project (Stanford: Stanford University Press, 1948), pp. 21 and 108; and, John C. Hogt, "The Drought of 1930," Journal of the American Water Works Association, vol. 23, November 1931, pp. 1822-1883.
- ⁴"Historical Highlights of the Central Valley Project," Western Construction, vol. 12, July 1937, pp. 255-258; see also, De Roos, Thirsty Land, pp. 21-26; and Cooper, Aqueduct Empire, p. 51.
- ⁵State of California, Department of Public Works, Bulletin No. 25, Report of Legislature of 1931 on State Water Plans, 1930; see also Mary Montgomery and Marion Clawson, United States Department of Agriculture Bureau of Agricultural Economics, History of Legislation and Policy Formation of the Central Valley Project (Berkeley, 1946), pp. 21-51; for USGS reports see U. S. Department of Interior, Bureau of Reclamation, Central Valley Basin (August 1949), pp. 229-244.
- ⁶Cited in Montgomery, History of Legislation, p. 58.
- ⁷Arguments against the 1933 Act are summarized in Montgomery, History of Legislation, pp. 52-53.
- ⁸Ibid.; see also, Robert Boyle, et. al., The Water Hustlers, pp. 152-153.
- ⁹Arguments for the 1933 Act are summarized in Montgomery, History of Legislation, pp. 53-61.
- ¹⁰Ibid., p. 61; see also, De Roos, Thirsty Land, pp. 27-35.
- ¹¹APWA, History of Public Works, pp. 313-314, 349-351; see also, U. S. Bureau of Reclamation, Central Valley Basin, p. 93.
- ¹²Boyle, Water Hustlers, p. 153; see also, State of California, Legislative Counsel, The Central Valley Project of California (May 1952), and Montgomery, History of Legislation, p. 65-67.
- ¹³Michael C. Robinson, Water for the West: The Bureau of Reclamation, 1902-1977 (Washington, D. C.: Bureau of Reclamation, 1977), pp. 123-128; see also, Walter W. Weir, "Drainage in the San Joaquin Valley As It May Be Affected By The Central Valley Project," American Geophysical Union Transactions, vol. 22(1), 1941, pp. 45-49; and Cooper, Aqueduct Empire, pp. 149-150.

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De Roos, Thirsty Land, pp. 7, 25 and 26; see also, Bain, Northern California's Water Industry, pp. 44-58.

¹⁵"How Friant Dam is Being Built," Engineering News-Record, vol. 125(5), August 1, 1940, pp. 144-148; see also, Kenneth B. Keener, "Friant Dam Plans Provide Unusual Design Features," Western Construction, No. 14, August, 1939, pp. 270-272.

¹⁶Charles M. Price and Earl R. Kruschke, Consensus and Cleavage: Issues in California Politics, (San Francisco: Chandler Publishing Co., 1967), pp. 428-430; see also, Bain, Northern California's Water Industry, pp. 399, 705-711; and Boyle, Water Hustlers, p. 154.

¹⁷Section 4, reprinted in Montgomery, History of Legislation, p. 132.

¹⁸Ibid., pp. 131-175; see also, Robinson, Water for the West, pp. 31-34; and Boyle, Water Hustlers, p. 153.

¹⁹Sheridan Downey, They Would Rule the Valley (San Francisco, 1947), p. 236.

²⁰Robinson, Water for the West, pp. 198-207; see also, De Roos, Thirsty Land, p. 73.

²¹State of California, Legislature, Assembly, Interim Committee on Conservation, Planning and Public Works, Central Valley Project: Federal or State? (University of California, 1955); see also, Boyle, Water Hustlers, pp. 160-171; and Paul H. Willison, Manager of the Fresno Irrigation District since 1956, Interview (July 5, 1978).

²²De Roos, Thirsty Land, pp. 46-61; see also, Bain, Northern California's Water Industry, pp. 467, 478-479.

²³De Roos, Thirsty Land, pp. 59-63.

²⁴Cited in De Roos, Thirsty Land, p. 64; see also, "Proposed Irrigation Project on the Kings River, California," Western Engineering, vol. 8 (February, 1917), pp. 57-58.

²⁵Ibid., p. 63.

²⁶Reedley Exponent, December 5, 1946; cited in De Roos, Thirsty Land, p. 70; see also, "The Kings River Project," Western Construction, vol. 32, (November 1957), pp. 26-27.

²⁷Reprinted at length in De Roos, Thirsty Land, p. 66.

²⁸Arthur Maass, Muddy Waters: The Army Corps of Engineers and the Nation's Rivers (Cambridge: Harvard University Press, 1951), Chapter 4; see also, "Kings River Plan for USBR Outlined for Comment," Western Construction, vol. 33, May 1958; pp. 59-60; and Paul Willison, Interview.

- ²⁹Bain, Northern California's Water Industry, pp. 478-480.
- ³⁰For hydrology of Fresno Area see Behnke, "Ground Water Nitrate Distribution," p. 477.
- ³¹City of Fresno, "Report on State Water Rights Board Hearings Held August 26, 28, 29, 1958 on City's Application for Future Surface Water Supply," (Fresno: Typewritten, 1958); see also Bee, December 7, 1948; April 13, 1950.
- ³²City of Fresno, Memorandum Regarding Inventory of Groundwater Needs (April 21, 1977), p. 2; see also, Republican, May 22, 1930; June 11, 1930; and, Bee, July 17, 1930; July 25, 1930; September 28, 1930.
- ³³Bain, Northern California's Water Industry, p. 420; see also, Bee, March 9, 1936; and June 26, 1937.
- ³⁴For annual flow of the San Joaquin, see Carolla Engineers, Water Resources, City of Fresno (Phoenix: Unpublished Report), 1969, p. 6; for canal capacities see Bain, Northern California's Water Industry, p. 54; see also, Bee, February 7, 1936, and March 29, 1936; and "San Joaquin Water Ruling" Engineering Record News, vol. 157(6) August 9, 1958, p. 25.
- ³⁵For well depths see McCormick, "Fresno Irrigation District," figure 3; see also, Bee, September 26, 1946, and January 21, 1948.
- ³⁶For Rank see Bee, April 13, 1950; February 18, 1969; for Krug see Downey, They Would Rule the Valley, pp. 27-28, 110-112; and Bee, January 21, 1948.
- ³⁷Bee, March 9, 1948; April 11, 1948; April 29, 1948; and February 12, 1956.
- ³⁸Bee, December 7, 1948; April 13, 1950; June 5, 1950; June 6, 1950; August 24, 1951; December 1, 1951; see also, U. S. District Court, California (Southern District) Northern Division, Everett G. Rank, et. al., plaintiffs, vs (Krug) United States of America, et. al., defendants (San Francisco: Pernau-Washington Print Co., 1956).
- ³⁹Bee, February 5, 1952; February 7, 1952; February 12, 1952; February 13, 1952; February 15, 1952, February 17, 1952; and February 20, 1952.
- ⁴⁰Bee, February 21, 1952; May 26, 1952; and September 5, 1952.
- ⁴¹For recent ground water studies see Fresno County Public Works Department, Northeast Fresno Ground Water Study (Fresno: Unpublished Report, 1976); and Carolla, Water Resources, Chapter 6; for Lee's Testimony see Bee, February 12, 1952; February 17, 1952.

⁴²Bee, May 26, 1953; August 4, 1953; and December 1, 1953.

⁴³Rank v. Krug, p. 246; quoted in the Bee, February 9, 1956; see also, Bee, August 4, 1953; December 1, 1953; May 26, 1953; May 29, 1953; April 2, 1954; August 31, 1954, October 31, 1954; December 1, 1954; and February 12, 1956.

⁴⁴Bee, February 10, 1957.

⁴⁵Bee, May 27, 1956; April 15, 1957; June 2, 1959; see also, Claude Rowe "The Words of Jacob" (Fresno: typewritten rebuttal to Fresno Bee article, February 19, 1954), CCF.

⁴⁶Bee, April 16, 1963.

⁴⁷Bee, April 1, 1961; April 22, 1961, and April 15, 1963.

⁴⁸Expositor, February 12, 1890.

⁴⁹Expositor, February 26, 1890, and March 5, 1890.

⁵⁰California State Water Rights Board Decision, June 2, 1959, p. 28; see also Rowe, Letter to the City Council Regarding June 2, 1959 Decision of the California State Water Board (Fresno: typewritten, June 10, 1959), p. 3.

⁵¹Bee, March 22, 1951; see also, Bain, Northern California's Water Industry, p. 454-457.

⁵²Bee, December 16, 1954.

⁵³Bee, April 5, 1951.

⁵⁴Bee, April 1, 1951; for another episode in the urban-rural water rivalry see Bee, January 13, 1951; March 27, 1951; and April 4, 1951.

⁵⁵City-Farm Week began November 20, 1951; see Bee, November 1, 1959.

⁵⁶For LAFCO see Ken W. Hohmann, City of Fresno Annexation Coordinator, Interview (July 18, 1978); for Fresno Metropolitan Control District see State of California, Department of Water Resources, General Comparison of California Water District Acts p. 163; for City-FID cooperation see John Jenks and Bruce Wyckoff, "Fresno Adopts 'Outstanding' Management Plan," Water and Wastes Engineering, (November, 1976).

FOOTNOTES, CHAPTER 6

¹Fresno Expositor, February 14, 1890.

²In 1975, the total value of Fresno agricultural production grossed over a billion dollars, the highest in the nation; see Fresno City and County Chamber of Commerce, Facts & Figures (Fresno, 1978), p. 8.

³Fresno City and County Chamber of Commerce, Profiles of Fresno (Fresno, 1977); see also, California Crop and Livestock Reporting Service, Summary of County Agricultural Commissioners' Reports (Fresno, 1977); and Fresno County, Department of Agriculture, Agricultural Crop Reports (Fresno, 1975 and 1977).

⁴Fresno County Local Agency Commission, Spheres of Influence for the Special Districts Within The Fresno-Clovis Spheres of Influence (Fresno: mimeographed, 1976); see also, Ken Hohmann, Annexation Coordinator, Interview (July 18, 1977).

⁵LAFCO, Spheres of Influence; see also, Ken Hohmann, Interview.

⁶City of Fresno, General Plan--Fresno-Clovis Metropolitan Area, (May, 1976); see also, Ken Hohmann, Interview.

⁷Quoted in the Bee, February 3, 1958.

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