UNIVERSITY OF CALIFORNIA, LOS ANGELES

Government and Water: A Study of the Influence of Water upon Governmental Institutions and Practices in the Development of Los Angeles

A thesis submitted in partial satisfaction of the requirements for the degree
Doctor of Philosophy in Political Science

by

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In Memory

of

CLARENCE A. DYKSTRA

who gave so freely of time and effort during
the last months of his life to guide this study
to its completion.

Control of water to secure maximum supply at costs determined by the economic situation is the engineering problem, and that problem is solvable.

Ahead of the engineering accomplishment is the engineering of men. The decision of the community at large must be made. For accomplishment, its public body, its semipublic water organizations, and its individuals must unite in team work to pool, rearrange and compromise existing interests, to legislate and to create a competent organization to carry out the engineering solution.

California, Department of Public Works, Division of Engineering and Irrigation, *Santa Ana Investigation*, p. 32.

PREFACE

The motivation for this study is rooted in personal experience. During my first stay of several years in the Los Angeles area, I had been relatively oblivious to the existence of a water problem. An unlimited quantity of water was always available at the water tap and seemingly no critical problem of water shortage existed for any of the water consumers of the area.

After leaving the Los Angeles area, I became a resident of a small city in Wyoming where the problem of an adequate water supply was a daily concern to the community. The normal water consumption of the householder was subject to detailed regulation by municipal ordinance. The irrigation of lawns and gardens was limited to certain days of the week for even- and odd-numbered street addresses. Then, watering was permitted only for specific hours in the day. Nozzles and sprinklers were required to prevent the waste of water. All of these regulations were enforced subject to penalties for a misdemeanor if violated.

The contrast between the two communities was so marked as to demand an explanation. How had Los Angeles, under comparable conditions of aridity been able to secure an adequate water supply and manage its water resources to be able to meet the needs for all local requirements? Obviously the development of an adequate water supply and the administration of the available water resources were of the first order of importance to human life in the arid west.

Preliminary investigations of the water problem and other related aspects of natural resources administration revealed that these problems presented unique demands upon political institutions and practices to facilitate human adjustment to requirements of the physical environment of the arid west. The works of John H. Powell, Elwood Moad, Frederick Jackson Turner, and John M. Caus stimulated further interest to consider the adaptations of political

action in approaching these problems and the impact of these problems upon social and political organization in the west.

This study has been conceived essentially as a case study of the impact of water as one of the critical factors in the human ecology of the Los Angeles area upon development of governmental institutions and practices in the growth of the Los Angeles metropolitan community. The development of one of the largest American cities in an arid region intensified the importance of the problem.

By using the water problem as a focus of attention to consider the various facets of political action, which arise from efforts to deal with the problem, certain values may be derived which obviate weaknesses implicit within the conventional academic divisions of political science. The usual dichotomy between politics and administration is avoided so that the political process can be observed in its inherent unity. The division of responsibility between federal, state and local government loses its arbitrary characteristics when the role of the various units of a federal government are viewed in terms of a force which transcends political jurisdictions.

In this study, it has been necessary to use some terms and measures of a technical nature. The accompanying table provides the equivalents of hydrologic measures which may be useful to the reader.

Many persons to numerous to mention within these pages gave generously of their time and energy to make material and information available for research and to give me the benefit of their years of experience and insights regarding the human aspects of the water problem in Los Angeles. Countless other persons who have woven the story of Los Angeles' struggle with this problem have provided both the substance and the record to make this study possible.

TABLE OF EQUIVALENTS

UNITS OF MEASURE	EQUIVALENT
1. 1 cubic foot of water	1. 7.48 gallons
2. 1 cubic foot of water	2. 62.5 pounds
3. 32 cubic feet of water	3. 1 ton
4. 1 cubic foot per second flow **(a)**	4. 7.48 gallons per second 448.8 gallons per minute 646,317 gallons per day
5. 1 cubic foot per second flow	5. 1,983 acre feet per day or approximately one acre-inch per hour 723,795 acre-feet per hour
6. 1 acre-foot of water **(b)**	6. 43,560 cubic feet 325,850 gallons
7. 1 cubic foot per second flow	7. 40 miner's inches **(c)** (Calif. and Aris.) 38.4 miner's inches (Colo.) 50 miner's inches (So. Calif.)
8. 1 million gallons	8. 3.07 acre feet
9. 1 horse-power	9. 1 cubic foot of water falling 8.80 feet
10. 1 horse power	10. .746 kilowatts

(a) 1 cubic flow per second flow is a measure of the rate of flow required for one cubic foot of water to pass a given point each second in time.

(b) 1 acre-foot is a measure of the volume of water required to cover an acre one foot in depth.

(c) 1 miner's inch is a measure of the rate of flow of water with varying values depending upon statutory provision or customary usage. While California has established the minor's inch as the equivalent of $1/40^{th}$ of a cubic foot per second flow, Southern California hydrographers customarily use the miner's inch as the equivalent of $1/50^{th}$ of a cubic foot per second flow.

I am deeply indebted to Dr. Clarence A. Dykstra who took time from his heavy administrative responsibilities as Provost to serve as the chairman of my doctoral committee and to direct the research on the dissertation. Dr. Dykstra's intimate knowledge of Los Angeles water administration, as a result of his service on the Board of Water and Power Commissioners and as Director of Personnel and Efficiency for the Department of Water and Power, greatly facilitated my orientation to the subject matter and my acquaintance with persons involved in the Los Angeles water problem.

The other members of my doctoral committee, Dr. Winston W. Crouch, Dr. Malbone W. Graham, Dr. Thomas P. Jenkin, Dr. Charles H. Titus, Dr. Ruth E. Baugh and Dr. Craig L. Taylor, were very helpful in general guidance of my research program and in providing counsel for the many problems arising in a graduate study program in addition to making many helpful criticisms of this dissertation. Dr. Crouch was especially helpful in anticipating and meeting a number of problems that might otherwise have caused delay and inconvenience. Dr. Baugh offered many invaluable suggestions and comments on the portions of the study concerned with geographic data in addition to many other constructive criticisms of the paper as a whole.

To Dr. Dean E. McHenry, Dean of the Division of the Social Sciences and Chairman, Department of Political Science, I am greatly indebted for many years of friendly advice and counsel which led me on advanced studies and an academic career. On many problems relating more immediately to the preparation of this dissertation, Dr. McHenry gave freely of his time and effort in valued advice and assistance.

At the department of Water and Power, I received the friendliest cooperation from numerous persons throughout the organization. I am especially indebted to Samuel B. Morris, General Manager and Chief Engineer pf the Department of Water and Power, for his friendly

cooperation and his efforts to assure my success to all types of information and data available in the department. Walter K. Boyd was most helpful in giving me access to the department's elaborate collection of newspaper clippings extending from 1905 to the present, in providing me with copies of several maps used in the study and in reading the first draft of the manuscript.

Most of the research for this study was done in the library of the Department of Water and Power. Mrs. Frances S. Davis and her staff were exceptionally cooperative in providing information and assistance at each stage of the research. The sense of helpfulness and cheerfulness pervading the library provided a thoroughly delightful environment for endless hours of grueling research.

Many officials and employees of other public agencies including various departments of municipally government in Los Angeles, the Metropolitan Water District of Southern California, the Colorado River Board of California, the Division of Water Rights of the California Department of Public Works as well as numerous private individuals, and several private associations including the Los Angeles Chamber of Commerce and the Colorado River Association, gave extensive information and assistance valuable to the final completion of this study.

Finally, I wish to express my deep appreciation to my wife, Isabell B. Ostrom, for the invaluable assistance to which she has given by reading and helping to prepare the manuscript.

I assume full responsibility for any interpretations of facts, observations or opinions and for any erroneous statement of fact.

Vincent A. Ostrom
University of Oregon

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Consider the desert
Amid the thunders of great silence in these wastelands lies the key to the future of our Southland.
Some men look and see only sand and rock, stretching endlessly
Others gaze on the desert scene and read a sermon in the sand, the cactus and the flowers.
Silence everywhere – majestic, wonderful
God made the desert, and the Great Architect of the Universe does all things well. Out of the desert with its rocks, heaven-hued and awe-inspiring, its cactus like sentinels of solitude raised this Los Angeles – your city and mine.
The magic touch of water quickened the desert into its flowering life – our city.
And lest our city shrivel and die, we must have more water, we must build a great now aqueduct to the Colorado.

William Mulholland, 1925

CHAPTER I

THE LOS ANGELES WATER SUPPLY

Southern California

Los Angeles, the third largest metropolis in the United States, has developed in one of the smallest and driest watershed areas. With little more than one pre cent of the state's water resources, southern California supports over one-half of the population of California.[1]

The semi-desert coastal plains of Southern California extend from Point Conception at the entrance to Santa Barbara Channel to the Mexican border a distance of 275 miles, with a depth that is practically nil where the Santa Ynes Mountains almost meet the sea to nearly one hundred miles from the foothills of the San Bernardino Mountains to the beaches at Santa Monica.

The Southern California coastal strip is surrounded by a single more or less continuous chain of mountains formed from the convergence of the Coast Ranges and the Sierra Nevada at Tehachapi Pass and continuing southeasterly to Lower California. Among the more prominent mountainous masses are the Tehachapi, the San Gabriel, the San Bernardino, the San Jacinto and

[1] California, Department of Public Works, Division of Engineering and Irrigation. Summary Report on the Water Resources of California and a Coordinated Plan for Their Development. Bulletin No. 12 (Sacramento, 1927), p. 42.

the Peninsular Range. Few of the dominating peaks rise to more than 10,000 feet above sea level, with a general elevation that is intermediate between the Coast Range and the Sierra Nevada.[2] However, the sharp rise of the mountains from the floor of the plains tends to accentuate the contrasts in the relief of the region.

This chain of mountains saves the coastal plains from the bleak desolation and the tortuous extremes of the Mojave Desert, Colorado Desert and the notorious Death Valley. The mountains form and insulating barrier, permitting the moderate breezes from the ocean to blanket the coastal plains while restricting the desert air mass with its extreme of heat in summer and cold in winter. The limited moisture that moves across the land with the winter storms is intercepted by the mountains to provide in pat the water so essential to the life and development of the region.

This delicate balance between the ocean, the mountains and the desert has created the incomparable climate of Southern California. This land of sunshine and ocean breezes is so marked by contrast with its hinterland that it has been described as "a sort of island on the land."[3]

Los Angeles, the dominant city of the region, occupies 453 square miles of area in the western portion of the water drainage basin officially known as the South Coastal Basin. This strategically located drainage basin covers the broadest reaches of the Southern California coastal plain with the greatest industrial and agricultural development of the region. The entire South Coastal Basin has an area of 3,900 square miles with 2,500 square miles of irrigable or habitable land.[4] While the South Coastal Basin also includes the watersheds of the San Gabriel

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[2] Ibid., Water Resources of California. Bulletin No. 4 (Sacramento, 1923), p. 20.
[3] Carey McWilliams, Southern California Country, An Island on the Land (New York: Duell, Sloan & Pearce, 1946) p.7.
[4] California, Department of Public Works, Division of Water Resources, South Coastal Basin, A Cooperative Symposium of Activities and Plans of Public Agencies in Los Angeles, Orange, San Bernardino and Riverside counties, Leading to Conservation of Local Water Supplies and Management of Underground Reservoirs. Bulletin No. 32 (Sacramento, 1930), p.9.

and the Santa Ana rivers, Los Angeles has access only to the Los Angeles River and the intermediate coastal plain for its local water supply.

The Local Water Supply

The Watershed. For many decades the Los Angeles River was the exclusive source of water supply for Los Angeles and it continues to be important today. This watershed, approximately 500 square miles in area, is almost entirely enclosed by mountains.

The rugged San Gabriel Mountains, familiarly known as the Sierra Madre, are the principal range in the Los Angeles watershed. Rising on the northeastern boundary of the City of Los Angeles, they reach a comparatively high elevation of 6,000 feet at the crest line above the slopes facing the city.[5]

A relatively low range of mountains, the Santa Susana Mountains continue from the western terminus of the San Gabriels to form the northern bounds of the watershed, separating the drainage area of the South Coastal Basin and the Los Angeles River from the Ventura Basin and the Santa Clara River. A Series of hills, known as the Simi Hills, forms the western limits of the watershed joining the Santa Susana Mountains with the Santa Monica Mountains. The Santa Monica extend form the ocean north of the City of Santa Monica, inland to where the Los Angeles River has cut its course through hills, forming the southern boundary of the watershed. From the San Gabriel Mountains another range of low mountains and hills including the Verdugo Mountains extend south to the river to complete the mountainous bounds of the drainage basin.[6]

The narrow flood plain, through which the river flows, is the break between the Santa Monica Mountains and the Verdugo Mountains is known as the Glendale Narrows. The Narrows

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[5] Ibid., South Coastal Basin Intervention, Geology and Ground Water Storage Capacity of Valley Fill. Bulletin No. 45 (Sacramento, 1934), p. 33.
[6] Ibid., pp. 26-28.

are only about one mile wide at the narrowest point. The same general geological formation giving rise to the mountains continues under the alluvial deposits of the river bed to form the bed rook which is about one hundred feet below the surface of the plains.[7]

Above the Narrows, within the ring of mountains is a large structural valley filled with alluvium, eroded from the surrounding mountains and deposited to depths of several hundred feet. This valley with and area of nearly 200 square miles, is known as the San Fernando Valley. The eastern half of San Fernando Valley is covered by pervious gravel cones formed by the Big and Little Tujunga rivers and Facoima Creek. The smaller streams from the Santa Monica range have deposited less pervious cones along the valley floor.[8]

These pervious alluvial deposits in San Fernando Valley form a natural reservoir for the storage of an immense amount of water. It has been estimated that in a 100-foot zone, fifty feet above and fifty feet below the water table there is a storage capacity of 944,000 acre feet of water in San Fernando Valley.[9] Since there are no serious fault structures to act as an obstacle to the underground flow of water through the pervious alluvium, San Fernando Valley is like a vast underground lake. This subterranean lake is the source of the Los Angeles River.

The Water Crop. The main source of the water crop of the Los Angeles River watershed is in the mountain ranges surrounding the San Fernando Valley, and principally in the western San Gabriel Mountains. These rugged and comparatively high mountains, with an area of 174 square miles within the Los Angeles River watershed, receive the precipitation of rain clouds, moving in from the ocean, on their southern and western slopes, to produce the substantial portion of the water harvest.

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[7] Ibid., p. 117.
[8] Ibid., pp. 28-29.
[9] *Ibid*., p. 21.

[Map of the Los Angeles Watershed here]

The effect of elevation and inland position upon precipitation is illustrated by the following measurements at locations along a line extending from San Pedro to the Mojave Desert:

> At an elevation of 10 feet, San Pedro receives but 10.66 inches per year. Los Angeles (338 feet) has an annual rainfall of 14.95 inches, Pasadena (805 feet) 18.17 inches. Sierra Madre, at the base of steep mountain slopes, gets 23.67 inches, at an elevation of 1,100 feet. Lowe Observatory, somewhat over half the distance up the seaward face of the Sierra Madre (3,420 feet) has an annual rainfall of 26.74 inches; and Mount Wilson 5,850 feet, on one of the summit peaks, gets 31.20 inches. Across the range, even though 3,400 feet above sea level, Llano has a total precipitation of but 6.41 inches. The distance from San Pedro to Mount Wilson is 40 miles and that to Llano is less than 60.[10]

This water crop descends the slopes of the mountains during the wet season in numerous rivulets and streams to the floor of the San Fernando Valley, principally through the Big and Little Tujunga and Pacoima creeks at the northeastern edge of the valley. The discharge into San Fernando Valley from the 153 square miles of area within the Santa Susana Mountains, the Santa Monica Mountains, and other foothill areas is slight in comparison to that from the San Gabriel Mountains.

Normally the water discharged from the mountains disappears into the detritus cones of the tributary streams to continue its course underground until it reaches the lower levels of the valley along the base of the Santa Monica Mountains. Here the water normally rises to the surface to form the Los Angeles River which first appears at the Encino rancho and flows with increasing volume until it passes the bed rock of the Narrows, where it reaches its peak flow. The tributaries of the Los Angeles River do not maintain a continuous surface flow in a single drainage system, except during flood discharge.[11]

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[10] Roderick Peattie, ed., The Pacific Coast Ranges (New York: The Vanguard Press, Inc., 1946), p. 374.
[11] William Mulholland, "A Brief Historical Sketch of the Growth of the Los Angeles City Water Department," Public Services IV, (June, 1920) 3.

On the coastal plain below the Narrows, between the Santa Monica Mountains and the ocean is additional water bearing strata with significant potentials for water supply. Geological notion through faulting and uplift have resulted in a number of partially isolated ground water basins within the general area of the coastal plain. The most significant of these is the Beverly-Newport uplift, a series of hills extending from Beverly Hills to Newport Beach. However, percolating water breaches this barrier in a number of points permitting movement from one basin to another.

The source of water in the coastal plain basins is the percolation of water through the gravels above the bed rock of the Narrows and precipitation on the coastal plains and adjacent areas in the Santa Monica Mountains. Generally the lower reaches of the coastal plain is covered by impervious strata which reduces the amount of water that can be taken into the ground water basins. But the impervious quality of these strata also produces the conditions necessary for the development of artesian wells which have been a significant source of municipal supply for some portions of the city located on the lower coastal plains, especially the Wilmington and San Pedro harbor areas.

The Stability of the Local Supply. This combination of physical circumstances has done much to make possible a metropolis in a desert. The immensity of the underground reservoir in the San Fernando Valley has tended to stabilize the seasonal and annual flow of the Los Angeles River. The waters stored among the earth particles during the rainy season are released at a nearly uniform rate during the year. Even one year of deficient rainfall will not appreciably alter the flow of the river although prolonged droughts have reduced the virgin flow of the river by about one-half of its maximum mean flow during a series of wet years.

This firm perennial flow at the Narrows unquestionably was the reason for the inland location of the original Spanish pueblo that was to become Los Angeles. Friar Crespi, the chronicler for the Portola expedition, which first discovered the Los Angeles River on August 3, 1769 was greatly impressed by the "beautiful" river and reported it to be "…the most suitable site of all that we have seen for a mission, for it has all the requisites for a large settlement."[12]

In addition to the remarkable stability of the natural flow of the river, the tremendous reserves within the confines of the San Fernando basin were available for exploitation to meet the needs of a growing community. While fears had been expressed that the limits of the local water supply had been reached when the population numbered only 10,000, Los Angeles was able to grow to a prosperous city of 350,000 before it secured water from the Owens River to supplement the local supplies.[13] Long term cyclical variations in precipitation however, have seriously affected the adequacy of the local water supply during the dry phase of the cycle. The low flow of the dry cycle and the increasing demand of a growing population were the determinants of the adequacy of the local supply.

While the average annual precipitation for Los Angeles is approximately fifteen inches, rainfall is subject to periodic wet and dry cycles that vary greatly from the mean. During the ten-year period from 1894-1904 annual precipitation varied from a maximum of 19.32 inches to a low of 5.59 inches. Five years within that decade had an annual precipitation of less than nine inches, with these consecutive years from 1897-1899 receiving only 7.06, 5.59 and 7.91 inches respectively. In contrast to this dry cycle the immediately preceding decade registered maximum precipitation of 38.18 in1884 and a minimum of 9.21 in 1885. Five years of this wet cycle

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[12] Herbert E. Bolton, Pray Juan Crespi, Missionary Explorer on the Pacific Coast, 1769-*1774* (Berkeley: University of California Press, 1927), p. 147.
[13] J.M. Guinn, A History of California and an Extended History of Los Angeles and Environs (Los Angeles: Historic Record Company, 1915), p. 390.

exceeded nineteen inches of rainfall.[14] Similar Cycles, with each phase varying somewhat from the ten-year average, have marked the precipitation record since accurate measurements began in the year of 1877-78.

In an effort to explore rainfall fluctuation over a longer period to determine the probably variations in future supplies, Henry B. Lynch constructed rainfall and stream run-off measures for Southern California based upon all available records, diaries, crop data and official reports to 1769. On the basis of this study, Lynch arrived at the following conclusions:

> There has been no material change in the mean climatic condition of Southern California in the past 162 years.
>
> There have been earlier fluctuations from average rainfall conditions, however, both excesses and deficiencies, of greater magnitude than any which have occurred in the past forty years.
>
> The 20 year period of rainfall deficiency which ended in 1810 was about as severe as has been the present one to date, and much more protracted.
>
> The period of rainfall surplus from 1810 to 1821 was more intense than any in the past forty years. It seems to have been about as in intense as that between 1883 and 1895.
>
> The period of rainfall deficiency which lasted from 1822 to 1832 was more severe than has been any occurring since.
>
> The period of rainfall deficiency which commenced in 1842 and lasted until 1883 was much longer than any other of which we have record. It was not so acute, however, as some others, both earlier and later. It was broken by a period of normal rainfall, but was without any period of normal rainfall to balance the deficiency.
>
> In comparison with several periods of rainfall shortage which have occurred in past years, this present rainfall deficiency to date cannot be considered a major shortage.
>
> By means of those fluctuations, the useful water yield has at various times been reduced from the average by considerably more than one-half for a period of 10 years.[15]

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[14] Henry B. Lynch, Rainfall and Stream Run-off in Southern California Since 1769 (Los Angeles: Metropolitan Water District of Southern California, 1951), p. 25. See also A.L. Sonderegger, "Sources of Local Water Supply," in School of Citizenship and Public Administration, Compilation of Papers Read Before the Water Supply Section (Los Angeles: University of Southern California, 1930), pp. 42-50.
[15] Ibid., pp. 1-2.

The cyclical behavior of annual precipitation is reflected in the flow of the perennial streams of Southern California. During the decade of excess rainfall from 1884-1894, the mean annual flow of the Los Angeles River reached a record level of 100 cubic feet per second. The five year period of 1900-1904 inclusive had a mean annual flow of 48.5 second feet with mean annual flows of fifty-seven second feet for 1900, 53.5 second feet for 1901, forty-five second feet for 1902, forty-four second feet in 1903, and an all-time recorded low of 42.8 second feet in 1904.[16] This gradual decline in the flow of the river generally reflected the cyclical pattern and does not respond to favorable precipitation in a single season. The fall of 19.32 inches of rain at Los Angeles did not affect the general cyclical trend during this five year period. A second year with precipitation in excess of nineteen inches in 1905 after an extreme deficiency year in 1904 was reflected in only a slight rise in the river to a mean flow of 45.5.[17] After a series of wet years the river was again flowing at a mean rate of sixty-eight second feet in 1910.[18]

The remarkable stability of the Los Angeles River is indicated by the slight variations during 1904 which marked the last year of 1894-1904 dry cycle. The mean flow of 42.8 second feet was exceeded by only 11.7 per cent when the maximum observed daily flow of 47.8 second feet as measured on May 25, 1904. The minimum flow was 40.16 second feet, as measured on September 7, or six and two-tenths per cent below the mean flow for the year.[19]

The Limit of the Local Supply. While the water supply was responding to an undulating pattern of surplus and drought, the population of Los Angeles was advancing in geometric proportions. With a population of only 11,183 in 1880, Los Angeles jumped to 50,395 persons in

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[16] Los Angeles City, Board of Water Commissioners, Report for the Year Ending November 30, 1905 (Los Angeles, 1906), p. 35.
[17] Los Angeles City, Department of Public Works, Bureau of the Los Angeles Aqueduct First Annual Report (Los Angeles, 1907), p. 8.
[18] Los Angeles City, Board of Public Service Commissioners Tenth Annual Report For the Year Ending June 30, 1911 (Los Angeles, 1911), p. 10.
[19] Los Angeles City, Board of Water Commissioners, *op. cit.*, p. 35.

1890 and to 102,479 by 1900.[20] By the end of the dry cycle in 1905 the city had attained a population of approximately a quarter of a million persons.

During this dry cycle the city's water supply problem was rapidly approaching a crisis. The inadequate flow of the river was supplemented by the construction of wells and an extension of the underground galleries at the Narrows. Wells were sunk into the coastal plain. Altogether these supplementary sources provided an average flow of 28.5 second feet to give the city a net supply of 71.5 second feet or forty-six million gallons daily. On the basis of an average annual consumption of 150 gallons per capita per day this would be adequate to supply a population of 300,000.

But with the slight variation of seasonal supply and the peak summer demands, the city was reaching the limit of its local water supply. The heavy summer water consumption approached crisis proportions. During a ten-day period beginning July 20, 1904, the average daily flow into the reservoirs had decreased to 35,782,000 gallons producing a daily crop in reservoir capacity of 3,494,000 gallons. At the end of the ten-day period, the temperature moderated and water consumption dropped below the average daily flow enabling the half-emptied reservoirs to fill again.[21]

Earlier measures such as the elimination in 1903, of the last of the open ditches used to irrigate agricultural areas about the city and the introduction of metering to reduce waste in water consumption had been effected to conserve the available water supply as fully as possible.

Under these circumstances, if the city were to continue its phenomenal growth, a new source of water supply was absolutely essential. In his third annual report to the Board of Water Commissioners, William Mulholland, superintendent of the water department, observed that,

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[20] Cuinn, *op. cit.*, p. 255.
[21] Los Angeles City, Department of Public Works, *op. cit.*, p. 8.

"The time has come … when we shall have to supplement its (the Los Angeles River's) flow from some other source."

But as Mulholland further observed,

> There are but two other streams on this side of the mountains that can compare with it, but it would cost many millions to purchase either of them, as there waters have been used … to water the rich agricultural sections created by such use.[22]

In the South Coastal Basin the only other streams with perennial flow are the San Gabriel and Santa Ana rivers. Both of these streams were being heavily appropriated for agricultural and domestic use in the famed citrus croplands through the San Gabriel and Pomona valleys and Orange county. The underground waters of the coastal basins were being subjected to very heavy drafts. In 1904, W.C. Mendenhall of the U.S. Geological Survey estimated that $2,413,000 had already been invested in pumping plants and facilities on the coastal plain between the Puente Hills and the ocean to irrigate 100,000 acres with a total mean flow of 275 second feet. In 1888, it was estimated that this area had 296 square miles of land with artesian flow. Mendenhall found that the area of artesian flow had shrunk to 192 square miles and that the rate of flow within this area remaining artesian had materially diminished.[23]

No adequate water to meet future requirements of substantial urban and agricultural growth could be found on the watersheds of the coastal plains of Southern California. The only alternatives were a restricted growth within the limits of a carefully conserved local supply or to secure a new source of supply beyond the mountains.

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[22]Los Angeles City, Department of Public Works, Bureau of the Los Angeles Aqueduct, Third Annual Report (Los Angeles, 1908), p. 23. Parenthetical information added.

[23] Los Angeles City, Department of Public Works, Bureau of the Los Angeles Aqueduct, First Annual Report, pp. 73-74.

New Source of Supply: Owens River

Discovery. By fortunate circumstance, a prominent local engineer, Frederick B. Eaton, who had formerly served as superintendent of the Los Angeles City Water Company as well as city engineer and mayor of Los Angeles, had discovered a new source of water supply which could be made available to the City of Los Angeles from the eastern slopes of the towering Sierra Nevada, some 250 miles away. Around 1890, Fred Eaton had gone into Owens Valley to consider the possibility of developing and irrigation project in the Inyo-Kern district with water from the Owens River.[24]

From a general view of the terrain, he became convinced of the possibility of developing an aqueduct to take the surplus waters of the Owens River across the Mojave Desert, through the coastal range at the northwestern end of the San Gabriel Mountains into San Fernando Valley by gravity flow. During the next decade he spent his vacations and spare time making surveys of Owens Valley and possible routes for an aqueduct across the desert to Los Angeles. The surveys confirmed his conviction of the feasibility of the project.

[Map of Owens Valley and the Los Angeles Aqueduct here]

The Owens River Watershed. The Owens River drainage system is located between the eastern slope of the Sierra Nevada and the parallel Inyo Range. The basin is long and narrow with a slight northwest-southeast trend. From the head of the basin at Mono divide to its terminus at Owens Lake is 120 miles. Its width varies from forty miles at the north end to twenty-five miles at the lake, with a minimum width of fifteen miles between Bishop and Big Pine.[25]

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[24] *Ibid*., p. 17.

[25] Los Angeles City, Department of Public Service, *Complete Report on Construction of the Los Angeles Aqueduct with Introductory Historical Sketch* (Los Angeles, Department of Public Service, 1916), p. 276.

A secondary range within the drainage basin extends from a few miles north of Bishop to the Mono Craters separating the upper basin into two valleys. The western portion is known as Long Valley. The head of Owens Valley is to the east. Owens Valley, about eighty miles long, includes the greater portion of the drainage system, extending south to Owens Lake. Its floor ranges in width from two to eight miles.

At the northern end of Long Valley, near the Mono Divide, the valley floor is about 8,000 feet above sea level. From the end of Long Valley at an elevation of 6,670 feet to Owens Valley proper there is a drop of 2,200 feet in a distance of about twenty miles. Through a lava sheet extending across the valley at this point, the Owens River has out a deep gorge known as the Owens River Gorge. From this point where the river enters the floor of Owens Valley north of Bishop, there is a nearly uniform gradient to its terminus in Owens Lake which has an elevation of 3,567 feet above sea level.[26]

With the advantage of an initial elevation of about 4,000 feet, it would be possible to divert the water from the river at a point some thirty miles above the lake, and by following the contour, cross the hills along the lower end of the Sierra Nevada, across the Mojave desert and through tunnels piercing the coast range to San Fernando Valley all by gravity flow.

Owens River is supplied with about forty small tributaries entering at fairly regular intervals from the west. The 536 square miles of the drainage basin on the slopes of the Sierra Nevada produce most of the water crop. There is very little run-off from the desert mountains on the eastern bounds of the valley. Precipitation ranges from an average of three or four inches at Owens River in the Independence area to thirty to forty inches at the crest of the Sierra Nevada.[27]

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[26] Ibid., p. 277.
[27] Ibid., p. 278.

Because of elevation, most of the precipitation occurs in the form of snowfall. As a result, stream discharge is at a minimum between September and April, although about eighty per cent of the precipitation falls during this period. When the snow begins to melt around the first of April, stream flow increases as the temperature rises, reaching a maximum discharge between June 15 and July 15 depending on the quantity of snow to be melted. The discharge decreases to its minimum flow in September. The minimum flow remains very regular since it depends almost entirely upon percolating ground water.

The floor of the valley is composed largely of absorbent volcanic ash and tufaceous rocks. The streams discharging onto the valley floor have accumulated large gravel cones which are ideal for the absorption of surface water into the underground basins. Since the underground basin is completely enclosed by impervious barriers these waters percolate to the river. This percolation helps to regulate the annual flow.

Accurate data on the flow of the Owens River was not available before 1904. Measurements for that year indicated a mean annual flow 353 cubic feet per second, but in 1905 the flow dropped to 258 second feet. Since this period represented the low point in a dry cycle of years this was assumed to be the minimum flow of the river. In 1906 the mean annual flow of the river was measured at 714 second feet. On the basis of preliminary hydrographic estimates, it was assumed that the Owens River would produce an annual mean flow of about 400 cubic feet per second.[28]

Acquisition. When Eaton first became convinced of the physical practicability of the Owens River supply, he realized that the economic and political circumstances were

[28] Ibid., p. 52-57.

inopportune.[29] Eaton waited until conditions seemed favorable for the reception of his idea. In 1904, he presented his plan to William Mulholland, chief engineer of the Los Angeles City Water Department. In September 1904, Mulholland went into Owens Valley with Fred Eaton to examine the route and hydrography of the region. On the basis of this survey and detailed analyses, Mulholland urged the construction of an aqueduct for and estimated $25,000,000.

Early in 1905, a delegation of city officials including John F. Fay Jr. and J.M. Slliott of the water board, Mayor Owen McAleer, City Attorney William B. Mathews and William Mulholland, accompanied by Fred Eaton, made a tour of the proposed aqueduct route and the Owens Valley water supply. They enthusiastically approved the plan for the aqueduct and made preliminary arrangements with Fred Eaton to acquire the necessary land and water rights.[30]

Eaton, who had plans to convert his vision into a fortune, had already taken preliminary steps to acquire water rights on the Owens River. His proposals contemplating purchase of the necessary land and water rights to be delivered to the city without cost in exchange for benefits from the aqueduct failed to materialize. Consequently Eaton agreed to sell the options for land and water rights already in his possession and to acquire the necessary additional water rights to assure the city control of the flow in the lower channel of the Owens River.

Using the subterfuge that he was trying to develop large cattle holdings in the valley, Eaton purchased and turned over to the city 22,670 acres of land in Owens Valley with all

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[29] Los Angeles *Times*, July 29, 1905. William Mulholland reported the following incident: "Thirteen years ago Fred Eaton first told me that Los Angeles would one day secure its water supply from Owens Valley', said Mr. Mulholland, telling how it came to pass; 'at that time the Los Angeles River was running 40,000,000 gallons of water daily and we had a population of less than 50,000. I laughed at him.
'We have enough water here in the river to supply the city for the next fifty years', I told him.
'You are wrong,' he said, 'You have not lived in this country as long as I have. I was born here and have seen dry years, years you know nothing about. Wait and see.'
'Four years ago I began to discover that Fred was right. Our population climbed to the top and the bottom appeared to drop out of the river.'"

[30] Los Angeles City, Department of Public Service, Complete Report on Construction of the Los Angeles Aqueduct with Introductory Historical Sketch, p. 276.

appurtenant water rights, including sixteen miles of frontage on the Owens River, an easement permitting the perpetual use of 2,680 acres in the Long Valley reservoir site, below the 100 food contour, and options on large tracts of land riparian to the Owens River.[31]

The first news of the venture appeared on July 29, 1905. Mulholland, Mathews and others explained their amazing project to an overwhelmed citizenry who gave their almost unanimous approval on September 7, 1905 for bonds to consummate the land purchases and to begin preliminary surveys of the aqueduct. The land purchases were closed and the work on the detailed plans and surveys of the aqueduct were begun.

By November of 1906, the plans and designs were submitted for review to a board of consulting engineers who gave their approval of the project. On June 12, 1907, a $23,000,000 bond issue for the construction of the aqueduct was approved by the citizens of Los Angeles. With these funds, the actual construction of the aqueduct was commenced in 1908 and five years later on November 5, 1913, the first Owens River water entered San Fernando Valley. The work was completed within the original estimates of $25,000,000.

The Los Angeles Aqueduct. The flow of the Owens River is diverted into an open canal at the Intake near the Alabama Hills, thirty miles above Owens Lake, after passing through the Tinemaha regulating reservoir. The aqueduct follows the highest possible contour until it crosses the first twenty miles of the aqueduct is an open unlined canal to collect seepage from artesian strata. The remaining forty miles of canal to Haiwee reservoir are lined with concrete.[32]

After fifteen miles of covered conduit from Haiwee reservoir to Little Lake, the aqueduct traverses rugged country near Indian Wells, the Red Rock and Jawbone canyons, through tunnels, siphons and conduit. Across Mojave Desert to the west end of Antelope Valley nearly

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[31] Ibid., p. 48.
[32] For a general description of the Los Angeles Aqueduct see Ibid., pp.18, 75-81. Los Angeles City, Board of Water and Power Commissioners, Fortieth Annual Report for Fiscal Year Ending June 30, 1941 (Los Angeles, 1941), p. 9.

seventy miles of fairly regular terrain are spanned with conduit and siphons to the Fairmount reservoir. Beyond the Fairmount reservoir, the Elizabeth tunnel pierces the Coast Range carrying the aqueduct water to the head of the power drop in San Francisquito Canyon. Bouquet reservoir, with a capacity of 36,500 acre feet, stores water to regulate the flow for both power generation and water supply requirements. From San Francisquito Canyon the aqueduct water flows through siphons, tunnels, conduit and tiny Dry Canyon reservoir into the San Fernando Valley reservoirs to enter the Los Angeles municipal water distribution system.

The Limits of the Owens River Supply. During the first year after the completion of the aqueduct, the city was still pre-occupied with what to do with the surplus water. With the decision to annex San Fernando Valley and other contiguous areas to make the surplus water from the aqueduct available for irrigation, all of the waters of the aqueduct were quickly absorbed. The full flow of the aqueduct was being utilized by 1918.

With the continuance of the population increase by which the number of people in Los Angeles had risen from 319,189 in 1910 to 576,637 in 1920, a new wave of expansion in the early 1920's caused Mulholland to become concerned about the future water supply. The Owens River supply had been estimated as adequate to supply the domestic and industrial requirements of a population of two million which could not be too far away. Anticipating this problem, Mulholland, in his annual report submitted on June 30, 1923, observed,

> … the season just (past) has been one of the lowest in precipitation in the history of the term of years covered by our measurements, and re-emphasized the importance of looking well in advance into the future for our productive needs. Reconnaissance work to that end has been taken up or rather resumed, for in point of fact no engineering corps having the important task of the City's water supply in mind would be justified in relaxing vigilance at that point. Following this suggestion, this Department will have something in the way of disclosures to make that without doubt will create considerable

> discussion when revealed or released to the general public, contemplating as they will the possession of a vastly greater water supply than is now available.[33]

As a temporary measure, the appropriation of funds was urged to make extensive purchases of land and water rights in Owens Valley to bring the supply up to the aqueduct's capacity for 400 cubic feet per second. The complete run-off for the past year had been 355 second feet.[34]

In 1924 local rainfall for the year had dropped to 6.67 inches from 9.59 inches in 1923. Practically no snow fell on the Sierra Nevada and the average flow of water into the aqueduct had declined to 262.5 second feet.[35] According to Mulholland, "…this condition cannot be relieved by any other means than that of renewed precipitation and larger development by the extraction of ground water…"[36] Heavy land purchases to secure access to ground waters had been contested in the courts by the residents of Owens Valley which temporarily perverted the city from pumping water to take out of the valley.

The drought continued. Total rainfall for the year ending June 30, 1925 was only 7.94 inches with a mean rainfall for three successive years of only 8.07 inches, a deficiency of nearly fifty per cent.[37] The mean flow of the Owens River into the aqueduct had reached the record low of 214 second feet. Of this eighty second feet had been supplied by pumping underground waters. The natural flow of the stream had dropped to 134 second feet.[38] Meanwhile the local supply with reserves built up after several years of replenishment through irrigation and

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[33] Los Angeles City, Board of Public Service Commissioners, Twenty-Second Annual Report for the Fiscal Year Ending June 30, 1923 (Los Angeles, 1923), p. 68.
[34] Los Angeles City, Board of Public Service Commissioners, Twenty-Third Annual Report for the Fiscal Year Ending June 30, 1924 (Los Angeles, 1924), p. 8.

[35] Loc. cit.
[36] Loc. cit.
[37] Lynoh, *or. cit*., p. 23.
[38] Los Angeles City, Board of Public Service Commissioners, Twenty-Fourth Annual Report for the Fiscal Year Ending June 30, 1925 (Los Angeles, 1925), p. 7.

spreading, continued to flow at nearly maximum levels. At the end of the three year drought the Los Angeles River was still providing a flow of 74.7 second feet.[39]

[39] *Loc. cit.*

New Source of Supply: Colorado River

Beyond the purchase of all the water bearing land in Owens Valley to provide the maximum exploitation of that water supply, the attention of Los Angeles was again directed toward the development of new sources of supply. There can be little doubt that Mulholland's allusion to "…a vastly greater supply than is now available…" meant the Colorado River.[40] In October, 1923, he recommended to the Department of Public Service that a survey be made to determine the feasibility of importing water from the Colorado River. This recommendation was approved and on October 29, 1923, William Mulholland led the first reconnaissance party of the Colorado River aqueduct survey into the field.[41]

The Colorado River Drainage System. The Colorado River, which forms the southeastern boundary of California for more than 200 miles along its lower channel, opened a great new watershed along the western slope of the Rocky Mountains extending as far north as the source of the Green River in Central Wyoming.

The Colorado River drains a vast area of 244,000 square miles of which 242,000 square miles extend over the seven states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming and 2,000 square miles in northern Mexico. The Salton Sea Basin, an additional area of 7,800 square miles, which had been isolated from the main channels of the river by natural dams or levees, is frequently included as a part of the lower Colorado River Basin.[42]

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[40] Los Angeles City, Board of Public Service Commissioners, Twenty-Second Annual Report for the Fiscal Year Ending June 30, 1923 (Los Angeles, 1923), p. 7.

[41] Metropolitan Water District of Southern California, History and First Annual Report for the Period Ending June 30, 1938 (Los Angeles: Haynes Corporation, 1959), p.52. For further detail of the preliminary development see Chapter VII.

[42] U.S. Bureau of Reclamation, The Colorado River, A Comprehensive Report on the Development of the Water Resources of the Colorado River Basin for Irrigation, Power Production and Other Beneficial Uses in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming (Washington: Government Printing Office, 1946), p. 31.

The Colorado River proper rises among the mountain peaks in the northwestern part of the Rocky Mountain National Park and drains the vast rugged mountainous area west of the Continental Divide in Colorado. The principal tributary of the Colorado, the Green River begins in the glaciers and snow fields of the Wind River, Gros Venture and Wyoming Mountains in western Wyoming and the Wasatch Range in Utah, draining an area of 44,400 square miles.[43] At the junction of the Green and the Colorado rivers it is estimated that the average annual flow contributed by each stream is 5,903,000 acre feet and 7,289,000 acre feet respectively.[44]

Another principal tributary stream, the San Juan River, rises in the San Juan Mountains in southwestern Colorado, flows southwesterly into New Mexico and then turns west and northwest to join the Colorado River in southern Utah. Three other tributaries, the Fremont, Escalante and Paria rivers rise on the western slope of the basin in the Wasatch and Escalante mountains and discharge into the Colorado above Lee's Ferry.[45] The main stream, with these tributaries forms the Upper Basin of the Colorado. At Lee's Ferry, the dividing point between the Upper and Lower Basins, the discharges are estimated at an annual flow of 16,270,000 acre feet.[46]

In the Lower Basin relatively little additional water is contributed by tributaries to the parent steam. Of these tributaries the principal ones are the Little Colorado River, the Virgin River and the Gila River. The Little Colorado River rises among the pine forests of the White Mountains and drains a high plateau and mountainous region extending to the Continental Divide in west-central New Mexico and northeastern Arizona. This tributary is described as "…a

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[43] U.S. Geological Survey, Colorado River and Its Utilization, Water Supply Paper 395 by B.C. LaRue (Washington: Government Printing Office, 1916), p. 37.
[44] Loc. cit.
[45] Loc. cit.
[46] U.S. Bureau of Reclamation, *op. cit.*, p. 55.

flashy stream, seldom clear even during low stages. The discharge fluctuates greatly, being insignificant during dry seasons."[47]

The Virgin River rises in the mountains of southwestern Utah near the town of Beaver to form the last important tributary to enter the Colorado River from the west. From its mountainous sources at about 10,000 feet elevation, the Virgin River flows through "…typical mountain-desert country with its characteristic stretches of sand and sagebrush, its cloudless sky and scorching sun,"[48] across northwestern Arizona to discharge into Lake Mead in the southeastern Nevada. The Virgin River is another flashy stream "…subject to sudden floods, and carries a large amount of sediment in suspension."[49]

Near the mouth of the Colorado River at Yuma, Arizona, the Oila River, its last tributary, discharges into the main stream. The source of the Oila is in western and southwestern New Mexico where it receives its water from mountains 7,000 to 8,000 feet in elevation, supplemented by the discharge of tributary streams from the mountains of southern and central Arizona and from Sonora in Mexico.[50] The Oila River is a very temperamental stream, subject to severe flash floods and extreme variations in discharge ranging from 140,000 to 6,141,000 acre feet of annual run-off.[51]

From Lee's Ferry the main stream of the Colorado River is supplemented by the flows of the Little Colorado and the Virgin Rivers to attain an annual discharge of 17,330,000 acre feet at Hoover Dam. But between Hoover Dam and the entry of the Gila River, the inflow is insufficient to offset evaporation losses in the desert region and the estimated annual flow of the river under natural conditions drops to 16,450,000 acre feet. The addition of Gila discharge of 1,270,000

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[47] U.S. Geological Survey, *op. cit*., p. 94.
[48] U.S. Bureau of Reclamation, op. cit., p. 36.
[49] U.S. Geological Survey, *op. cit*., p. 94.
[50] Ibid., p. 95.
[51] U.S. Bureau of Reclamation, op. cit., p. 284.

acre feet yields an estimated annual virgin discharge of 17,720,000 acre feet of water into Mexico at the international boundary.[52]

The Colorado River Basin is one of the most arid regions of the United States. The annual precipitation for the entire basin averages less than fifteen inches, the lowest for any of the major river basins of America. Most of the water crop comes from the high mountain ranges of Colorado, Wyoming, and Utah where the precipitation, largely in crystaline form, averages forty inches of moisture annually. Nearly ninety per cent of the precipitation returns again to the atmosphere by evaporation or transpiration. The other ten per cent collected over the vast area of its watershed produces the mighty Colorado River.[53]

From the mountains and the mountain valleys, the tributaries and the main stream of the Colorado enter a great plateau province, extending to above the juncture of the Green and the Colorado Rivers. The surface of this plateau generally exceeds 5,000 feet in elevation. The streams have out channels which have formed deep canyons much lower than the surface of the plateau.[54]

From its juncture with the Green, the Colorado River flows into the Cataract Canyon, through Glen Canyon with its many tributary canyons, past Lee's Ferry, through Marble Canyon on through the awesome Grand Canyon, Bridge Canyon, where Hoover Dam now interrupts its flow after a journey of more than a thousand miles through its majestic charms.

Emerging from the canyon country, the Colorado River passes onto the broad desert valleys bordered by mesas, with mountains interrupting the river desert plains on the Arizona side. On the California side the river runs in a channel confined by natural levees above the Colorado desert or Salton Basin. Below, in the center of this basin, is the Salton Sea, 241 feet

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[52] Ibid., p. 55.
[53] Ibid., p. 41.
[54] Ibid., p. 31-34.

below sea level.[55] In this channel the river moves slowly over the plains through its great delta area in Mexico to the Gulf of California.

Except for the high mountain elevations the entire basin is arid, becoming extremely so in the lower reaches of the watershed. As is generally characteristic of sub humid regions, his precipitation and discharge of the Colorado River Basin is subject to extreme variations. The estimated average annual flow of he Colorado River at Lee's Ferry has ranged from a maximum of 25,255,000 acre foot to a minimum of 5,501,000 acre feet with an average annual flow since 1897 of 16,270,000 acre feet.[56] But from 1931 to 1940 the discharge for only two years exceeded the long term average, and the mean flow for the ten-year period was only 12,213,600 acre feet. Some of the tributaries in the lower basin are subject to even more extreme variations than the main stream.

The extreme barrenness of the lower Colorado River basin has been picturesquely descried by LaRue:

> The plains and valleys are low, arid, hot, and naked, and the mountains scattered here and there are lone and desolate. The springs are so few that their names are household words in every Indian rancherim and every settler's home, and there are no streams but the trunk of the Colorado and the trunk of the Gila. On the mountains a few junipers and pinons are found, and cactuses, agava, and yuccas, fleshy plants with bayonet and thorns. There are no forests, no meadows, plants armed with stilettos and bearing gorgeous flowers.[57]

The barren characteristic of the watershed, the erratic behavior of lower tributaries and the great erosion in the river channel produces enormous quantities of silt which enters Lake Mead at the estimated rate of 137,000 acre feet annually.[58] Most of this sediment enters the main stream from the San Juan River and lower tributaries. It is estimated that the San Juan River

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[55] Ibid., p. 38.
[56] Ibid., p. 55.
[57] U. S. Geological Survey, op. cit., p. 14.
[58] U.S. Bureau of Reclamation, op. cit., p. 163.

produces twenty-five per cent and the Little Colorado seventeen per cent of the silt entering Lake Mead. [59]

Taking all of the available factors into consideration the feasibility of importing water from the Colorado River to the cities of the coastal basin of Southern California was soon established. With an adequate storage reservoir in Boulder Canyon it would be possible to conserve the flood waters to be released in a regulated flow to meet consumptive demands. The reservoir would also serve the function of desilting the water. By cheap power generated from the falling waters at the Hoover Dam it would be possible to pump the river water over the mountains onto the coastal plain. On June 28, 1924, the City of Los Angeles filed an application with the State Bureau of Water Rights for an appropriation of a maximum flow of 1,500 cubic feet per second or an average annual flow of 1,100,000 acre feet from the Colorado River in Riverside County between Parker and Blythe.[60]

Preliminary Developments. A tremendous job of human engineering had to be accomplished before the construction of the Colorado River Aqueduct could begin. It was necessary to secure finances to initiate the surveys preliminary to construction. The works on the Colorado River including Hoover Dam had to be authorized by the United States Congress to create the first multiple purpose river to control project inaugurated by the federal government. Adequate water rights had to be perfected through the agencies of both the federal and state governments. A new political institution to permit the coordination of the efforts of the several coastal cities requiring Colorado River water had to be organized to build and administer the aqueduct and its distribution system. A bond issue of $220,000,000 had to be authorized to provide funds for the construction of the aqueduct and its appurtenant works.

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[59] Loc. cit.
[60] Metropolitan Water District of Southern California, op. cit., p. 326.

While the organization of the Metropolitan Water District was being formed and finances were being arranged, surveys and estimates were made of fifty-four different routes for the aqueduct to bring Colorado River water to the coastal plain either by gravity flow or by pumping over the mountains. After thorough consideration the Parker route, located entirely in California, was selected as more economical for the construction and operation of the Colorado River Aqueduct than any other route. Early in 1933 the mammoth construction job was started with the first excavations at Fargo adit and on the Thousand Palms section of the Coachella tunnels. More than six years later the 242 mile aqueduct was completed to the terminal reservoir at Lake Mathews from with the distribution system carried the Colorado River water to the various member cities on the Southern California coastal plan. The first deliveries of Colorado River water for domestic consumption were made to Pasadena on June 17, 1941.[61]

The Colorado River Aqueduct. Colorado River water is diverted from Lake Havasu, a reservoir behind Parker Dam, on the Colorado River near the juncture of the Bill Williams River.[62] At an elevation of 450 feet above sea level the water is pumped from the reservoir and raised 594 feet in two lifts to a tunnel through the Whipple Mountains. From the Whipple Mountains the water flows by gravity through lined canals, conduits and siphon pipe lines to the Iron Mountains where it is lifted 144 feet to flow through the Iron Mountain tunnel. The water continues to move by gravity flow through open canals, siphons and the Coxcomb tunnel to the Eagle Mountain pumping station where it is lifted 438 feet to flow through the Eagle Mountain tunnels and open canal to the Hayfield reservoir, a regulating reservoir with an 87,500 acre foot capacity. From the Hayfield reservoir, the water is lifted 441 feet to flow through the Hayfield

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[61] Metropolitan Water District of Southern California, Report for the Fiscal Year July 1, 1940 to June 30, 1941 (Los Angeles, 1941), pp. 6-7.

[62] For general description of the Colorado River Aqueduct see Metropolitan Water District of Southern California, The Great Aqueduct the Story of the Planning and Building of the Colorado River Aqueduct (Los Angeles, 1941), 68 pp.

tunnels beneath Shavers Summit. These tunnels represent the high point on the Colorado River Aqueduct with an elevation of 1,807 feet above sea level. This net increase in elevation of 13,057 feet above the level of the intake requires a total lift of 1,617 feet.

[Map of Colorado River Aqueduct here]

From Shavers Summit, the Colorado River Aqueduct cuts through the southern flank of the Little San Bernardino Mountains in a series of tunnels known as the Coachella tunnels in the San Jacinto Mountains across the San Jacinto Valley and through the Valverdo tunnel to Lake Mathews the terminal reservoir of the main aqueduct. This reservoir, 242 miles from the intake on the Colorado River has an initial storage capacity of 107,000 acre feet, to regulate the flow to the Colorado River Aqueduct distributing system which extends through most of the South Coastal Basin to supply twenty-eight incorporated cities and several irrigation districts in the South Coastal Basin and the San Diego area with Colorado River water to supplement the local water resources.

Although some of the member cities such as Santa Monica secure substantially all of their domestic water supply from the Colorado River Aqueduct, Los Angeles has relied upon this source for only a small fraction of its total supply.

New Source of Supply: Mono Basin

While cooperating with neighboring cities to import Colorado River water to the coastal plain, the City of Los Angeles proceeded on its own initiative to acquire the water resources of the Mono basin through an extension of the Owens River supply system. The Mono extension, authorized by a bond issue approved at a special municipal election on May 20, 1930, was to insure the future water supply of the city against any possible exigency that might arise from a delay in the construction of the Colorado River Aqueduct.

The Mono Basin Watershed. Mono Basin is an independent inland watershed located immediately north of Owens Valley along the eastern slope of the Sierra Nevadas in a latitude slightly north of San Francisco. A series of volcanic formations, obsidian domes and coulees, separate this basin from Owens Valley. The basin is slightly elongated, saucer-like in a shape measuring forty-seven miles in length and twenty-two miles in width from crest at the most distant points.[63]

In many ways its hydrographic characteristics are similar to Owen Valley. The rugged High Sierra provides the bulk of the water crop from precipitation in the higher elevations of their eastern slopes. At the base of small glaciers high on the most lofty peaks, streams from and flow down the mountain side to discharge into a large land-locked body of saline water, Mono Lake.[64] Mt. Lyell, the highest peak in the watershed area, exceeds 13,000 feet and several of the peaks exceed 12,000 feet in elevation. The surface of Mono Lake near the center of the basin has an elevation of 6,400 feet above sea level. The highest peak among the Mono craters has an altitude of 9,137 feet. To the east, mountains similar to the Inyo Mountains of Owens Valley reach an elevation of 11,127 feet at the summit of Glass Mountain. These mountains continue around the north of the basin to the base of the Sierra.[65]

In contrast to the rather plentiful supply of water on the western slope of the watershed, the eastern area is extremely arid. As Israel C. Russell, the leading authority on Mono Basin, once observed,

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[63] H.A. Van Norman, "The Mono Basin Project. Aqueduct to Supply Los Angeles with Additional Water Now Under Construction," Civil Engineering, VI (May, 1936), p. 306.
[64] Israel C. Russell, "Quaternary History of Mono Valley, California," in U.S. Geological Survey, Eighth Annual Report, 1886-87 (Washington: Government Printing Office, 1889), Part I, p. 321.
[65] Ibid., p. 270.

> The eastern and western portions of this single hydrographic basin are fragments of two distinct geographic provinces. One has the desolation and solitude of the Sahara, the other the rugged grandeur of the Pyrenees.[66]

The important streams, in decreasing order of magnitude are Rush Creek, Leevining Creek, Mill Creek, and Gibba Canyon Creek. From their glacial sources each of these creeks descends narrow valleys formed by glaciations in channels worn in granite and metamorphosed sediments. Rush creek, the principal stream in the Mono Basin is formed on the eastern slope of Mt. Lyell. The south fork of the Tuolumne River, with its source on the western slope of this same peak, provides water for the city of San Francisco.[67] Lakes, in depressions eroded by glacial action, occur along the course of each of the creeks.[68]

In addition to the surface run-off, there are a number of springs located near the shores of the lake or in the bottom of the lake. After the streams have been fully diverted it is estimated that the flow of these springs will be sufficient to maintain Mono Lake at about one-third of its previous area.[69]

These four streams in the Mono Basin have a total average annual flow since 1906 of about 225 cubic feet per second of which 195 second feet could be diverted. The minimum average annual flow for the dry cycle of 1923-33 was only 150 second feet of which 140 second feet could have been diverted. This represents what is considered to be the minimum safe yield of the Mono Basin.[70]

Hydrographic Puzzle. While accurate hydrographic measurements of the Mono Basin have been made only since 1906, earlier known variations in the level of the lake form the basis

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[66] Loc. cit.
[67] "Developing A New Water Supply For Los Angeles," Engineering News-Record CXVIII (February, 1937), p. 286.
[68] Russell, op. cit., p. 324.
[69] Van Norman, op. cit., p. 307.
[70] Ibid., pp. 306-07.

of interesting speculation about the long range climatic behavior of the West. In 1865, the California state geologist reporting on the first surveys of the Mono Basin noted the existence of terraces which indicated the ancient shores of a much larger body of water. The highest "well defined" terrace was 630 feet above the level of the lake while another "very distinct" terrace was noted at 385 feet above the water.[71] This great body of water is explained by Russell as the result of climatic oscillations in which the mean annual temperature was increased a few degrees causing the vast glaciers on the Sierra Nevada to melt, greatly expanding the area of the lake.[72]

However, since it was first measured in 1860, the level of Mono Lake rose fifty feet by 1920.[73] By 1887 Russell reported that,

> …on the north side of the smaller of the two main islands in the center of the lake a cabin was built in 1861, which is now wholly submerged. This would indicate a recent rise of twenty or twenty-five feet in the lake surface had taken place or else the island had undergone subsidence to that extent. This conclusion is also sustained by the occurrence of dead stumps of trees and sage brush in the margin of the water two to three hundred feet from the land.[74]

The submergence of sage brush and dead trees would indicate that the rise in the lake level took place after this vegetation had taken root and matured on arid soil. This phenomenon had led to the conclusion "… that Mono Lake area experienced a drier cycle of more than a hundred years prior to 1860 than anything since that date."[75] The possibilities of long-term oscillations in the annual mean temperature affecting the flow of water from the High Sierra snow fields and century long cyclical variations in precipitation present unfathomed mysteries to hydrographers who seek to predict the adequacy of a future water supply for a new region with such "inadequate records of basic weather data."

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[71] California, State Geologist, Geological Survey of California, Geology I, Report of Progress and Synopsis of the Fieldwork from 1860-1865 (Philadelphia: Carton Press, 1865), p. 451.
[72] Russell, op. cit., p. 390.
[73] Samuel B. Morris, "The Water Problem," Proceedings of the Institute of Economics and Finance, Fifth Conference (Los Angeles: Occidental College, 1948), p. 80.
[74] Russell, op. cit., p. 298.
[75] Morris, op. cit., p. 85.

The Mono Extension. The Mono diversion system begins with a canal heading in Leevining Creek, intercepting two tributaries or Rush Creek and emptying into Grant Lake Reservoir. This reservoir formed by increasing the capacity of Grant Lake to 48,000 acre feet with a seventy-two foot dam at the lake outlet, will serve to store and regulate the flow of the diversion canal and the main stream of Rush Creek. From Grant Lake the water passes through a 5,450 foot tunnel, three miles of covered conduit and through the Mono Craters in an eleven mile tunnel discharging into head waters of the Owens River.[76]

The combined flow of the Mono diversion and the upper Owens River are stored and regulated by a reservoir in Long Valley, known as Lake Crowley, formed by a dam at the head of the Owens River Gorge. This reservoir with a capacity of 183,000 acre feet will equate the seasonal variations in stream run-off to provide for the maximum utilization of the water for future power developments as well as to equate variations in annual flow to provide a more stable water supply. With the Mono extension, the Los Angeles Aqueduct works extend a distance of 350 miles.

Present and Future Water Supply

With a population of slightly more than two million persons, the City of Los Angeles is consuming water at the rate of nearly 550 cubic feet per second to meet all of its various needs. To satisfy this demand, Los Angeles is utilizing each of its water sources in varying degrees. Tables I and II show the quantities of water supplied from the various sources and the quantities consumed.[77]

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[76] Van Norman, op. cit., pp. 307-08.
[77] Supra, p. 48. Information supplied from the records of the Hydrographic Division of the Los Angeles Department of Water and Power.

TABLE I

LOS ANGELES WATER SUPPLY 1920-1948

Annual Mean Flow in Cubic Second Feet

Date	L.A. Basin **(a)**	Total Local **(b)**	Mono Basin **(c)**	Gwens Wells **(d)**	Total Owens-Mode **(e)**	M.W.D. **(f)**
1920	55.82	68		19.2	283.3	
1921	63.72	78		19	262.3	
1922	73.72	86		14.4	346.2	
1923	74.32	93		16.1	269.3	
1924	78.55	98		26.4	198.8	
1925	97.1	122		46.2	269.9	
1926	87.28	107		43.2	250.6	
1927	73.2	93		13.3	367.3	
1928	84.78	101		52.3	296.9	
1929	94.76	116		73.2	268.3	
1930	73.69	97		171.3	347	
1931	83.05	102		197.3	342.4	
1932	52.88	65		4	346.7	
1933	53.99	66		8.5	341	
1934	90.81	102		56.1	326	
1935	69.98	80		9.1	357	
1936	78.49	80	3.6	7.1	306	
1937	69.85	72		12.1	376	
1938	66.05	67	8.6	23.3	398	
1939	63.91	64	9.5	25.6	360	
1940	71.2	71	26.8	13.8	341	
1941	60.46	61	70.8	10.5	353	0.46
1942	63.32	64	33	15.7	442	0.71
1943	77.28	79	36.8	14.3	409	0.06
1944	82.58	85	92.8	14.7	398	0.48
1945	111.4	118	25.6	15.5	401	2.25
1946	105.14	112	19	16.3	458	9.75
1947	114.5	123	61.2	15.4	457	13
1948		119	138.5	12.1	440	24.2

(a) Total water supply from Los Angeles River basin above the Narrows.
(b) Including wells on the coastal plain.
(c) Mono Basin supply measured at the east portal of Mono tunnels.
(d) Owens Valley well production including normal artesian flow.
(e) As measured at Cartago station near intake of Haiwee reservoir.
(f) Colorado River water supplied by Metropolitan Water District to meet special demands.

TABLE II

LOS ANGELES WATER CONSUMPTION 1920-1948

Annual Mean Flow in Cubic Second Feet

Date	**Domestic (a)**	**Irrigation**	**Total**
1920	126	106	232
1921	139	104	243
1922	152	100	252
1923	169	118	287
1924	189	78	267
1925	203	77	280
1926	214	89	303
1927	217	78	295
1928	231	106	337
1929	255	123	378
1930	249	108	356
1931	243	105	348
1932	234	85	320
1933	227	87	314
1934	220	88	308
1935	225	87	310
1936	249	110	359
1937	260	96	356
1938	265	82	347
1939	269	81	350
1940	272	75	347
1941	272	63	334
1942	293	95	388
1943	326	98	424
1944	352	88	440
1945	381	101	482
1946	398	97	495
1947	423	104	527
1948	434	108	542

(a) Including commercial and industrial use.

Except for the Colorado River supply, each of the other sources of supply is presently being utilized at nearly the maximum production for a long-term safe yield. The water supply from the Owens-Mono system is limited bye the net capacity of the aqueduct to approximately 440 cubic feet per second.[78] Supplementing the surface run-off by pumping wells during dry years, the Owens-Mono area can maintain the aqueduct at capacity flow indefinitely. Some 110 wells in Owens Valley are capable of producing rate at the rate of 300 cubic feet per second.[79]

The present estimated average safe yield of the Los Angeles River and San Fernando Valley wells of eighty cubic feet per second[80] might be increased by another forty cubic feet per second by eliminating all other diversions by other municipalities such as Glendale, Burbank and San Fernando and irrigators using private wells. But this displacement would have to be met by these users from some other source.

On the coastal plain six different well fields are capable of yielding an average safe yield of fifty second feet. Since the quality of the water is relatively poor, these wells are kept on a standby basis to meet emergency requirement rather than to produce a stable water crop.[81]

Altogether these sources of supply are approximately sufficient to meet the present requirements of the City of Los Angeles. Future developments depend upon water from the Colorado River to satisfy any expansion in the demand for water. On the basis of the original Metropolitan Water District claim to 1,500 cubic feet per second of Colorado River water,[82] Los Angeles is entitled to more than 750 cubic feet per second, assuming that Los Angeles will

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[78] The operating capacity of the Los Angeles Aqueduct is 475 to 480 cubic feet per second but an allowance for non-operation for repair and maintenance of disrupted service reduces the net capacity to a flow of approximately 440 cubic feet per second.

[79] Ford, Bacon & Davis, Report. Department of Water and Power, City of Los Angeles, California. Water System (New York: Ford, Bacon & Davis, 1948), Vol. III, p. 22.

[80] Ibid., p. 19.

[81] Ibid., p. 21.

[82] With the admission of San Diego to the Metropolitan Water District of Southern California, the water rights of the district were increased by 112,000 acre feet annually. However, the capacity of the aqueduct will probably prevent the delivery of more than 1,500 cubic feet of water per second.

represent at least half of the assessed valuation of the Metropolitan Water District. This would be adequate to support a population of at least five million people in the City of Los Angeles, with other present supplies.

However, the controversy over rights to Colorado River water between Arizona and California has cast doubt upon the future water supply available to the municipalities on the Southern California coastal plain.[83]

Arizona's proposal for the diversion of 1,200,000 acre feet of Colorado River water for the irrigation of lands as a part of the Central Arizona Project has led to the following conclusion:

> Now the actual shortage of water on the Lower Colorado River results in substantially this: If California's contention and interpretation of the Colorado River Compact and its related documents are correct, Arizona will receive no water for the Central Arizona Project; if Arizona's contentions are sustained, California will have substantially no water for the Colorado River aqueduct of the metropolitan water district.[84]

Both the conversion of ocean water and the transportation of Columbia River water have been proposed as means to alleviate the future water needs of Southern California. Neither proposal is demonstrable as a practical alternative to serve as the basis for consideration by responsible public officials who must maintain an adequate water supply to meet the needs of a community in an arid region.

When existing water supplies, with their related water works, involving substantial capital investment, have been fully utilized, a final additional supply of water can be secured by the reclamation of sewage effluent. Sewage reclamation is feasible both from a technical and economic point of view although many problems of public policy, water rights, and cultural

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[83] For a consideration of the Arizona-California controversy, Infra., p.
[84] Samuel B. Morris, "Southern California's Future in the Colorado River," in U.S. Congressional Record. 80th Cong., 2nd. Sess., XCIV: A2510.

adjustment are involved.[85] More than half of the water delivered through the water distributing system is discharged through the sewer system in an urban community. Sewage reclamation would thus expand existing water supplies by approximately fifty per cent.

Without Colorado River water the reclamation of sewage might meet the needs of Los Angeles and its surrounding communities for a few years, but the rapid growth of Southern California would soon exhaust this supply. With the full utilization of its claims to the Colorado River and subsequent reclamation of sewage effluent, Los Angeles and its metropolitan area should have an adequate water supply to meets its requirements for decades to come.

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[85] For a consideration of the problem of sewage reclamation in Southern California see R.P. Goudy, "Sewage Reclamation For West Basin District," Appendix IV in Harold Conkling, Report to West Basin Association On Imported Water Supply for West Basin, Los Angeles County, California, 1946, pp. 23-30. Samuel A. Greeley, Charles G. Hyde, Franklin Thomas, A Report Upon A Program of Sewerage and Sewage Treatment and Disposal for the City of Los Angeles, California and Certain of Its Environs, 1939, 53 pp. A.M. Rawn, Charles G. Hyde and Franklin Thomas, Orange County Sewerage Survey 1946-47. Report Upon the Collection, Treatment and Disposal of Sewage and Industrial Wastes of Orange County, California (Ann Arbor, Michigan: Edwards Brothers, Inc., 1947), 470 pp.

> An adequate and pure water supply is everywhere a problem. Even in Eastern communities where rainfall is abundant it presents enormous difficulties. In the West where the desert encroaches, where many regions always must languish in the thirst, situations are more dramatic. In the West the desert is the common enemy. A united front must consider the common advantage, must act with a broad intelligence, must fight as does a disciplined army, if those victories over the desert which are possible are to be won.
>
> Ray Lyman Wilbur, 1930

CHAPTER II

THE EVOLUTION OF THE POLICY OF COMMUNITY CONTROL OF WATER RESOURCES

The Spanish Tradition

In no other phase of modern life has the impact of the Spanish origin of Los Angeles been so great as in the establishment of the general policy of community control of water resources. From the Spanish pueblo rights Los Angeles derived prior claim to the waters of the Los Angeles River to secure a vital advantage in forging ahead to pre-eminence in Southern California. In part the Spanish tradition of communal enterprise provided the foundation of the later institutional pattern for the administration of water resources.

Los Angeles, founded in 1781 as El Pueblo de Nuestra Senora la Reina de Los Angeles, was the second civil pueblo to be organized in the Spanish domain that now constitutes the state of California. It was founded under provision of a decree, providing elaborate regulations for the government and colonization of the province of California, issued by Don Felipe de Neve, Governor of California, June 1, 1779. King Carlos III of Spain by royal order gave his approval to the regulation on October 24, 1781.[86]

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[86] Felipe de Neve, "Reglamento Para el Govierno de la Provincia de Californias, Aprobado por S.N. en Real Orden da 24 Octubre de 1781", in "Documents Pertaining to the Founding of Los Angeles," Annual Publication, Southern California Historical Society, XV (1931), p. 188.

The Pueblo System. Each pueblo was reserved four square leagues of the royal domain. According to regulations the pueblo lands were surveyed from the central point at the location of the settlement measuring one league "to each of the four winds" to reach the pueblo boundaries which were in the form of a square. The area immediately about the center point of settlement was set aside as a square or plaza, permanently dedicated to the common use. Streets were laid around the plaza in a gridiron pattern. The lands about the plaza were divided into the houselots (golarea) with the reservation of certain parcels for municipal purposes. The surrounding agricultural lands were divided into parcels (guertes), and each poblader was allocated two parcels of irrigable and two parcels of non-irrigable land to farm.[87]

Many types of property were dedicated to the common use of the pobladores. Among them were woodlands (montes), tracts of lands for enclosing draft animals (dehesas), pastures (pastos), fields (prados), salt springs (Salinas), common land surrounding the town left open for threshing grain, recreation or other common uses (ejidos), springs of water appropriated for town supply (Fuentes), places for watering cattle (abreveduras), waters (aguas), and other common properties not devoted to special use (valdios). All inhabitants, "… under regulations designed to secure the utility of the lands and secure equality could use all of these lands."[88]

Some lands were dedicated to the use of the church and other lands, known as proprios, were held for development by pueblo authorities as a source of revenue. Rentals from commercial enterprises such as stores and shops or cultivation by the pobladores under direction of the pueblo authorities provided by the revenue. Proprios could be sold or converted into solares or suertes.[89]

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[87] John W. Dwinelle, The Colonial History of the City of San Francisco (reprint; San Diego: Frye & Smith, 1924), Addenda No. IV, p. 5.
[88] Vernon Irrigation Company v. City of Los Angeles, 106 Cal. 237, 247.
[89] Loc. cit.

Even the individual holdings of the pobladores (solares y suertes de tierras) were subject to substantial reservations. The land and improvements were granted in perpetuity to the new poblador and his heirs "… provided the whole of them comply with the obligation to be expressed in these instructions."[90] Neither the poblador nor his heirs could "…impose on the house or parcel of land granted them, either tax, entail, reversion, mortgage or any other burden even if it be for pious purposes."[91] If a poblador should violate the regulations "… his grant shall ipso facto be given to another colonist who may be useful and obedient.[92]

In effect title was granted to the use of the land rather than to the body of the land. The pueblo land remained a part of the royal domain.

> No grants of land were ever made to them, but as soon as organized they became entitled to have certain lands set apart to them for the use of the pueblo and its inhabitants.[93]

Unquestionably the problem of water supply was a powerful force in molding the character of the pueblo system. In an area where irrigation is necessary, advances into the undeveloped frontier must be a function of an organized community of men rather than the individual pioneer. This phenomenon can also be noted in the later period of American colonization of the arid west.

> The condition which confronted the settler in the deserts of Utah was widely different. There he could not build his home and make his living regardless of his neighbor. Without water to irrigate the rich but arid soil he could not raise a spear of grass or an ear of corn. Water for irrigation could only be obtained by turning the course of a stream and building canals which must sometimes be cut into the solid walls of the canyon or conducted across chasms in flumes. All this lay beyond the reach of the individual. Thus it was found that the association and organization of men were the price of life and prosperity in the arid west. The alternative was starvation. The plant which grew from this new seed was associative enterprise.[94]

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[90] Dwinelle, op. cit., Addenda No. IV, p. 5.
[91] Loc. cit.
[92] Loc. cit.
[93] Vernon Irrigation Company v. City of Los Angeles, 106 Cal. 237, 245.
[94] William E. Smythe, The Conquest of Arid America (New York: Harper & Bros., 1900), p. 31.

However important, the problem of water was in molding the pueblo system of colonization, the character of water rights and the methods of administering the system of water distribution must be considered as only one phase of the general property system and communal life of the pueblos of California. Although analogies to American experience may be drawn, no other system duplicates the pueblo as a colonial institution.

Water Administration in the Pueblo. From the various instructions and regulations governing the pueblos of California, elaborate rules were established for the government of the water distribution system, beyond the provisions declaring water to be subject to the common use of the pobladores.

According to the Neve regulations, the pobladores were exempt from paying tithes or any other tax for five years,

> … provided that within a year from the day on which the house-lots and parcels of land be designated to them, they build a house in the best way they can, and live therein, upon the necessary trenches for watering their lands, placing at their boundaries, instead of land marks, some fruit trees, or wild ones of some utility, at the rate of ten for each suerte; and likewise open the principal drain or trench, form a dam, and other necessary public works for the benefit of cultivation, which the community is bound particularly to attend to….”[95]

After the expiration of a five year tax exemption the regulations provide that,

> … the new pobladores and their descendants will pay, in acknowledgement of their direct and supreme dominion which cologne to the sovereign, one-half of a fanega of Indian corn for each irrigable suerte of land, and for their own benefit they shall be collectively under the direct obligation of attending to the repair of the principal trench, dam, auxiliary drains, and other public works of their pueblos.[96]

Neve’s regulations conclude with provision for a pueblo government appointed by the governor for the first two years and thereafter elected by the local citizens of the pueblo. Among

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[95] Dwinelle, op. cit., Addenda No. IV, p. 6.
[96] Loc. cit.

other functions this local agency of the government was responsible for the construction and maintenance of public works and the distribution of water privileges.[97]

In the founding of Los Angeles, the first two projects undertaken by the pobladores were the construction of the main irrigation ditch or the Zanja Madre (mother ditch) to divert the waters of the Los Angeles River (Rio Porciunoula) and the construction of corrals for the cattle and horses. Building permanent family dwellings came next. Only after the accomplishment of these tasks were the livestock distributed among the individual families and the land cultivated in preparation for the sowing of grain.[98]

The original plaza was located on the first terrace on the edge of the western flood plain of the river below the Narrows. Water was diverted from the river by a dam or wire of willow poles into the Zanja Madre to provide for both the domestic needs of the people and the cultivation of the land.

When it came time to give the pobladores of Los Angeles possession, in the name of the king of Spain, to the tracts of land and town lots that had been assigned them, the governor of California was careful to give the following instruction to his agent,

> Care must be taken to make it clear that the citizens understand what pertains to the royal government and what is held in common, such as crops, water, pastures and wood, which must be stated in each warrant or act of possession, which they accept under the conditions and penalties provided in the … Instructions, as well as the privileges, exceptions, and favors with which the sovereign gives them this grant.[99]

In his affidavit of performance the governor's agent, Don Jose Arguello, stated:

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[97] Neve, op. cit., p. 185. In 1789 another set of regulations known as the Flan of Pitie was used as a basis for the founding and governing of new pueblos established in Commandancia of the four interior provinces of the west including California. Whild the Flan of Pitie provided for more detailed regulations of the administration of the pueblo water system, it adhered to the same principles established in the Neve Regulations.

[98] Thomas Workman Temple II, "Se Funderon Un Pueblo de Bepanoles," Annual Publication. Southern California Historical Society, XV (1931), 83.

[99] "Documents Pertaining to the Founding of Los Angeles" Annual Publication. Historical Society of Southern California, XV (1931), 150.

> I caused them to be informed … that they were to enjoy the right to maintain their cattle from the community supply of water and pasture, wood and timber, … to all of which they replied that they understood and agreed.[100]

The administration of the water supply system in Los Angeles during the Spanish and Mexican periods adhered to the established regulations. The Ayuntamiento, the general governing authority of the pueblo, maintained a standing committee on zanjas which had general charge of supervision and maintenance of the zanjas. Assisted by the secretary of the Ayuntamiento, the regidores of the committee on zanjas established the schedule for irrigation and generally supervised the operation of the zanjas subject to the approval of the Ayuntamiento and the elcaldes. The position of zanjero was not created permanently until 1854.

Among the early Spanish-Mexican documents in the Los Angeles city archives is a report to the Ayuntamiento by the committee on zanjas which reveals the informal pattern of water administration in the pueblo. After reporting on the needs for repair the committee recommends that "… all the owners of crops and orchards be compelled to contribute, with their own person or an Indian to perform said improvements until accomplished."[101]

To supervise the repair operations the committee recommended that "… all of the owners of crops and orchards be invited to appoint a zanjero who must be paid from the products of their soil."[102] This zanjero was to accompany one of the three regidores composing the committee on zanjeras, each acting in weekly turn, to supervise the repair works and "… give an account to Sras. Alcaldes of those that have not contributed in order that they may fine them according to the wishes of the most Illustrious Body."[103] This report was approved by "the Illustrious Ayuntamiento" on March 23, 1836.

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[100] Ibid., p. 154.
[101] Los Angeles, City Archives I: 102
[102] Loc. cit.
[103] Loc. cit.

Throughout the Spanish-Mexican period the zanjas continued to be the principal source of supply for domestic purposes. Apart from the zanja supply, water used exclusively for domestic purposes was distributed at first by Indian women who carried pottery jugs on their heads peddling water from door to door. Later a horse drawn cart mounted with a barrel was used to perform this service. The horse and cart mode of distribution continued to be the only source of domestic supply, other than zanjas or the river, for the first decade of American occupation. The carrier charged fifty cents a week for on bucket each day except Sundays.[104]

Litigation. During the pre-American period the prior rights of the pueblo to the use of the waters of the Los Angeles River were challenged by the Mission of San Fernando. This settlement was founded in the northern portion of San Fernando Valley in 1797, the year of a serious drought. The discovery of a small stream of water coming from a spring in the northern slope of the valley determined the site of the mission. The water was impounded and spread upon the land to irrigate crops for the use of the mission.[105]

With the rise of the Los Angeles River during the following rainy season the padres of the mission decided to increase their water supply for irrigation by constructing a dam at Chauenga to divert the waters of the river from its channel. The authorities of the pueblo protested immediately, demanding the removal of the dam. When protests failed the pueblo brought legal action to stop the mission from diverting the water, asserting great damage and suffering to the town. The action was contested by the mission claiming its equal right to the use of the water in the royal domain.

The case was finally resolved by an agreement between the contestants after a decade of controversy. The mission was granted permission to use enough water to irrigate land and to

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[104] Harris Newmark, Sixty Years in Southern California, 1853-1913 (New York: The Knickerbocker Press, 1926), p. 116.
[105] Doyle Workman, The City That Grew (Los Angeles: The Southland Publishing Company, 1936), p. 72.

provide for its immediate needs on condition that the mission would accede to the needs of the pueblo should the water supply be inadequate to meet both requirements.[106] Under Mexican rule the mission again renewed the controversy in 1833. The litigation which followed was determined favorably to the pueblo only two years before the missions were secularized by the Mexican government.[107]

At the close of the era of Spanish and Mexican development, Los Angeles, a thriving town with a population of more than 1,500 persons, had maintained prior claim to the rights of the waters of the Los Angeles River and had developed an extensive water distribution system under public control and administration supplying the irrigation and domestic needs of the predominantly agricultural community. Only the distribution of water for domestic use was developed as a private enterprise. It was a luxury available if one cared to pay the price. The flow of the river and the Zanja Madre were available for those who did not patronize the water carrier.

The Evolution of the Pueblo Rights

The Problem. With the coming of American control, difficult problems in the formulation of basic policies relating to the community control of water resources were confronted. The American legal system was not adapted to the needs of an arid climate and had no counterpart for the communal pattern of the pueblo. A new era of development in Southern California, on of the fastest growing regions of the United States, created an inevitable competition over the rights to the water of the Los Angeles River.

The pueblo's right to the common use of water was difficult to translate into a prior claim to the full flow of a watershed under American jurisprudence. Contrary to the frequent literary assertion, the king of Spain made no special grant of the prior and exclusive right or ownership

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[106] J.M. Guinn, A History of California and An Extended History of Los Angeles and Environs (Los Angeles: Historic Record Company, 1915), I: 395.
[107] Loc. cit.

of the water of the Los Angeles River.[108] These rights are based on the general regulations for the colonialism and government of new pueblos and the practices inherent in the Spanish institutional usages. Even these regulations did not seem to grant prior and exclusive rights. For example, the Flan of Fitic, which came most nearly to the point provided:

> The residents and natives shall enjoy equally the woods, pastures, water privileges, and other advantages of the royal and vacant lands that may be outside of the land assigned to the new settlement, in common with the residents and natives of the adjoining and neighboring pueblos, which bounty and privilege shall continue as long as they are not changed or altered by His Majesty, in which case they shall conform to that which has been provided in the Royal orders that may be issued in favor of the new possessors or owners.[109]

Sharing in common the privileges and use of water on the public domain was quite a different matter than securing a prior and exclusive right. In the transfer of sovereign rights and title to the public lands of California from Mexico to the United States it would seem quite reasonable that the exercise of the rights and privileges on the public domain would come within the scope of federal law. In this manner the water rights enjoyed by the Mexican public domain might have been subject to the regular body of water law in California and not granted any special status. On the other hand, with a complex of detailed political control of colonial development; a property system that did not recognize private property, in the American sense of the term; and broad grants of rights and privilege to common use of property on the royal domain subject only to special grants; the rights and privileges of a pueblo to the use of water and other resources of the royal domain were unquestionably very great. It is evident that no right can have the same meaning under another system of law.

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[108] Samuel C. Wiel, Water Rights in the Western States (rev. ed., San Francisco: Bancroft-Shitney Company, 1911), I: 68. This authority on western water law states that he "… knows of no California water-right traced back to any special private grant of concession of water from the Mexican government."
[109] Dwinelle, op. cit., Addenda No. VII, p. 12.

Both the federal and state government attempted to protect the vested rights that had been acquired prior to the acquisition of California. The United States Congress established a special commission to ascertain and pass upon private land claims in California, but no provision was made for other property claims.[110] A special act passed by the California legislature seeking to protect the established rights of the City of Los Angeles provided that the city,

> … shall succeed to all the rights, claims and powers of the Pueblo de Los Angeles in regard to and shall be subject to all the liabilities and obligations created by the Ayuntamiento of said Pueblo.[111]

Adverse Litigation. It was not until 1873 that the City of Los Angeles asserted a legal claim to the pueblo rights of the Los Angeles River water. In an action against Leon Mac L. Baldwin, the City of Los Angeles sought to secure an injunction to prevent the diversion of Los Angeles River water for irrigation on the Felis rancho. This was taken on the basis of its claim as the owner entitled to the full, free and exclusive use of the waters of the river. Baldwin denied the ownership and exclusive right of the city to the waters of the river and asserted his own right to reasonable use on lands riparian to the river. He further alleged that he and his grantors had used the waters continuously since 1853 to the extent of two irrigation heads. The court held in favor of the defendant finding that there was a surplus of water in the river and that the defendant was entitled to reasonable use as an upper riparian owner. The city did not appeal this judgment.[112]

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[110] 9 U.S. Stat. at L. (1854), 631. "An Act to Ascertain and Settle the Private Land Claims in the State of California".
[111] William McPherson, Charter and Revised Ordinance of the City of Los Angeles (Los Angeles: Los Angeles Star Print, 1873), p. 7.
[112] Edward C. Boggs, "A Study of Water Rights on the Los Angeles River, California," in U.S. Department of Agriculture, Report of Irrigation Investigations in California by Elwood Mead (Washington: Government Printing Office, 1901), p. 336.

Some time later the city again brought action against Baldwin under much the same circumstances. After an adverse judgment in the trial court the city appealed. The Supreme Court of California held against the city finding that,

> 1) The claim set up by the city in this action—that the city is the owner of the corpus of water in the Los Angeles River—finds no support in the evidence.
> 2) Nor does the fact that the city is a lower riparian proprietor entitle her to judgment in her favor. The defendants are upper riparian proprietors on the same stream. In the former action between these parties it was adjudged that diversion of the water by the defendants to the extent and in the manner in which they then diverted it was such as, being riparian proprietors, they might lawfully make. The conditions do not appear to be different now from what they then were. The diversion by the defendants is the same now as then, and while these conditions continue unchanged the judgment rendered in the former action operates as a bar between the parties here.[113]

In 1884 the city regained control of the two irrigation heads of water and other privileges possessed by the Baldwin interests by purchase for $50,000.[114]

Legislative Definition. In the meantime the city had secured section in the legislature to define its pueblo rights to the Los Angeles River in more explicit terms. In an act, amending and re-enacting the charter of the City of Los Angeles, the legislature gave a most sweeping statement of the pueblo rights of the city in a definition of the corporate powers of the city,

> That there be and hereby is granted to said corporation, to be by it held, and enjoyed in absolute ownership, the full free, and exclusive right to all of the water flowing in the River of Los Angeles at any point from its source or sources to the intersection of said river with the southern boundary of said city.[115]

In addition the charter provision gave the city the authority to develop and utilize all waters flowing beneath the bed of the portions of the river that were vested in the absolute ownership of the city. The city was granted general powers to condemn property beyond its corporate boundaries to increase its water supply for public use. The city was prohibited from

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[113] City of Los Angeles v. Leon Mac L. Baldwin, 53 Cal. 469 (1879).
[114] Guinn, op. cit., p. 397.
[115] California, Legislature, Statutes of California Passed at the Twentieth Session of the Legislature, 1873-74. (Sacramento: G.H. Springer State Printer, 1874), p. 633.

disposing of, conveying or transferring any portion of the waters or the right to develop or use the water that would be "… in any way prejudicial to the use thereof for irrigation within the limits of said city…."[116] The zanjas within the city were declared to be public zanjas and entitled by right to the quantity of water that hitherto flowed in them. The "farmers and fruit growers," who benefited by their use, were vested with the right to this continued flow in each of the zanjas.[117]

Acceptance by California Courts. The flow of the Los Angeles River was so reduced early in 1879 that an insufficient quantity flowed past the various diversion ditches of upper riparian users to meet the needs of the city. City officials closed these ditches to increase the municipal water supply. Anastacio Felis, one of the parties affected by the closing of the ditches, sued to enjoin the city from interfering with the operation of his ditches used to irrigate lands riparian to the river. The lower court granted the injunction holding that the owners of riparian lands were entitled to divert a reasonable amount of water for irrigation and domestic purposes. The case was appealed to the Supreme Court of California which reversed the judgment of the lower court and held for the city on the basis of its pueblo rights declaring:

> From the very foundation of the pueblo, in 1781, the right to all the waters of the river was claimed by the pueblo, and that right was recognized by all the owners of land on the streams, from its source, and, under a recognition and acknowledgement of such right, plaintiffs' grantors dug their ditches, and, by the permission and consent of the municipal authorities, plaintiffs thereafter used the waters of the river. Can they now assert a claim adverse to that of the city? We think not. The city under various acts of the legislature has succeeded to all the rights of the former Pueblo.[118]

The pueblo water rights were recognized as an integral part of the water law of the state in the famous case of Lux v. Maggin in which the California Supreme Court elucidates the whole body of water law in the state of California. Pueblo rights were defined as,

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[116] Ibid., p. 634.
[117] Loc. cit.
[118] Anastacio Felis v. City of Los Angeles, 58 Cal. 73, 79 (1881).

> … a species of property in the flowing water within their (the pueblo's) limits, or 'a certain right or title' in their use… subject to the public trust of continuously distributing the use in just proportions.[119]

The question of whether the pueblo right extended to the subterranean flow of the river was raised in a suit to condemn 315 acres of land for the construction of infiltration galleries for a headworks system to extract ground water near the river channel immediately above the narrows. If the priority of the pueblo right was maintained over the riparian right of the owner of overlying lands, the payment of only a nominal award for the value of the land without water rights would be required.

The California Supreme Court in City of Los Angeles v. A.E. Pemeroy upheld the application of the pueblo right to the subterranean flow of the Los Angeles River and refuted claims of the defendants, as owners of overlying land to the corpus of the water by noting the consequence of their doctrine:

> Once conceded that the defendants may draw off the subsurface flow, or any part of it, the same privilege must be conceded to others, and the man or the corporation that can put in the largest tunnel at the lowest level will get the lion's share, while the inhabitants of Los Angeles will get none. The doctrine, therefore, while ruinous to those who have built it up in a populous and prosperous city upon the faith that they were secure of a supply of water for domestic and municipal purposes, would afford no security to the defendants or to any one in their situation, for what they could take from the city others could take from them.[120]

With the recognition given pueblo rights in these cases the priority of this right in relation to riparian rights was firmly established. The subsequent cases serve to further delineate and expand the concept.[121]

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[119] 106 Cal. 255, 329 (1886).
[120] 124 Cal. 597, 636 (1899).
[121] Infra., pp. 289-95 for restrictions placed upon the utilization of water acquired by pueblo rights.

Confirmation in the Federal Courts. The defendant in a companion suit appealed this decision to the United States Supreme Court to provide the first test of the validity of the pueblo right in a federal court. In dismissing the suit for want of a federal question the court held that,

> … the decision of the state courts on the claims asserted by plaintiffs in error to the waters of the river was not against any title or right claimed under the constitution, or any treaty, or statute of, or commission, held, or authority exorcised, under the Constitution. If the title of plaintiffs in error were protected by the Treaty, still the suit did not arise thereunder, because the controversy in the state court did not involve the construction of the Treaty, but the validity of the title of Mexican and Spanish grants prior to the Treaty. The construction of a law of a State, that it was competent for the court to try and determine… is conclusive on this court….[122]

In every case challenging the pueblo right as a violation of rights claimed by others by previous Mexican grants, the Treaty of Guadalupe Hidalgo, and that Act of March 3, 1851 to ascertain and settle the private land claims in the state of California, the United States Supreme Court reiterated that these acts,

> … did not originate Federal rights or titles but merely confirmed the old ones, we cannot review the judgment of the state court in this respect.[123]

> … the question as to the nature and extent of complainants, title or rights, as put forward in the bill, are not a Federal question, but questions of state or general law.[124]

Further Expansion of the Concept. During the severe drought from 1900 to 1905, the City of Los Angeles instituted proceedings against more than two hundred ranchers cultivating 5,000 acres of land near the City of Burbank irrigated by water pumped from the underground supply of San Fernando Valley, to quiet title to the water rights and to enjoin the ranchers from making diversions when the water was needed by the city to meet its requirements. After an extensive description of the geological structure of San Fernando Valley, the court held that the prior claim

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[122] Hooker v. Los Angeles, 186 U.S. 314, 317-18 (1902).
[123] Los Angeles Farming and Milling Co. v. Los Angeles, 217 U.S. 217, 233 (1907).
[124] Devine v. Los Angeles, 202 U.S. 313, 237 (1905).

of the City of Los Angeles to the pueblo rights of the Los Angeles River extended to the full underground supply of San Fernando Valley:

> If it is conceded that the City of Los Angeles has the paramount right to the use of the waters of the Los Angeles River, then the abstraction of waters from this valley is as clearly an interference with that right as it would be if the valley, instead of being filled with debris, were and open lake from which the river drew its whole supply.[125]

While the Hunter and Buffington cases clearly established the prior rights of the city to all of the waters normally present in the underground basin of San Fernando Valley, a new question arose as to the rights of the city to underground waters of San Fernando Valley that they were supplied by importation from Owens River and introduced into the ground water supply by either irrigation or spreading operations; and the conservation of the flood water from the Pacoima and Tujunga creeks which was retained by a flood control dam and later permitted to enter the ground water supply of San Fernando Valley. In separate actions against the cities of Glendale and Burbank which derived municipal water supply from the underground water supplies of San Fernando Valley, Los Angeles sought to determine its right to these waters. The ruling of the court upheld the priority of Los Angeles to all of these waters.

In regard to the Owens River water used to recharge the ground waters of San Fernando Valley the court held that Los Angeles,

> … had a prior right to the use of the water brought to San Fernando Valley. It did not abandon that right when it spread the water for the purpose of economical transportation and storage.
> The use by others of this water as it flowed to the subterranean basin does not cut off plaintiff's right.[126]

Conserved flood waters "… that are released to rejoin the body of water of which they are normally a part …," are subject to treatment, "… as natural parts of such streams."[127] Thus

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[125] City of Los Angeles v. Jesse D. Hunter; City of Los Angeles v. Thomas D. Buffington, 156 Cal. 603, 607 (1909).
[126] City of Los Angeles v. City of Glendale; City of Los Angeles v. City of Burbank, 23 Cal. 2d 68, 76 (1943).
[127] Ibid., p. 74.

the past decisions of the court that "… have stated unequivocally that the pueblo rights include the rights to all of the waters of the Los Angeles River and the waters supplying it," were reaffirmed.[128]

Subject to the requirements of the City of Los Angeles others may use the waters of the Los Angeles River for their purposes:

> … the pueblo rights have always been measured, and therefore circumscribed, by the needs of the city. It thus insures a water supply for an expanding city with a minimum of waste by leaving the water accessible to others until such time as the city needs it.[129]

The Pueblo Right as Public Policy. The concept of pueblo water right has been molded into its present form almost entirely by judicial interpretations of the claims presented by Los Angeles based upon general grants and privileges extended as a part of the laws of Spain and Mexico to the colonization of agricultural communities upon the public domain. In many ways the pueblo water right is an extraordinary concept to meet the needs of a growing community. The right of the city to the surface and underground waters of the Los Angeles River gave the city an expanding volume of water to meet the growing demands of its local needs. No adverse interest, not even a right by prescriptive use, can be asserted against a pueblo right.

The importance of the pueblo right as a public policy fundamental to the community's control of its water resources was clearly recognized by Major H. T. Lee during the struggle to acquire the city's water works from the Los Angeles City Water Company when he observed:

> … I have been impressed with the persistence and vehemence of the contention of the citizens of the old pueblo that they owned the water supplied to the city. The city has owned the water ever since the town was nothing but a Mexican village. The proposition that the citizens of Los Angeles have to face is entirely different from the general question of municipal ownership of private utilities. Here we already own the water, the only point is, who shall control the supply.[130]

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[128] Loc. cit.
[129] Loc. cit.
[130] Los Angeles Times, August 18, 1899.

The Zanja System

At the beginning of the American period, Los Angeles' water distribution had developed entirely around the needs of an agricultural community to provide water for irrigation. During the next four decades Los Angeles remained a city of vineyards, orchards and groves. The zanja system continued to increase in its importance to the welfare of the city to meet the needs of its expanding agriculture. The Zanja Madre, which alone had supplied the needs of the community spread along its banks for fifty-five years, came to share her place with eight other zanjas spread over the plains to supply the new sprawling acres of green.

The Administration of the Zanjas. During the first few years of American rule the government of the zanjas continued to follow the established routines. To be certain it retained a power which it had exercised since the day of its founding, Los Angeles, in 1852, secured an amendment to its special act of incorporation to give the common council the power and duty,

> … to pass ordinances providing for the proper distribution of water for irrigating the city lands; to impose and collect fines for breach of ordinances, and to do all necessary acts for the purposes aforesaid.[131]

In 1854 the administrative position of zanjero or water overseer was created by the common council on the recommendation of Mayor Stephen C. Foster, to relieve the elected city officials of responsibilities for the details of irrigation permits and schedules, and the enforcement of ordinances concerning the zanja and its water.[132]

The zanjero was given broad powers and responsibilities in the supervision and government of the city's irrigation system. He was responsible fro the maintenance and repair of the main zanjas and their branches, and the removal of obstruction interfering with the free passage of water. All requests for the use of water for irrigation had to be submitted to the

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[131] MacPherson, op. cit., pp. 10-11.
[132] Workman, op. cit., p. 73.

zanjero who issued the necessary permits according to a schedule by which all applicants received their water. The fee for the water was charged prior to the issuance of the permit. The decisions of the zanjero were subject to review bye the mayor upon complaint of a cultivator. The mayor,

> …upon hearing the cause, shall forthwith decide the case with as little expense and delay as possible, and any person not satisfied with his decision shall if they choose, appeal to the Common Council….[133]

The zanjero supervised the distribution of water to see that the quantity due each irrigator was made available on schedule.

During the summer season the zanjero was assisted by deputies employed on a temporary basis to meet the heavier seasonal demands. Beginning in 1873 the deputies were organized so that each one had charge of an irrigation district designated by the zanjero, providing a more efficient distribution of water.[134]

In addition to these general operational responsibilities to the zanjero was made an ex-officio policeman responsible for the enforcement of municipal regulations relating to the zanjas. Ordinances, with penal sanctions, prohibited the illegal taking of water, damaging the zanjas, the creation of obstructions to the flow of water, or polluting the water by bathing, washing or disposing of sewage or wastes into the zanjas. Even fishing in the zanjas came to be licensed by the zanjero.[135]

The operation and maintenance of the zanjas was financed by nominal fees paid by the water users and a special water tax levied as a part of the general property tax. The rate in effect

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[133] MacPherson, op. cit., pp. 55-56

[134] M.C. Desnoyers, The Ordinances and Resolutions of the City of Los Angeles Passed Between the 19th Day of August, 1872 and the 8th Day of April, 1875, Inclusive. (Los Angeles: Herald Publishing Co., 1875) pp.43-44.

[135] Ibid., p. 104. W.W. Robinson, Compiled Ordinances and Resolutions of the City of Los Angeles. (Los Angeles: Nerley & Freeman, 1884) pp. 24-25.

in 1875 was $1.75 for one irrigating head of water for a twelve hour period during the day, and one dollar at night. Outside the city limits comparable rates were three dollars for a day and two dollars for a night. For a half-day the charges were $1.25 and fifty cents for an hour.[136]

Despite the great importance of irrigation in the life of the city during the first decades of American rule the zanjas never provided any significant return in revenue to the city. The zanjero seldom reported an annual income from water receipts in excess of $10,000. In 1879 when irrigation was at its peak, the zanjero's annual report showed $9494.55 in receipts and an expenditure of $11,212. The greatest return on any single zanja was $1,526.75 for the year.[137]

The Acme of the Zanja System. The zanja system was at its zenith during the 1870's before the transcontinental railroads brought their hordes in the 1880's. By 1877 there were 4,300 acres of land on the west side of the river and 200 acres in the lowlands to the east of the river under irrigation within the city limits. An additional four or five thousand acres were being supplied with water from the city zanja system below the city limits on the west side of the river.[138] New lands were brought under cultivation but the total area of irrigated lands within the city never greatly exceeded 3,000 acres.[139] Extensions in the irrigation system were generally offset by the subdivision of lands formerly under irrigation.

The prosperous outlook of the community of vineyards and groves was distributed by the diminishing water supply resulting from a cycle of years of below normal precipitation climaxed by the severe drought of the year 1876-77.[140] While the surrounding agriculture was almost

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[136] Desnoyers, op. cit., p. 44. Theoretically an irrigation head was 100 miner's inches.
[137] Los Angeles City, Archives, XXIV: 1033.

[138] Ibid., XXII: 879.
[139] Infra. P. 322 ff.
[140] Guinn, op.cit., p. 430.

destroyed during this drought, the City of Los Angeles was turning its attention toward the improvement and extension of its water supply for irrigation.

In 1873, the same year that the first Beldwin suit was brought, the common council passed a resolution calling upon the city engineer to prepare a topographic survey to discover reservoir sites for the conservation of winter flood discharge, since "…extending irrigation is of the most vital importance to the future of our growing City of Los Angeles."

The resolution, in expressing the views of the council on the solution of the problem, stated:

> We are firmly of the opinion that by a proper system of Reservoirs for saving the winter waters, the proper creation of tomas (dams) and the fluming or building of consented aqueducts on the line of the established ditches now in use, that a large body of land now almost worthless, might be brought under a system of cultivation without decreasing the supply of water heretofore flowing through the established ditches…."[141]

In 1877, a board of engineers, established to find the best practicable means of increasing the water supply for cultivation "…over the whole City of Los Angeles," reported on a comprehensive scheme of water development by expansion of the zanja system.[142]

It was estimated that an additional area of 3,700 acres within the city limits on the west side of the river and 3,300 acres on the east side of the river could be brought under cultivation with adequate ditches and reservoirs to supply the lands at higher contours than could be reached with the existing ditches. The high level areas were to be supplied from a ditch diverting water from the Los Angeles River at the Providencia rancho.[143]

The diversion ditch, following the highest possible contour around the base of the Santa Monica mountains through Griffith Park, would direct the water to Silver Lake and Echo Park

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[141] Desnoyers, op. cit., p. 64.
[142] Los Angeles City, Archives, XXII: 877.
[143] Providencia rancho was located near Universal City over the Cahuenga pass from Hollywood.

reservoirs. From there water would be distributed through ditches to bring the new lands under cultivation on the west side.[144]

For the east side high lands, the plan proposed to divert about half f the flow from the Providencia rancho supply ditch north of Griffith Park and take the water across the Los Angeles River in a submerged thirty-inch pipe. From the eastern plain of the river the water would flow in open ditches at the highest possible contours, cross the Arroyo Seco in another thirty-inch pipe, and again flow through open ditches to a reservoir located just north of the Selig Zoo in Lincoln Park. From the reservoir, ditches would supply the new lands to be brought under cultivation.[145]

It was estimated that high level of supply, by diverting the full flow of the river at the Providencia rancho, thirty cubic feet per second, could irrigate an area of approximately 6,000 acres, divided equally between the east and west sides of the river.[146]

The lowlands already under irrigation would be supplied by diverting the full surface flow of the Los Angeles River and the recovery of the underground flow by the construction of an underground dam across the river at a point within the Narrows.[147] It was this phase of the project that became the point of controversy in Vernon Irrigation Company v. City of Los Angeles.

At an estimated cost of $69,000 the city council carried out the plan in a modified form. The high supply on the west side was provided by the acquisition from the Canal and Reservoir Company of a ditch already diverting water from the river at the Providencia rancho to the Boho

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[144] Los Angeles City, Archives, SSII: 886.
[145] Ibid., p. 887.
[146] Ibid., p. 885.
[147] Ibid., p. 888.

Park reservoir. The ditch and reservoir were enlarged and the now Silver Lake reservoir was constructed. The east side irrigation system was carried out according to the plan.[148]

With the intercession of litigation an increased low level supply was provided by digging a water tunnel, 3,600 feet long, into the Klysien hills, paralleling the Southern Pacific tracks, to tap the springs which flowed from those hills. In addition to this new supply the waters of the Zanja Madro were conserved by lining it with some concrete for 8,000 feet down to Aliso street.[149]

The Decline of the Zanjas. These improvements, which might have been the foundation for a quiet and prosperous agricultural community for years to come, were doomed by the flood of people that caused the city to jump from a population of 15,309 in 1870, to 33,881 in 1880, and to 101,454 in 1890.[150]

Only one decade after the submission of the zanja extension proposals to provide the high level supply, Mayor W.H. Workman, who as a member of the city council had been the leading spokesman for the expansion of irrigation, reported in his annual message of 1887 that:

> The necessity of irrigation within the city limits does not now exist to any great extent as most of the vineyards or orchards have been subdivided and made into residence sites for our rapidly growing population.[151]

In 1888 the first of the zanjas, No. 5, was abandoned under the pressure of urban development. Fifteen years later in 1904 the last of the zanjas was abandoned, marking the end of a way of life that had provided for the sustenance of Los Angeles in its first century.[152]

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[148] Los Angles City, Council Records, KI: 634-85.
[149] Ibid., p. 684. Workman, op. cit., p. 91.
[150] Guinn, op. cit., p. 255.
[151] Los Angeles City, Archives, XXXIV: 409.
[152] Los Angeles City, Board of Water Commissioners, Third Annual Report for Year Ending Nov. 30, 1904 (Los Angeles: Geo. Nico & Sons, Inc., Printers, 1904) p. 23.

These last fifteen years were to mark several developments of more than marginal significance in contributing to the development in contributing to the development of the city's pattern of water resources administration. During the year that the first zanja was abandoned, the city fathers wrote the first home rule charter for the City of Los Angeles. This charter, approved by the state legislature in 1889, provided the first enunciation of the powers and duties of the water overseer, or zanjero, to appear in an organic set of the city.[153] Ample authority was also provided to enable the city to acquire and operate its own system of domestic water supply.

The problem of maintaining an adequate supply to meet the requirements of the declining number of irrigators dependent upon the zanjas, despite the inroads of domestic water requirements into the irrigation supply, perplexed city officials during the last few years. In 1899 Mayor Fred Eaton recommended drilling wells to provide supplementary water to ease the plight or irrigators suffering heavy losses from an inadequate water supply.[154] The following year Mayor Eaton reported that feelings we so intense that it was only with difficulty that the zanjero was able "…to keep on speaking terms with the cultivators."[155] But the problems of the zanja system finally auccumbed to subdivision without any successful effort to relieve the plight of the few cultivators that clung to the old way of life.

Before the expiration of the office of the zanjero, it was incorporated into a new municipal venture in water supply following the city's acquisition of the water works of the Los Angeles City Water Supply. Thus public ownership and administration of water distribution maintained continuity from the original Spanish pueblo.

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[153] Los Angeles City, Charter and Compiled Ordinances and Resolutions (Los Angeles: H.Y. McBride Free Press, 1889), pp. 26, 54-55.
[154] Los Angeles City, Council Records, LIV: 553.
[155] Ibid., LVII: 407.

The Domestic Water Works System

Early Contracts and Leases. Los Angeles took its first formal action to displace the zanja and the water carrier as a method of distributing water for domestic purposes when a franchise was granted to William O. Dryden in 1857 to establish a private water distribution system. Judge Dryden secured a water supply from springs rising on his privately owned land near the junction of College and Alamada streets. This water was diverted to a reservoir which Dryden constructed in the plaza and distributed to his customers through a system of wooden pipes.[156] Since the flow of the springs was very limited in quantity this system was never designed to serve more than a small portion of the city.

With the exception of this franchise the development of a domestic water supply system for the remainder of the city took the form of a combined leasing and contract arrangement. In September, 1863, the city contracted with J.L. Sainsevain to construct an improved dam on the river with a line of flumes connected to a small reservoir. In February, 1865, a lease of these water works was made to David W. Alexander for a term of four years, subject to renewal at his option for another ten years. Alexander assumed the responsibility of completing the Sainsevain contract by laying 1,500 feet of pipe and placing the system in operation by May 1, 1865.[157]

The lease provided for an annual rental of one thousand dollars and the payment of the fall cost of the improvements by Alexander. The city retained responsibility for the payment of state and local taxes on the water works system. All water for municipal purposes including fire protection was to be furnished without charge. Under no circumstances, was Alexander to, "…interfere with the general irrigation of the city." At the expiration of the lease the complete

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[156] J. Gregg Layne, "How the Thirty-Year Water Lease Was Made," Intake, XXV (Nov., 1948), 10.
[157] Workman, op. cit., pp. 81-82.

water works system was to be surrendered to the city, "…all to be free of debt and encumbrances of whatever character or description."[158]

After meeting unanticipated difficulties, Alexander conveyed his lease back to Sainsevain in October, 1865. The city later re-issued the lease directly to Sainsevain. To supply his distributing pipes Sainsevain constructed an elaborate dam made by driving in piling reinforced by earth fill. A water wheel, forty feet in diameter was placed at the dam to raise the water to the desired height for distribution by gravity flow.[159]

To distribute the water, Sainsevain and an associate Damien Narchessault laid wooden pipes made from bored pine logs joined by iron bands through the whole business district of the city. These pipes proved very unsatisfactory; "… they were continually bursting, causing springs of water that made their way to the surface of the streets."[160]

In November 1867, the city entered into a contract with Sainsevain to replace the wooden pipes and extend the distribution system by laying 5,000 feet of iron pipes. But the whole venture was plagued by grief. The severe criticism and embarrassment from the failure of the wooden pipes led to Narchessault's suicide in the common council chamber. A severe flood in the winter of 1867-68 destroyed the headworks including the dam and water wheel. In despair Sainsevain conveyed his lease to Dr. John S. Griffin, Prudent Beaudry and Solomon Lazard.[161]

The Thirty-Year Lease. Shortly after they took over management of the water works Griffin, Beaudry and Lazard pressed for a re-negotiation of the lease to substantially alter the terms and conditions under which Alexander and Sainsevain had operated. Presenting their petition in a plea for more adequate fire protection then provided by the wooden pipe system,

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[158] MacPherson, op. cit., pp. 81-82.
[159] Workman, op. cit., pp. 109-10.
[160] Newmark, op. cit., p. 350.
[161] Ibid., p. 366.

Griffin and his associates proposed that they lay twelve miles of iron pipes to replace all wooden pipes and extend the distribution system, place a fire hydrant at each street intersection, erect reservoirs for a twenty-day water supply, build new ditches from the river to supply the reservoirs, erect an ornamental monument in the plaza and supply all city buildings free of charge.[162]

Conditional to this plan of improvements, Dr. Griffin and his associates proposed a fifty-year lease of the city water works upon the payment of $10,000 in five annual installments, the surrender of $12,000 in city warrants which they held payable upon demand from the city water fund and a claim of $3,000 against the city for damages. The city was to furnish land for all of the necessary reservoirs and so grant the rights of way over city land. Water rates were not to exceed those of the Spring Valley Water Company of San Francisco. Upon the expiration of the fifty-year lease, if the lease were not renewed the city was to have,

> …the right at its option to take the works, machinery, and so forth, of the company, by paying the company, the value thereof without interest, said value to be ascertained by the Mayor and Common Council appointing one man, the Water-Works Company to appoint one man, and the two thus appointed to select a third man, and the three to value said workers.[163]

Instead of the standard lese the ordinance submitted for the consideration of the council provided for a grant in perpetuity to the water works and a franchise for ten inches of river water upon the fulfillment of the performances required of the leases.[164] Otherwise the terms of the ordinance conformed to the original proposal submitted by Griffin, Beaudry and Lazard. The ordinance was referred to a special committee which submitted a majority report favorable to the lease, observing that:

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[162] Los Angeles City, Archives, VI: 660-69.
[163] Ibid., p. 670.
[164] No record of this ordinance has been preserved. Mayor Aguilar in his veto message referred to the ordinance as a sale and Mayor Fred Naton, in an extensive review of the whole history of the water lease at the close of his term of office, described the ordinance as a grant in perpetuity. All other secondary sources verify this conclusion.

> We do not believe it advisable or prudent for the city to own property in this nature, as it is well know by past experience that Cities and Towns can never manage enterprises of that nature as economically as Individuals, and besides it is a continual source of annoyance and a politically hobby in Elections.[165]

John Schumacher submitted a minority report describing the lease as being adverse to the interest of the city, "…and contrary to the manifest wish, and desire of a very large majority of the resident property holders and tax payers…."[166] When the ordinance came up for councilmanic consideration the majority member of the committee, John King and Louis Roeder voted in favor of the lease. A.A. Boyle joined Schumacher in opposition. Murray Morrison, president of the council, at the insistence of King voted to break the tie by casting his vote for the lease.[167]

Mayor Chriatobal Aguilar, formerly and alcalde during Mexican rule and subsequently zanjero, vetoed the measure with the following message:

> It has always been considered by my predecessors, as well as myself at the present time, that the prosperity of the City of Los Angeles depends entirely upon the proper management and distribution of the waters of the Los Angeles River.
>
> First in magnitude, it will be the supply of water for domestic use, properly managed to avoid waste; but I cannot conceive the necessity of a Sale of this water franchise, in order to Secure a supply for domestic use. This can be as fully accomplished under a lease of the franchise, as well as by a sale thereof; or by the management of the Same by the City herself.
>
> In relation to the taking of water out of the river of Los Angeles and any of the Canals of the city, for domestic use and sale to gardens, I find the latter term so indefinite, as to extent, that in the course of time great questions may arise with other vested rights of irrigation claimed by the cultivators of the Soil all of which we should endeavor to avoid.[168]

A new ordinance was drafted providing for a thirty-year lease of the city water works. The water rates were to be regulated by the city council providing that they should never be lower than the rate at the time of the enactment of the lease. At no time was the company to take

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[165] Los Angeles City, Archives, VI: 680.
[166] Loc. cit.
[167] Los Angeles City, Common Council Records, VI: 235.
[168] Los Angeles City, Archives, VI: 684-85.

more than ten inches of water from the river, without the previous consent of the mayor and common council.[169]

To properly safeguard the city's interest in the zanja system, still of paramount importance to the city's water system, provision was made to exclude the water company from any rights or privileges,

> …to any extent or have any reference to the water works of said city used for the distribution of water for irrigation, or affect in any manner, any right of irrigation, either existing or present, or which may exist hereafter, except as to the ten inches of water, as hereinbefore provided. And it is expressly stipulated… that said parties of the second part (water company) shall not dispose of any water for the purposes of irrigation, but shall only take from said river the water necessary for domestic purposes as above specified.[170]

While the lease was being considered, a municipal election was held to fill two vacancies on the council. The campaign centered around the issue of the water lease. Both councilmen, who were elected, campaigned against the lease.[171] Meanwhile offers of substantially better terms were made for the lease of the city water works upon the expiration of the Alexander-Sainsevain lease held by Griffin, Beaudry and Lanard. Petitions bearing such names as Henry Dockweiler, F.W. Temple, William Griffin, Manuel F. Coronel, Cameron D. Thom and many others were presented to the council in opposition to the thirty-year lease or any alteration of the terms of the existing lease until its expiration.[172]

When the lease came before the council for final consideration on July 20, 1868, John King, who had become president of the council, denied all requests from citizens to be heard and forced an immediate vote, authorizing the lease.[173] This time Mayor Aguilar gave his approval.

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[169] MacPherson, op. cit., pp. 112-14.
[170] Ibid., pp. 115-16.
[171] Workman, op. cit., p. 86.
[172] Los Angeles City, Archives, VI: 693 ff.
[173] Los Angeles City, Common Council Records, VI: 251. On a motion to postpone consideration of the lease the vote was: Ayes: Boyle, Dalton, and Dotiller. Noes: Schumacher, Roeder and Nascarel. John King, president, voted no. On the question of the lease the original record was altered by the hand and pen that signed the name John King

Shortly after the execution of the new lease, Griffin, Beaudry and Lazard formed the Los Angeles City Water Company.

In these rather inauspicious circumstances, Los Angeles city water was placed under the private management of the Los Angeles City Water Company for the next thirty-three years. Other companies came into existence to supply certain areas by the same interests who owned the Los Angeles City Water Company and were later merged with it. Only the West Los Angeles Water Company, supplying outlying areas, survived the Los Angeles City Water Company by a few years.

Under private management, the distribution of water for domestic purposes, which had received no special attention until the 1850's and for several years later was considered a nuisance and a source of grief, became the most important aspect of water distribution as the city spread its urban structures over the land.

In comparison to its predecessors the Los Angeles City Water Company's operation of the domestic water distribution system was a great success. It developed a reliable headworks system at Crystal Springs, not subject to the extreme vagaries of the Los Angeles River in flood. The reservoir system was expanded. Iron pipes were laid and extended to meet the needs of the growing population.

Dissatisfaction With the Private Leasehold Operations. But by the time the thirty-year lease approached the expiration date, the citizens of Los Angeles were almost unanimously in favor of terminating the lease and inaugurating a municipally owned and administered water supply and distribution system.

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so that the minutes of the Common Council read: "The vote was four in favor and two against – approval of the proposition which was in the nature of a contract and ordinance."

The thirty-year lease had never been popular. Many felt that it had been conceived in iniquity to exploit the city and its citizens. This sentiment was enhanced when, in 1870, the water company petitioned the city council to reduce its annual payment to $300 in return for the cancellation of some warrants on the water fund and the fulfillment of its obligations to beautify the plaza. Amid threats of litigation to force payment of the warrants against the water fund the council finally lowered the annual rental for the lease to $400 form the original provision of $1, 500. The beautification of the plaza caused the reservoir of the Dryden system to be destroyed forcing its sale to the Los Angeles City Water Company.[174]

The years of litigation over pueblo water rights had made the citizens of Los Angeles aware of the crucial importance of these rights to the future development of the city. Some feared that private development of the Los Angeles River water might tend to jeopardize the city's claim to the pueblo right. Actions of the water company tended to confirm this suspicion.

When the lease was drawn, the general understanding was that the water company would develop its own water supply from the Crystal Springs on the Pelis rancho, immediately above the Narrows. Crystal Springs was a swampy area caused by a high water table formed in a depression near the river. As a result of this understanding the city limited the company to a flow of ten miner's inches from the river. When the springs failed to produce a flow more than twelve to fifteen miner's inches of water, the company drove a tunnel under the river and trapped the river for between one and two hundred inches of water. This diversion of river water remained unknown for sever years; and when it was discovered the city felt helpless to do anything about it. Water had to be provided for domestic use, and there was no other known source. During the

[174] Workman, op. cit., p. 88.

last years of the lease the company was taking twelve to fifteen hundred miner's inches of water under a franchise for a maximum diversion of ten inches.[175]

To reinforce its position to retain control of the distribution of water for domestic purposes the company conveyed its interest in the headworks to a new corporation, the Crystal Springs Land and Water Company in order to establish a separate claim of ownership to the headworks and the water supply. This directly challenged the city's interests in the pueblo rights. The Crystal Springs Land and Water Company contended that it was not a party to the lease of 1868 and not within its provisions.[176]

Many people felt that the water company was making profits from water that was owned by the people of Los Angeles. This sentiment was expressed by Judge A.M. Stephens when he said, "This system has meant a mint of money to the water company. All that we now have to do is to buy the pipes. We already own the water."[177] The general opinion of the time was that water rates based on a minimum rate of 1868 were too high. When the city council set a rate below the 1868 figures in 1897 the company objected and had the ordinance set aside by the courts as a violation of the lease. J.B. Lippincott estimated that each family paid five dollars for the cost of water and ten dollars for profit each year for their water service. The Republican city platform of 1896 asserted that water could be supplied at ten per cent of the company's rate.[178]

Inadequate fire protection, the ostensible reason for originally granting the lease, was another source of dissatisfaction. The bulk of the water mains were two, three and four inches in diameter. Fred Eaton, Republican candidate for mayor in 1898 and a former superintendent of water works for the Los Angeles City Water Company, asserted:

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[175] Los Angeles City, Council Records, LIX: 579-80.
[176] Ibid., pp. 588-89.
[177] Los Angeles Times, August 18, 1899.
[178] Ibid., November 15, 1896.

> There is not another city of the size of Los Angeles in this country in which there are 200 miles of two inch water mains. Facilities of this kind can never furnish fire protection, to say nothing of domestic service. It is absolutely dangerous for the city to continue in this position any longer.[179]

The lack of pressure resulting from the small mains was a constant source of annoyance to the water consumers:

> Many users (are) unable to obtain a flow in their hydrants…. and at other times the supply is grossly inadequate for the extra labor and difficulty attendant upon the irrigation of lawns and flower gardens when the pressure is too low.[180]

The combined distrust, annoyance and dissatisfaction with the private water company produced a popular sentiment which recognized municipal ownership and control as the only solution to the water supply problems. The home rule charter of 1889 was drafted to include ample powers for the city to acquire, own and operate its own system of water supply and distribution. To be certain that the city would not be committed to another thirty-year leas the charter further provided that:

> The said city (Los Angeles) shall not convey, lease or otherwise dispose of its rights in said water, or any part thereof, or grant or lease to any corporation or person, any right or privilege, to use, manage or control the said water or any part thereof, for any purpose, public or private, otherwise than by license revocable by said city at pleasure upon notice not to exceed six months; provided that this provision shall not be construed to prevent the ordinary sale and distribution of the said waters to the inhabitants of the city, or persons doing business therein, for irrigation and domestic uses, and for manufacturing purposes other than for water power.[181]

Return to Municipal Ownership. Early in 1898 before the lease had expired, the city authorities began negotiations with the Los Angeles City Water Company to determine what properties would be included in the improvements of the city water works to be returned to the city at the expiration of the contract. The company agreed to turn over all properties within the

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[179] Ibid., December 4, 1898.
[180] Loc. cit.
[181] Los Angeles City, Charter and Compiled Ordinances and Resolutions (1889), pp. 54-55.

city limits except the Crystal Spring headworks, the Bellevue and Buena Vista reservoirs and the connecting pipes which had been conveyed to the Crystal Springs Land and Water Company.[182]

A few days before the expiration of the lease the Los Angeles Water Company and the Crystal Springs Water Company brought suit to enjoin the city from taking possession of the water works. The Crystal Springs Water Company contended that its property did not come under the provisions of the lease of 1868; and the Los Angeles City Water Company asserted that according to the lease the acquisition of the water works was conditional "…upon the payment to them (Griffin, Beaudry, and Lazard or heirs or assignees) of the value of improvement made after the approval of this contract…."[183] The city brought suit to have receivers appointed to operate the Los Angeles City Water Company.

The injunction requested by the water company against the city was granted by the trial court along with the city's request for appointment of a receiver to collect the water rates and apportion them between the city as owner of the water and the company as owner of the water works. On appeal the California Supreme Court later affirmed the injunction and reversed the order appointing the receiver.

A few days before the contract expired, the city requested a statement of the cost of the purchase of the improvements made upon the water works system. The Los Angeles City Water Company asked $2,000,000 for its own property and an additional $1,000,000 for the headworks and property of Crystal Springs Land and Water Company. The city offered $1,300,000.[184]

The day after the lease expired the city named James C. Keys as its arbitrator according to the terms of the lease. The company appointed Charles T. Heeley as its representative on the board of arbitration. After months of negotiation and delay these to selected George H. Mendell

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[182] Los Angeles City, Council Records, LIX: 586.
[183] Ibid., p. 590.
[184] Los Angeles Times, June 15 and 16, 1898.

of San Francisco as the third arbitrator. After additional months of hearings and negotiations the board of arbitrators presented a majority report representing Kays and Mendell setting the purchase price at $1,183,591.42. Healey, the company representative, would not agree to this figure, holding out for the original figure offered by the company. As soon as the award was made known the company declared it would not abide by it since only two of the three arbitrators agreed to the award.[185]

On the basis of the report of the board of arbitration, the city council authorized a special election for approval of a bond issue of $2.090.000 to purchase the property of the Los Angeles City Water Company and to make extensive improvements in the water distribution system. The bonds were approved by a majority of almost eight to one on August 23, 1899 after a short but spirited campaign.

A whole series of suits involving technicalities of the bond elections, water rights to the Los Angeles River, the reduction of water rates, stockholder interests and taxpayers plagued every step of the negotiations. The bond issue was invalidated. Before instituting condemnation proceedings city officials considered it advisable to await the outcome of the appeals in the Pomeroy and Hooker litigation. If the city won these cases it was doubtful that the company could claim a property value to water rights at Crystal Springs in conflict with the priority of the pueblo right.

After more than a year of stalemate in negotiations, the city early in 1901 addressed a communication to the company officials urging a new attempt to compromise the differences. The company replied favorably to the proposal and an informal compromise committee was established by the city and the company to negotiate the differences. On July 19, 1901 a compromise agreeable to both parties was reached.

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[185] Los Angeles City, Council Records, LIX: 591-92.

The price of the improvements to the water works system including the headworks was compromised at $2,000,000. All litigation was to be immediately suspended. The sale was made conditional upon the passage of a new bond issue and the company agreed to provide the services of its attorney to help avoid technicalities which might bar the validity of the new issue. If the bond issue failed the water company would continue in operation of the water works. If the bond issue passed the company was to retain the profits from operation to the date of the bond issue and all profits subsequent to that date were to be credited to the city.[186]

The bond issue was approved at a special municipal election on August 28, 1901. After the bonds had been sold the water works were transferred to the city in February, 1902 according to the agreement. On February 13, 1902 a newly created Board of Water Commissioners assumed control of the operation and management of the Domestic Water Works System under a municipal ordinance. William Mulholland, the company's superintendent of water works, and its personnel were transferred to the municipal civil service. Any future possibility of alienating the water resources from the control of the community and its governmental agencies in the City of Los Angeles was practically precluded by the following amendment to the Los Angeles City Charter approved in 1903:

> The said city shall not convey, lease, or otherwise dispose of its rights in the waters of said River Los Angeles, or any part thereof, or grant of lease to any corporation or person, any right or privilege to thereof, for any purpose, public or private. No other city shall be conveyed, leased, or otherwise disposed of, without the assent of two-thirds of the qualified electors of said city voting upon such proposition at an election, general or special, at which such proposition shall be lawfully submitted: provided, however, that this section shall not be construed to prevent the ordinary sale and distribution, by the city, in the manner hereinafter prescribed, of the waters belonging to said city, to the inhabitants thereof or persons doing business therein for domestic and irrigating uses, and for manufacturing and business purposes, other than water power.[187]

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[186] Los Angeles City, Council Compromise Committee, Final Report (1901).
[187] Los Angeles City, Charter as Adopted January, 1889 and Amended January, 1903 (Los Angeles: Southern California Printing Co., 1903), p. 57.

Power System

It was obvious that a new problem in water resources administration was before the city when plans for the development of the Owens River water supply were first announced. The difference in the elevation of the aqueduct intake and outlet at San Fernando Valley was nearly 2,500 feet. Beyond the required gradient for the flow of water, the drop could be used for the generation of electrical power. Four sharp drops along the route of the aqueduct provided a total gross head of 1,960 feet available for power development with an assured constant flow provided by the aqueduct water supply system with its storage reservoirs to regulate the average annual flow of the aqueduct.[188]

The board of consulting engineers appointed to examine the feasibility of the Owens River aqueduct reported favorably upon the power phase of the project. The four power sites with a flow of 400 second feet in the aqueduct could produce and deliver to Los Angeles with due allowance for loss in generation and distribution the following amounts measured in twenty-four hour electrical horse power:[189]

LOCATION	HORSE POWER
Upper San Francisquito	25,000
Lower San Francisquito	11,000
San Fernando	6,000
Little Lake	7,000
TOTAL:	**49,000**

By controlling the flow through the generators for peak loads a maximum average load of 93,000 electrical horse power could be delivered in hours of greatest demand. This power potential exceeded the amount of electrical power consumed at that time in Los Angeles and the

[188] Los Angeles City, Board of Public Service Commissioners, Complete Report on the Construction of the Los Angeles Aqueduct (Los Angeles, 1916), p. 236.
[189] Los Angeles City, Los Angeles Aqueduct, First Annual Report of the Engineer of the Los Angeles Aqueduct to the Board of Public Works (Los Angeles, 1907), pp. 130-31.

surrounding communities of Long Beach, Pasadena and Santa Monica. Except for the Little Lake site located below Haiwee Reservoir, those power sites were within a forty-five mile radius of Los Angeles.[190]

Very little consideration had been given to the development of a municipally owned power system prior to 1905. The charter of 1889 had specifically exempt power generation from its reservation on municipal water rights. The lack of continuous flow of the tributary streams in the San Gabriel Mountains precluded any hydro-electric development on the Los Angeles River system.

In the municipal election campaign of 1898, Fred Eaton mad a passing reference to the desirability of municipal ownership of an electric power distribution plant to serve as a yardstick to "…bring the various companies to terms, by inspiring competition."[191] The only consequence of the statement was a request by the Los Angeles Electric Company to its employees to vote for Mr. Eaton's opponent.[192]

At first, city officials were inclined to dismiss possibilities of power development on the aqueduct, while admitting their existence. Mulholland reported that all of the power could be used on the aqueduct to pump water over barriers that would otherwise have to be tunneled.[193] But, when the full potentialities were realized, many civic leaders waxed eloquent; while the private utility companies sought to gain control of the generating capacity of the aqueduct.

Although none of the $23,000,000 bond issue for the construction of the aqueduct was to be used for power development, its advocates drew upon the power potential as an argument to

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[190] Ibid., p. 154.
[191] Los Angeles Times, December 1, 1898.
[192] Ibid., December 4, 1898.
[193] Ibid., August 1, 1905.

guarantee the financial success of the aqueduct project as a whole, characteristic of some of the power enthusiasts, one newspaper after editorializing on the benefits of the aqueduct, added:

> And the power! It will be owned by the city, and no council or any city official will dare do anything but utilize the 90,000 horse power of electricity for or in the benefit of the people.[194]

In the preliminary stages of the aqueduct construction program, K.P. Scattergood, was employed to supervise the construction and operation of hydro-electric generation plants in Owens Valley and power distribution lines along the aqueduct to power the heavy construction equipment. Later, upon the recommendation of the Board of Public Works, the city council appropriated $10,000 for the fiscal year 1909-1910 to provide preliminary engineering for the locomotion of power sites along the aqueduct, since power development was not chargeable to aqueduct construction under the previous bond issue.[195] This appropriation was the first formal action of the city's top policy-forming officials to deal with the question of developing hydro-electric power under city ownership and administration.

Following the appropriation of funds to initiate preliminary plans and designs for power developments in a special bureau known as the Bureau of the Los Angeles Aqueduct Power was established by municipal ordinance in the Department of Public Works. Mr. Scattergood was appointed Chief Electrical Engineer to head the operations of the new bureau and was admitted to membership in the advisory committed of the Bureau of the Los Angeles Aqueduct to share in over-all policy decisions on aqueduct construction.[196]

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[194] Los Angeles Record. June 6, 1907.
[195] Los Angeles City, Bureau of Los Angeles Aqueduct Power, First Annual Report to the Board of Public Works (1910), p. 9.
[196] Los Angeles City, Bureau of Power and Light, Abstract of Partial Proceedings of the Board of Water and Power Commissioners…(and its predecessors in interest) and the City Council of Said City Relating to the Creation and Development of the Bureau of Power and Light (1938), p. 20.

Immediately after the establishment of the Bureau of Los Angeles Aqueduct Power, the Board of Public Works recommended that the city council proceed with the authorization of a bond issue of $3,500,000 which with a proposed $3,000,000 harbor bond issue would reach the city's legal debt limit imposed by the city charter. The Board urged that the work on the power plants should be carried on concurrently with the aqueduct.[197]

In opposition to a bond issue for the development of the power facilities under city administration a representative of several Los Angeles financiers offered to supply the capital for the construction of the power plants along the aqueduct in return for a twenty-five year lease.[198] The proposal was never seriously considered.

The $3,500,000 bond issue for the development of aqueduct power was submitted to the city electorate on April 19, 1910. The approval of the bonds by an overwhelming majority of nearly eight to one indicated general public approval of public ownership of the power generating facilities along the aqueduct. The only opposition came from the privately owned electric utilities.

In 1911 a new charter amendment was adopted to provide general powers for the full development and operation of an electric power generating and distributing system. The provision, previously applicable only to water or water rights, requiring an approval of two-thirds of the voters to any proposal to sell, convey or lease the city's interest, was extended to the generation of hydro-electric power by any waters controlled by the city. The amendment increased the debt limit applicable to power bonds and provided for the future incorporation of the Bureau of the Los Angeles Aqueduct Power into the Public Service Department as the Bureau of Power and Light in a coordinate position with the Bureau of Water Works and Supply.

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[197] Ibid., p. 185.
[198] Los Angeles Examiner, November 1, 1909.

The issue of municipal ownership and control of the distribution of electrical power produced by the city's plants along the aqueduct was not presented to the municipal voters until 1911. At an advisory referendum the propositions of municipal power distribution or the sale of power to private lessees appeared on the municipal ballot on June 3, 1911. Municipal power distribution was endorsed by a vote of 11,809 to 1,312.[199]

In December, 1912 the city council authorized a new power bond issue for $6,500,000 to provide for the completion of the generating installations and the development of an electric distribution system, by purchase if possible. As a result of a controversy over other bond issues appearing on the same ballot and a growing opposition to municipal distribution of electrical power, the bond issue was defeated by failure to secure the necessary two-thirds margin. In May, 1914 the power bond issue was again submitted to the municipal citizenry for approval. This time the bond issue was approved by a vote of 56,183 to 23,164, a comfortable margin over the necessary two-thirds majority, but not as overwhelming as the 1910 or 1911 majorities.[200]

The transfer of the Bureau of the Los Angeles Aqueduct Power to the jurisdiction of the Public Service Commission as the Bureau of Power and Light on December 18, 1914 provided the final step in the consolidation of the power system into the general system of municipal administration of water resources. Although the foundation was laid and the city committed to both the generation and distribution of aqueduct power through its municipal agency, the battle for a monopoly of power distribution within the city limits continued for more than two additional decades. A policy of municipal ownership determined by the physical circumstances of topography was not so easily won against the great privately owned public utilities.

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[199] Los Angeles City, Election Records, I: 110.
[200] Ibid., p. 254.

> But there will be no political machine. The party that dares to invade the sanctity of the water department with selfish methods will meet with condign punishment, swift, complete and terrible.
>
> The Citizens Committee of One Hundred, 1899

CHAPTER III

WATER AND CITY POLITICS

No issue in the annals of Los Angeles, not even the morels of men, has so consistently perplexed the public official and stirred the citizen as the resolution of problems arising from the need and utility of water. Conversely politics has been a most significant tool in the human engineering of the water problem. The interest of the community in the control and extension of its water supply has been as basic as the urge for survival.

Fundamental differences frequently existed over public policies regarding the development of water resources. Public officials often found their stand on these policies, the determinate of their future political career. Every organic change in the nature of water administration was a matter of direct concern to the citizen and his elected representatives under Los Angeles' home rule charter. Until recently every capital expenditure which exceeded the operating income of the water and power funds had to run the gauntlet of a two-thirds majority vote before an indebtedness could be created to secure the necessary capital. And, in addition to all of these factors, the intense and bitter competition between the Bureau of Power and Light and the privately owned electrical utilities could be resolved only in the municipal political arena.

The Politician of Municipal Ownership

The political phase of the struggle for municipal ownership, provides the essential starting point for an analysis of the principal political strife over the development and utilization of water resources important to the City of Los Angeles.

Acquisition of the Water Works. By the circumstances of pueblo rights, the general acceptance of the paramount necessity for water development with the full resources of the community to assure its survival and growth, annoyances with the existing provision for water services without recourse to a change of policy, and the physical circumstance that aqueduct water dropping in elevation along its course could be made to produce power, tended to remove any fundamental conflict over the question of public ownership of water and power.

From the opening of the municipal campaign in 1896 to the approval of the referendum on power distribution in 1911 the unanimity of the community in regard to the public ownership of both water and power was qualified by only an insignificant, but vigorous opposition.

In the first municipal ownership campaign of 1896, both major political parties, all of the community newspapers and the commercial and civic organizations supported the termination of the private lease and the city's acquisition of complete control of the water works. The Republican City Central Committee under the chairmanship of Fred Eaton even suggested that the city supply the water to the consumer free of charge, paying maintenance and operating expenses for the water works from municipal taxes.[201]

The Democratic candidate, Meredith F. Snyder was elected mayor over Julius Martin, the Republican candidate on the strength of his more vindictive remarks about the water company. A typical report of a Democratic campaign meeting stated that the Democratic candidate for mayor "…spoke briefly, confining his remarks to a repetition of is previous declaration of hostility to

[201] Los Angeles Times. November 15, 1896.

the City Water Company."[202] After the election, the "popocratic" Mayor Snyder worked hand in hand with banker C.H. Toll and the Republicans of the city council to secure complete city control of the water works as soon as possible.

The election of 1898 continued in the same vein as the previous campaign. Fred Eaton, the Republican candidate for mayor, was completely committed to public ownership. Snyder, embarrassed by his failure to have acquired control of the water works and the fact that a leading Democratic attorney, Isadore Dockweiler, was counsel for the Los Angeles City Water Company in its litigation with the city, was defeated for re-election by Eaton.[203]

The first of the citizens' committee dedicated to the support of municipal water and power developments made its appearance in the special water bond election campaign of August, 1899. Organized under the chairmanship of Henry T. Hazard, the citizens' committee included prominent civic leaders from both political parties organized into special committees and ward units for the most effective conduct of the campaign. In addition to the chairman, the executive committee included the following members, Mayor Fred Eaton, Major H.T. Lee, A.J. Utley, A.M. Stephens, E.A. Meserve, S.H. Burke, J.B. Lippincott, R.A. Ling, Dr. C.O. Stevens, W.D. Gould, Ariosto McCrimmons, Walter F. Mass, and C.C. Wright.[204] In addition, R.P. Del Valle, H.C. Austin and L.H. Valentine who became prominently associated with later water developments were members of the citizens committee.

At this bond election the opposition had its first opportunity to make its position known by urging the defeat of the bond issue. But the only organized opposition to appear was the Los Angeles City Water Company and the West Los Angeles Water Company which supplied water

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[202] Ibid., November 22, 1896.
[203] Ibid., December 6, 1898.
[204] Ibid., August 20, 1899.

to some of the outlying areas of the city.[205] The bonds were approved by a vote of 7,189 to 973.[206]

The elections of 1900 and 1901 were like repeat performances of earlier elections. In 1900, Meredith F. Snyder was elected to the mayor's office to accomplish the mission he had set for himself four years earlier. In the second bond election to provide for the purchase of the water works at the compromise price of $2,000,000 the local citizenry gave its approval by a vote of 6,234 to 1, 267 or a majority of nearly five to one.[207]

Aqueduct Bonds. This overwhelming general community support of municipal water development continued through the two aqueduct bond elections and the first power bond election. On August 15, 1905, the city council passed a resolution with one protesting vote calling for a bond election on September 7, 1905, to authorize a bond issue of $1,500,000 to purchase the necessary water rights in Owens Valley and to begin preliminary work on the aqueduct. According to Mulholland,

> The only opposition we are meeting is the Edison people. They fear Los Angeles will have too much power if we run this water down here from those mountains. Now the power part of it we have not given any thought. What we have been looking for is water to drink. It will be time to take up the power end of it when we get the water down here.[208]

However, the electric companies were not united in their opposition. H.E. Huntington of the Pacific Electric and Power Company actively endorsed the project.[209]

Water department and city officials met with various civic and commercial groups to explain the full scope and details of the proposed Owens River aqueduct. The Los Angeles Chamber of Commerce in cooperation with other commercial bodies of the city sent a committee

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[205] Ibid., August 23, 1899.
[206] Ibid., August 24, 1899.
[207] Ibid., August 24, 1901.
[208] Los Angeles Examiner. August 15, 1905.
[209] Ibid., August 17, 1905.

consisting of H.C. Witmar, Meyer Lissner, and Fred A. Hines, into Owens Valley to investigate the proposition. As a result, the Chamber of Commerce gave its hearty approval to the entire project and recommended the passage of the bond issue.[210] The Municipal League gave its endorsement following a report by Mulholland and city attorney, W.B. Mathews.[211] On election day the whole community overwhelmingly approved the project by a vote of 10, [212]787 to 755.

When the $23,000,000 bond issue for the construction of the aqueduct was submitted to the electorates on June12, 1907 a comparable majority was registered in favor of the project.[213] An Owens River Campaign Committee was appointed to conduct the campaign. Perry Woldner of the Chamber of Commerce was chairman of the campaign committee and Meyer Lisaner, a leading figure in the Southern California Progressive movement, was the secretary in active charge of the canvass. The Owens River Campaign Committee included representatives of all the leading commercial and civic groups of the city including the Chamber of Commerce, the Merchants and Manufacturer's Association and the Municipal League.[214] All of the major city newspapers gave their active support.

But under this surface of harmony wore indications of future struggles and conflict. The power companies intensified their opposition,

> …to bully the city into giving or selling to them control of the power to be developed by the aqueduct; and have offered to cease opposition if assured that such an arrangement could be made.[215]

A small newspaper, the Los Angeles News, published by Samuel T. Clover, engaged in a vitriolic campaign of opposition. According to its contentions that Los Angeles River watershed

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[210] Los Angeles City, Department of Public Service, Complete Report on Construction of the Los Angeles Aqueduct with Introductory Historical Sketch, p. 14.
[211] Los Angeles Examiner, August 16, 1905.
[212] Los Angeles City, Election Records. I:17.
[213] Ibid., p. 40. The election result was 21,918 to 2,126.
[214] Los Angeles Herald. May 26, 1907.
[215] Los Angeles Times. May 26, 1907.

produced adequate water for two million persons; the shortage of July, 1904 had been deliberate scheme to frighten the citizens into approving the Owens River project; the city was being swindled by a group of financiers conniving with city water officials, who would bring the Owens River into San Fernando Valley to irrigate the lands, not to supply the domestic needs of the city.[216] Job Karriman, the leader of a thriving socialist party opposed the aqueduct for the same reasons.[217]

Although the Los Angeles News soon disappeared from the local scene as a financial failure, its rationale, questioning the fundamental purposes of the aqueduct and the integrity of everyone associated with it, survived to plague officials of the water department for many years.[218] Some credence was lent to Clover's hypothesis since a syndicate including Henry E. Huntington, S.H. Rarriman, Harrison Gray Otis, W.C. Kerkhoff, J.F. Sartori, Harry Chandler and B.T. Earl had purchased a portion of the former Rancho Ex-Mission of San Fernando for $440,000[219] and would make an estimated one thousand per cent profit when adequate water for irrigation and development was made available in San Fernando Valley.

But this tempest did not make itself felt until after the campaign had been successfully waged for the approval of the first power bond issue and the advisory referendum on power distribution dedicating the city to municipal ownership and control of the generation and distribution of the hydro – electric power available from the flew of the aqueduct.

Public Power. Since harbor bonds appeared on the same ballot with the power bonds on April 19, 1910, Joseph Scott, president of the Chamber of Commerce, appointed a special Harbor

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[216] e.s. Los Angeles News. August 5 and 8, 1907. According to the Herald, June 4, 1907, J.H. Hooker, one of the principal defendants in the case of Los Angeles v. Pomeroy was part owner of the News.
[217] Los Angeles Examiner, June 12, 1907.
[218] In recent years, Carey McWilliams, Southern California Country, and Island on the Land (New York: Sloan, Duell Pearce, 1946), p. 188 ff. repeats the basic Clover thesis as the factual basis for his chapter on water.
[219] W.W. Robinson, Ranchos Become Cities (Pasadena: San Pasqual Press, 1939), p. 96.

and Power Bond Campaign Committee. The executive committee, with primary responsibility for the conduct of the campaign, included the president of the city council and on representative each from the Chamber of Commerce, Merchants and Manufacturers Association, the Municipal League, the Board of Public Works, the Water Commission, the Harbor Commission, San Pedro and Wilmington.[220] After a spirited campaign in which the power facilities of the aqueduct were made by the private companies, the bonds for the construction of the municipally owned generating system were approved by a vote of 12,266 to 1,229.[221]

Again in 1911 the citizens of Los Angeles approved municipal distribution of the aqueduct power over a municipally owned distribution system rather than leasing the aqueduct power to a private electrical utility for distribution by a vote of 11,809 to 1,312, a majority of nearly ten to one.[222] The community had responded again, as unanimously as it had before.

The Aqueduct Investigation

The Charges. During the municipal election campaign of 1911, Mayor George Alexander supported by the Good Government Organization, a local counterpart of the California Progressive movement, was challenged by Job Harriman, candidate for the rapidly rising Socialist party. Harriman revived the charges published by Clover in the aqueduct bond campaign of 1907 and made the water "plot" one of the central issues of the mayorality campaign. Harriman described the "plot" as follows:

> Big business, realizing the wonderful possibilities of profit to be made in exploiting land and water in the vicinity of Los Angeles, conceives a gigantic plan and starts to carry it out with official aid. This plan involved the gobbling up of all available lands in and near San Fernando valley (about 100,000 acres); the securing of the Owens River water to irrigate these lands, by first creating a fake water famine and frightening the people into building an aqueduct, ostensibly to increase the city's water supply, but in reality to irrigate these lands thereby putting about $50,000,000 profit into the corporation's

[220] Los Angeles Examiner, April 1, 1910.
[221] Los Angeles City, Election Records. I:100.
[222] Ibid., p. 110.

> pockets, while the city gets none of the aqueducts water. L.C. Drand, agent for the interests, secured options on large holdings in San Fernando Valley; Fred Eaton goes to the Owens Valley and buys water rights; and Mulholland prepares the minds of the people with his reports of a "water shortage," when there is an abundance.[223]

Investigation. After the election, William Mulholland, the chief engineer of the aqueduct, asked for an investigation of the aqueduct by a committee of councilmen, citizens of the community or both, confident that any impartial investigation would vindicate the whole program relating to the aqueduct and its construction.[224] The city council approved the request and invited the chamber of commerce to name a special aqueduct investigation body. But the chamber of commerce declined the invitation until it could secure the sense of a new council.[225]

The new council, acting in accordance with the recommendation of Mayor Alexander appointed a committee of five including two Socialists, commensurate with the popular vote cast for the Socialists in the previous election, to investigate the aqueduct charges. Among the committee members were Charles E. Warner, electrical engineer; Ingail Carpenter, attorney; Edward Johnson, hydraulic engineer; H.A. Hart, real estate dealer; and Fred G. Wheeler, carpenter.[226] The last two were socialists. Later, when councilman Martin Detouski, the sponsor of the proposal was absent from the city, the council reconsidered its previous action dropping the socialists from membership on the investigating committee and substituting K.S. Cobb for Charles E. Warner.[227] After considerable controversy the committee appointed by the council included Cobb and Johnson, with Warner still remaining on the committee.

The Socialists, determined to gain participation on the investigation committee, presented an initiative ordinance naming two of their members, H.A. Hart and K.C. Cody to the committee

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[223] The Coming Victory. November 25, 1911.
[224] Los Angeles Express, December 11, 1911.
[225] Los Angeles Examiner. December 12, 13, and 23, 1911.
[226] Los Angeles Express. January 12, 1912.
[227] Ibid., January 31, 1912.

with the authorization of special investigating powers and funds independent of the city council.[228] The initial ordinance was adopted by popular vote at a special municipal election on May 29, 1912.[229]

In the meantime the aqueduct investigating committee created by the council had conducted its investigation. Johnson and Cobb refused to participate with the new committee members under the initiative ordinance and submitted their final reports on July 16, 1912.[230] Warner joined the Socialists, Cody and Hart, in a full fledged investigation of every aspect of the Owens River project. After months of investigation a Report of the Aqueduct Investigation Board was submitted to the city council and published.

Conclusions and Consequences. Among the 135 conclusions submitted by the investigators were the following observations:

> That the Los Angeles River watershed can be developed at a comparatively small expense to provide ample water for a city of one million people.
>
> That the use of all the water at certain periods of the year for irrigation and its return by drainage and seepage, contaminated by barnyard manure and other fertilizers, as well as by sewage, makes it unfit for drinking purposes.
>
> That the open canal sixty miles long exposes the water to still further contamination by the drowning animals of various sorts, which have been floating in the canal.
>
> That the 11,000 or 12,000 inches of water which can be obtained from the present Aqueduct is of value only as an irrigating supply.
>
> That the construction work of the Aqueduct shown general lack of supervision, that costly experiments were made; that the use of so-called "tufa" and adulterations resulted in an immense loss to the City, both in obtaining materials and repairing the Aqueduct.
>
> That no direct evidence of graft has been developed; that the Aqueduct system affords opportunities for graft, and that if this Board had had the necessary time to develop all

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[228] Los Angeles Tribune. May 28, 1912.
[229] Los Angeles City, Election Records I: 161. The vote was 16,546 to 15, 697.
[230] Los Angeles City, Report on the Los Angeles Aqueduct After An Investigation Authorized by the City Council of Los Angeles (Los Angeles: Municipal Newspaper Department Press, 1912), 28 pp.

> facts along lines suggested by individuals, a knowledge of human nature indicates that man would have been found who had succumbed to temptation.
>
> That the owners of the "Times" and of the "Express" and wealthy associates, including men prominent in railway and public utility corporations, were interested in San Fernando Valley and other lands which would naturally be benefited by the act of bringing the Owens River water to the head of San Fernando Valley.[231]

While many of these conclusions appear preposterous today, in view of the tremendous need for the importation of water from beyond the local watersheds and the immense growth of the population of Southern California, they did have significant consequences upon subsequent developments in water and power administration. A segment of the radical element of the Los Angeles community who accepted the "plot" theory of the aqueduct had consistently opposed the actions of the water bureau for many years. The differentiation of separate communities of political support for the two bureaus within the water and power department became evident at this time.

Reflecting this approach the Los Angeles Record became a champion of the "plot" and a consistent source of opposition to William Mulholland and later H.A. Van Norman as heads of the water bureau. Some of the characteristic headlines of the Los Angeles Record, inspired by information from the report of the Aqueduct Investigation Board have included such banners as MILLIONARES PROFIT CITY PAYS; AQUEDUCT DISSOLVES IN WATER; CEMENT BREAKS AT TOUCH; and AQUEDUCT WATER IS POISON.[232]

The charges unquestionably tended to complicate the difficult problem of inter-community relations with the people of Owens Valley. The report of the Aqueduct Investigation Board assailed responsible city officials for not adequately protecting the interests of Los Angeles in its dealings with Owens Valley and H.A. Hart of the Aqueduct Investigation Board

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[231] Loc. cit.
[232] Los Angeles Record, August 1, 1915 ff. and January 30, 1917 ff.

attempted to intervene in the formal negotiations that sought to reach a satisfactory agreement between the two communities.[233]

The aqueduct investigation also had immediate repercussions upon the contemporary political scene. Sensitivity over the fortunes to be made from unearned increment after water from the aqueduct became available in San Fernando Valley provoked a controversy over the disposal of surplus waters which virally concerned the basic pattern of community development in Los Angeles.[234]

As an immediate anti-climax of the aqueduct investigation, Harry H. Rose was elected mayor with the support of socialists. On the morrow of election victory, Mayor Rose charged that there was evidence of inefficiency and incompetence, on the aqueduct project even worse than he had heard.[235] However, one month later, after a personal tour of the aqueduct, the Mayor returned to Los Angeles to refute the charges of pollution, faulty construction, incompetence and inefficiency and to conclude that, "criticism of the aqueduct, so far as I have been able to determine is captious."[236]

The Acquisition of a Power Distribution System

The struggle for the acquisition of a power distribution system marked the beginning of a definite shift from the general community of support that had previously characterized the bond elections. In 1913 the bond issue for the acquisition of a municipal electric distribution system shared the ballot with a series of highly controversial bond proposals for the sale of surplus water. The power bond issue went down to defeat all but one of the water bonds.[237] The free-for-

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[233] Infra, p. 241.
[234] Infra, pp. 289-91.
[235] Los Angeles Record, August 8, 1913.
[236] Los Angeles Examiner, September 16, 1913.
[237] Infra, pp. 295-308.

all fight over the water bonds made it impossible to generalize about the significance of the power bond defeat.

The same proposal for a $6,500,000 power bond issue was submitted to the city voters again on May 8, 1914. The previous harmonious support of the general business community and its commercial organizations became seriously divided during the campaign. The chamber of commerce gave a general endorsement of the power bond, but the Merchants and Manufacturers Association urged a separation of the power plant and another for the acquisition of a power distribution system.[238] The private power companies demanded that the chamber of commerce withdraw its recommendation and remain neutral in the election campaign. The Los Angeles Times, charging that the chamber of commerce had joined in a raid on commerce, declared:

> Unless its name is a misnomer the Los Angeles Chamber of Commerce is not a political organization nor a body of agitators, not a municipal ownership campaign committee, but is an organization devoted to the development of the commerce and trade of Southern California. The section of the directors of the Chamber in joining in the crusade for confiscating the property of the electric light and power companies and their bondholders, and for putting across the unfair and indecent joint-bond ballot…is hard to understand.[239]

In reply to these complaints the Los Angeles Chamber of Commerce held a referendum of its membership. The endorsement of the power bond was approved by a vote of 874 to 390.[240] As a result, L.H. Valentine, president of the chamber of commerce and a vigorous supporter of public ownership of water and power utilities, took the initiative in the formation of the Citizens Power Bond Campaign Committee. The executive committee included A.H. Nefftzger as a representative of the chamber of commerce; W.B. Mathews of the City Club; Mrs. J.R. Waters of

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[238] Los Angeles Examiner, March 27, 1914.
[239] Los Angeles Times, April 11, 1914.
[240] Los Angeles Express, April 13, 1914.

the Friday Morning Club; and J.H. Bean of the Builders Exchange.[241] Mathews served as chairman of the committee.

The bond issue carried with a comfortable margin of votes.[242] But this was only the beginning of a fight that grew in intensity as the years passed by until the Bureau of Power and Light had established an exclusive monopoly over the sale of electrical power in the City of Los Angeles.

Negotiations which had been undertaken much earlier failed to produce any agreement for the purchase of the distribution facilities of any of the established private electric companies. Consequently the power bureau began to construct a distribution system paralleling the private utility lines and inaugurated condemnation proceedings against the Pacific Light and Power Company and the Southern California Edison Company to acquire the distribution facilities of these companies. After the city began the sale of hydro-electric power over its competing lines, the Southern California Edison Company indicated its willingness to negotiate a sale; and in April, 1917 a purchase and operating system was concluded with the city.[243]

Since the operating agreement provided for the disposal of the city's surplus power through the Edison Company, a new bond issue was proposed to complete the installation of the generating facilities at the second San Francisquito power site and the acquisition of land and rights preliminary to the development of power potentials in the Owens gorge. These bonds provoked the united opposition of those opposing municipal power development, and others who felt that it was part of a plot to sell municipal power to the "power trust."[244] Both the Los Angeles Times and the Los Angeles Record urged its defeat. The result was a resounding defeat

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[241] Los Angeles Harold, April 14, 1914.
[242] Los Angeles City, Election Records I: 254. The vote was 56,183 to 23,164.
[243] Los Angeles Department of Water and Power, Public Relations Division, Bureau of Power and Light—Growth and Achievement, p. 6.
[244] Los Angeles Record. April 30, 1917.

of 37,330 to 51,267 to provide one of the few occasions in which water and power bonds were defeated by a majority of "no" votes.[245]

The bond issue for the acquisition of the Edison company distributing system was not held until May 17, 1919. Except for the acquiescence of the Edison company, this campaign followed much of the same pattern as the 1914 campaign. The Los Angeles Gas and Electric Corporation, which had broken off negotiations for sale to the city with the announcement that it would fight absorption into the municipal system to the very end, engaged in a campaign of opposition with new vigor. The Los Angeles Times also opposed the bond issue; but the Chamber of Commerce, the Municipal League, the Los Angeles Realty Board, the Central Labor Council of the American Federation of Labor and many other organizations gave their support to the development of the municipal power distributing system.[246] The bond issue was approved by a majority of 46,656 to 21,243. Litigation inaugurated by the Los Angeles Gas and Electric Corporation delayed the transfer until May, 1922.

Water Bonds and Owens Valley

In 1921 a water bond issue was presented to the voters for the first time in nearly a decade. The bond issue was for $3,000,000 to make extensions and improvements in the domestic water supply system including reservoirs in San Fernando Valley. The needs for irrigation had created an unusually heavy demand upon local water system during the summer months and the requirements for the generation of hydro-electric energy necessitated a firm flow during the winter months. Both of these factors made the extensive reservoir capacity at the lower end of the aqueduct to store the winter flow for summer use essential.

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[245] Los Angeles City, Election Records I: 527.
[246] Los Angeles Express. May 24, 1919.

The criticisms of the Record and the so-called "knockers" of the aqueduct, incensed over water works improvements in San Fernando Valley, were sufficiently influential to deprive the bonds of the necessary two-thirds majority. The vote was 51,271 to 27,723.[247]

At the next regular state election, a new bond issue of $5,000,000 was proposed. This time the necessary two-thirds majority was secured even though the opposition continued to be vocal and aggressive. The opposition strength reached a new high of 32,699 votes but the 78,007 votes cast in favor of the bond issue represented more than an ample margin for the success of the bonds.[248]

Beginning in 1923 the water bureau was plunged into the bitterest struggle in its history. To secure an adequate water supply, the Department of Water and Power authorized the acquisition of land and water rights in Owens Valley to divert water, used there for irrigation, into the aqueduct and to enable toe city to tap the underground supply with wells.[249]

Owens Valley interests organized into pools to secure the greatest bargaining advantages and demanded that the city buy on their terms. The city bought whatever water rights it could until it had exhausted the water-bearing lands not committed to the pools demanding excessive prices.

The stalemate in bargaining was accomplished by a deluge of protest against the department's purchasing methods and relations with the people of Owens Valley. Valley leaders came to the city to protest the civic groups and public officials. Demands that the city buy all of the ranches, grew to include demands for the purchase of all of the town properties as well; and to pay reparations for intangible damages done to prosperity of business enterprises and to the economic livelihood of the town residents and agricultural laborers.

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[247] Los Angeles City, Election Records II: 85.
[248] Ibid., p. 140 ^.
[249] Infra, p. 246.

In July, 1924 Mayor George E. Cryer went into Owens Valley to investigate the charges. Upon his return he recommended that the water officials complete the purchase of the Owens Valley holdings through negotiation or arbitration.[250] Mulholland, who questioned the integrity and moral responsibility of the leaders in Owens Valley, refused to have anything to do with the proposal, asserting that most of the water-bearing lands had already been acquired by the department.

With the failure of peaceful means to affect the sale of their properties, the people of Owens Valley began to resort to violence. In November, 1924 a group of ranchers seized the diversion works on the Owens River opening the gates and permitting the water to continue its natural course into Owens Lake for several days.[251] Occasional incidents of violence occurred in 1925 and beginning in the spring of 1926 a series of dynamiting incidents occurred along the aqueduct and in city wells. The controversy remained shrouded in violence for the next year and one-half until the Department of Water and Power agreed to accept an offer of Governor C.C. Young to bring the parties together to settle the dispute.[252]

Shortly after the Board of Water and Power Commissioners agreed to do whatever was necessary to realize an amicable settlement of the dispute, the controversy was completely altered by the failure of the local Owens Valley tanks owned by W.W. Watterson and his brother, H.Q. Watterson.[253] These men, who had provided the leadership in Owens Valley, were later convicted for the embezzlement of depositers' funds. With the leadership discredited and their savings gone, the people of the valley turned to the Department of Water and Power to

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[250] Los Angeles Examiner. August 1, 1924.
[251] Los Angeles Times. August 7, 1924.
[252] Los Angeles Examiner. June 21, 1927.
[253] Ibid., August 5, 1927.

provide them with construction work to live through the winter. All of the claims were settled later.

Despite the fact that the circumstances were the reverse of the situation when the Aqueduct Investigating Board was charging the responsible officials with making too many concessions to the people of Owens Valley, the Los Angeles Record became the champion of the cause of Owens Valley using the theme of the "plot" to discredit the water officials by trying to demonstrate their malicious exploitation of "the valley of broken hearts."

It is doubtful if public officials have ever been subjected to such a scathing attack as the Record conducted day after day. Repeatedly in 1925 and 1926 the members of the Board of Water and Power Commissioners were listed in bold type under headline banners, such as, THESE MEN ARE DANGEROUS, or TRAITORS TO LOS ANGELES.[254] William Mulholland, as builder of the Aqueduct and the chief engineer of the water bureau, became a special symbol for vilification.

With the exception of the campaign by the Record, the Owens Valley dispute had amazingly little influence on domestic politics in Los Angeles. Mulholland and the water bureau continued to evoke general support from the rest of the press and the general civic organizations. When Mayor Cryer urged renewed negotiations with the residents of Owens Valley, both the Municipal League and the City Club finally endorsed Mulholland's administration of the water department.[255] During these years of intense controversy with Owens Valley four water bonds were submitted to the voters. Each of them carried with diminishing opposition.

However, this campaign of vilification unquestionably had its influence in the defeat of the $22,500,000 water bond issue in 1929. The failure of the St. Francis Dam in1928 caused

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[254] January 23, 1925, August 4, 1925.
[255] Los Angeles Harold, August 7, 1924.

additional wrath to be exercised against Mulholland and the water bureau. Although Mulholland had resigned a few months before the election, his close associate and successor, H.A. Van Norman, shared the same criticisms that had been leveled against Mulholland. The vote, a majority of 147,799 to 86, 893 votes, was not adequate for the two-thirds majority required.[256] By May 20, 1930 a much enlarged water bond issue was carried by the overwhelming vote of 190,042 to 22,088.[257] This was the last time that the water bureau had to face public scrutiny at the ballot box.

The Struggle For a Power Monopoly

Once the distribution system of the Edison company was acquired, the Bureau of Power and Light became engaged in a fierce political struggle to expand its power generating capacity, to improve its existing distributing system and to gain a monopoly of power distribution in the City of Los Angeles.

The operating agreement with the Southern California Edison Company has provided that for a ten-year period the Bureau of Power and Light would confine its regular power generation to hydro-electric power unless it acquired the steam plants of the Los Angeles Gas and Electric Corporation's electric power system. The Edison company was obligated to sell to the city whatever quantity of power was needed to meet the demands of the city's distribution system that were not met by its own hydro-electric generators.[258] In 1924 the Edison company under this contract was providing the municipal system with fifty-five per cent of its electrical energy at rates substantially higher than the cost for the hydro-electric energy generated by the municipal

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[256] Los Angeles City, Election Records III: 624.
[257] Ibid., p. 695.
[258] Los Angeles City, Board of Public Service Commissioners, Eighteenth Annual Report for the Year Ending June 30, 1919 (Los Angeles 1919), p. 30.

plants along the aqueduct.[259] The distribution system which the city had acquired was in serious need of extensive improvements. During the years of negotiation and operation following the conclusion of the sale agreement, the Edison company had held extensions and betterments to a minimum. Scattergood established that $8,500,000 would be required to bring the capacity of the distribution system into proportion to the existing demands for services.[260]

The Boulder Canyon Project and Public Power. When the proposal for a multiple purpose dam in Boulder Canyon was first being considered by the Bureau of Reclamation, its power generating capacity immediately became of interest to both the municipal and private utilities. Both groups filed application with the Federal Power Commission for rights to develop hydro-electric power on the Colorado River after the feasibility of the project had been favorably reported upon in the Fall-Davis report.

In August, 1921 a new cititzens' organization, the Public Power League was formed to defend public power against the private power corporations from "…the 'malicious propaganda' which they had launched against Los Angeles in the interior countries". John W. Kemp, member of the manufacturers' committee of the chamber of commerce, became president of the new organization. Among the persons associated with its organization were Francis J. Heney, James A. Anderson, Marshall Stimson, H.T. Wright, George F. Bidwell, A.P. Southwick, Joseph Crail, H.O. Wheeler, W.A. Roberts, Mrs. Shelly Tolhurst, S.C. Graham, George Dunlop, Mrs. N.N. Koons, Mrs. J.S. Clewe, C.B. Koiner of Pasadena, and Horace Forter, mayor of Riverside.[261]

A few weeks later the champions of private power development formed the Peoples Economy League to oppose any plan for the City of Los Angeles to undertake the Boulder Canyon Project. Herbert L. Cornish assumed the permanent leadership of the organization which

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[259] Ibid., Twenty-Third Annual Report for the Year Ending June 30, 1924 (Los Angeles, 1924), pp. 31-32.
[260] Ibid., pp. 32-33.
[261] Los Angeles Examiner, August 26, 1921.

included the following persons among its sponsors: Isadore B. Dockweiler, W.M. Garland, Narso N. Hellman, Maurice S. Hellman, D.A. Hamburger, W.I. Hollingsworth, J.B. Lankershim, J.B. Van Nuys, John C. Mott, N.W. O'Melveny, Victo H. Rossetti, Eli P. Clark, O.P. Clark, Dr. Milbank Johnson, Mrs. Carrie Jacobs Bond and many other prominent civic and business leaders of the community.[262] The first test of strength between these two groups came at the regular municipal election of June 5, 1923 when a bond issue of $35,000,000 appeared on the ballot. Of this amount $25,000,000 was allocated for the development of hydro-electric power at Boulder Dam and the balance for improvements in the local power distributing system.[263]

The Los Angeles Chamber of Commerce refused to give its endorsement to a water or power bond issue for the first time. After the city officials met with the Chamber of Commerce to solicit their support, R.H. Ballard, president of the Southern California Edison Company, urged a joint meeting of water and power officials with representatives of the Edison Company and the Chamber of Commerce. At this meeting, Ballard proposed that the Board of Public Service Commissioners withdraw their support from other municipalities and communities attempting to secure the development of power on the Colorado River and join with the Edison company in a

> …united effort for the speedy commencement of the work of building a suitable dam on the Colorado River for flood protection, irrigation and power development that will mean so much to the development of a greater Los Angeles.[264]

The city officials rejected the offer and the Chamber of Commerce took action in opposition to the bond issue.

A strenuous campaign was waged by both sides. The Board of Public Service Commissioners openly appropriated funds for campaign purposes. Water and Power employees

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[262] Ibid., October 7, 1921.
[263] Ibid., April 14, 1923.
[264] Letter, Burdett Moody to S.C. Evans, June 27, 1923, Boulder Dam Association File No. 724.

organized to supplement the activities of the Municipal Ownership Protective League. Candidates for the city council and for mayor were endorsed and supported through the instrumentality of this citizens' committee. Public Service Commissioners R.F. Del Valle and John H. Haynes in a public letter also signed by William Mulholland and E.F. Scattergood openly charged John D. Fredericks, one of the leading mayorality candidates, with opposition to the Boulder Dam project.[265] The bond issue was defeated by a vote of 41,406 to 38,304.[266] But George E. Cryer was re-elected with the support of the Municipal Ownership Protective League.

Progress with Cryer. During his next two terms in office, Mayor Cryer vigorously supported the Boulder Canyon project, the Colorado River Aqueduct, the Metropolitan Water District and other proposals for the development of the water and power resources of Los Angeles. Through his initiative a new Los Angeles Water and Power Protective League was formed that assumed a semi-permanent character.[267] One campaign after another was conducted to advance the basic water and power program.

A power bond issued for $21,000,000 was submitted at a special election on May 6, 1924. The vote of 104,018 to 55,959 meant defeat by a very narrow margin.[268] At the same time, two ordinances which had been approved by the city council to appropriate funds to appraise the Los Angeles Gas and Electric Corporation's electric system preliminary to efforts to seek its acquisition by the municipal electorate in a referendum. The plans of the Public Service Department for the development of the water and power phases of the Boulder Canyon project were approved by an overwhelming majority of 121,516 to 27,828 in a "straw vote" submitted

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[265] Los Angeles Examiner. April 27, 1923.
[266] Los Angeles City, Election Records II: 272.
[267] Los Angeles Record. March 5, 1924.
[268] Los Angeles City, Election Records II: 367.

by the council to the citizenry for its guidance on the basic question of public policy.[269] At the same time the city was authorized to contract with the United States government for the acquisition of the hydro-electric power rights on the Colorado River.

After the very narrow defeat of the power bond issue, the Municipal Water and Power Defense League secured a place on the primary election ballot of August 26, 1924 by an initiative petition for a bond issue of $16,000,000.[270] With wholehearted support from the Chamber of Commerce, a report of the State Railroad Commission outlining the necessity for improvements in the municipal power system, and a vigorous campaign, the power bonds were carried by a vote of 117,035 to 14,436.[271]

In 1925, a $2,000,000 bond issue for the Department of Water and Power to make preliminary surveys for the Colorado River Aqueduct, and a "straw vote" upon the policies and principals of the proposed Metropolitan Water District, were approved by substantial majorities. At the same time, the Los Angeles Water and Power Protective League campaigned vigorously for the re-election of Cryer and twelve councilmanic candidates receiving their endorsement under the slogan, "Protect Your Water and Power."[272] The result was an overwhelming victory for the public ownership ticket.

In 1926, two water and power bonds totaling $21,000,000 were again approved by the voters. But in 1927, with the combined opposition of the Chamber of Commerce and the other commercial organizations, the series of popular victories came to an end. Two municipal ordinances, one providing authorization of condemnation proceedings for the acquisition of the Los Angeles Gas and Electric Corporation and the other authorizing the construction of a steam

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[269] Loc. cit.
[270] Los Angeles Examiner, August 12, 1924.
[271] Los Angeles City, Election Records II: 403.
[272] Los Angeles Record, May 23, 1925. Los Angeles Herald-Express, July 11, 1940.

generating plant at the harbor area, were defeated at a referendum election.[273] Two water and power bond issues totaling $40,000,000 were defeated in the mayoralty election of 1929. The Chamber of Commerce endorsed the water bonds but rejected the power bonds.[274]

Controversies in the Porter Administration. In contrast to the advances of the Cryer administration, the term of John C. Porter in the mayor's office was marked with extreme controversy over the Bureau of Power and Light. Porter, who had previously served on the Los Angeles County Grand Jury, was elected mayor in 1929 over a field of relatively unknown candidates. Cryer had declined to be a candidate for re-election. During the campaign Porter announced himself as standing,

> …squarely for municipal ownership, control and operation of two highly important civic projects, the first being water and power, the second being the Los Angeles Harbor….[275]

However, immediately after his election Mayor Porter declared his intentions of reorganizing the water and power development observing:

> The public has lost confidence in the administration of these utilities and is demanding that politics be eliminated from the department and that conservative business methods be substituted throughout.[276]

Although Porter demanded the resignation of all members of the city commissions, when he took office no radical change was perceptible. His first two appointees, Harlan G. Falmer and E.W. Scofield continued to support the traditional policies of the department.

But with the appointment of Frank H. Brooks to succeed John H. Richards, considerable consternation arose among the supporters of municipal power. The Los Angeles Record, at times as vehement in support of the power bureau as it was opposed to the water bureau, charged that Porter was betraying those who had supported him on his forthright pronouncements in favor of

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[273] Los Angeles Times, June 8, 1927.
[274] Los Angeles Record, May 28, 1929.
[275] Ibid., May 8, 1929.
[276] Los Angeles Times, July 2, 1929.

municipal ownership to the Board of Water and Power Commissioners. Brooks had apparently never supported a power bond issue.[277] After intensive pressure was exerted to have Brooks' nomination withdrawn, the city council confirmed his appointment by a vote of eight to seven.[278] For the first time in many years, the water and power administration did not have a majority of the city council to support its position.

Immediately after the passage of the water bonds for the Mono Extension, Harlan G. Palmer resigned from the Board of Water and Power Commissioners and O.T. Johnson Jr., described as a "local capitalist," was appointed to the vacancy.[279] After failing to secure Scofield's support of Johnson's program for the Department of Water and Power, Porter demanded Scofield's resignation. Scofield refused. Porter sent a message to the council dismissing Scofield from the commission and re-appointing John R. Haynes to a new term of office.[280]

According to an editorial in Harlan G. Palmer's Hollywood Citizen, the political background to Porter's sections were described as follows:

> Johnson financed with thirty to fifty thousand dollars the mayoralty campaign of a man, who, Johnson declared, would keep the publicity owned power department in its proper sphere of purchasing power from the private companies and who would be against taking over competing lines. Johnson financed a daily newspaper, (the Illustrated Daily News) the publisher (Manchester Roddy) of which is frank in expressing his honest conviction that the city should be driven out of the power business. Johnson made donations to Rev. R.P. Shuler who has opposed power bonds and frequently held members of the Water and Power Board up to public scorn through abuse and vilification.
>
> Scofield believes that when the present contract with the Edison Company expires in another year, the city should produce all of its own power. Bob Shuler has declared that Scofield must go, that he is unfit for public service. Commissioner Brooks and O.T. Johnson Jr., Reverend Shuler contends, are the men to have control of the city's power property.

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[277] Los Angeles Record, December 10, 1929. ff.
[278] Ibid., December 23, 1929.
[279] Los Angeles Illustrated Daily News, May 24, 1930.
[280] Los Angeles Express, August 27, 1930.

> Dr. Haynes, Shuler has declared is unfit, but Shuler will not object to the retention of Haynes if he can be circumvented with a majority of which Johnson is in control.
>
> With Scofield's discharge written the Mayor sends in the appointment of Dr. Haynes. This is a sop to the friends of the power department….
>
> So far as the Mayor and Reverend Shuler are concerned, the matter is settled. O.T. Johnson, Jr. is to run the department of water and power.[281]

The city council approved Scofield's removal and confirmed the appointment of Arthur Stressburger to the vacancy.[282] With this appointment, Mayor Porter secured control of a majority of the Board of Water and Power Commissioners.

For a general reorganization of the department, Porter announced that the two bureaus were to be consolidated into a single unit, "…under one responsible, capable, efficient general manager," and all "…political scheming and maneuvering for personal benefit must and will be stopped."

As a part of the reorganization, H.A. Van Norman was made general manager of the Department of Water and Power and S.F. Scattergood was retained as chief electrical engineer in place of his former position as chief electrical engineer and general manager of the Bureau of Power and Light. Four of the subordinate executives in the power bureau, Burdett Moody, business agent; C.O. West and F.H. Mullen of the transportation division and James F. Moran of the construction division were dismissed on charges that

> … under the cover of night they removed and willfully, deliberately, negligently and destructively disposed of certain irreplaceable official documents belonging to the department.[283]

The public documents were the political campaign files of the Department of Water and Power Employees' Association.

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[281] Los Angeles Examiner, October 4, 1930.
[282] Los Angeles Herald, September 11, 1939 and October 2, 1930.
[283] Ibid., January 13, 1931.

Indicative of the nature of the struggle, the citizens organization which was formed to wage the struggle in opposition to Mayor Porter became the Municipal Power and Light Defense League organized "…to defend the municipal power and light bureau against attack."[284] E.H. Scofield became the chairman of the special election committee in direct charge of the councilmanic campaign.[285] "Municipal ownership" candidates were supported in each of the councilmanic districts and in the final election eight of these candidates were elected, giving them control of the new council.

During the campaign, charges were made that Frank H. Brooks was president of the Welker Lake Land Company which controlled lands being acquired by the city in Mono Basin and that O.T. Johnson, Jr. was the manager of a corporation with large holdings of Edison company stock.[286] The repeated demands for investigation had ample response after the election. The mayor appointed a committee of nine citizens to probe the Department of Water and Power.[287] The city council directed a special committee composed of "public ownership" councilmen to make its own investigation.[288]

The events which followed were rich in both detail and controversy. In brief, Commissioner Johnson resigned and the council refused to confirm the mayor's nomination of Frank J. Waters. The resulting deadlock between the mayor and opposing groups on the Board of Water and Power Commissioners was not resolved until Mayor Porter appointed John W. Baumgartner, a staunch advocate of municipal ownership, to the Johnson vacancy on March 11, 1932.[289]

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[284] Los Angeles Record, December 11, 1930.
[285] Ibid., April 27, 1931.
[286] Los Angeles Herald, January 5, 1930; Hollywood Citizen, December 11, 1930.
[287] Ibid., June 29, 1931.
[288] Ibid., July 7, 1931.
[289] Los Angeles Records, March 11, 1932.

While the investigation by the committee of the city council, with Harlen G. Palmer as special council, provided dramatic headlines, the conclusions of the investigation were limited to findings that Commissioners Stressburger, Johnson and Brooks had rendered the power bureau "…impotent as a successful competitor of the private power companion for the electric business of the city," that the consolidation of the bureau had been destructive of the morale of power employees, that power bureau employees had been willingly removed from office and that Van Homan was not qualified as an electrical engineer to properly manage the power utility.[290] Restoration of the duel management was urged.

Immediately after an unsuccessful recall election supported by the Municipal Power and Light Defense League, Mayor Porter asked for the resignation of Water and Power Commissioners John R. Haynes and A.F. Southwick.[291] The Water and Power Commission, following the leadership of Haynes replied by re-establishing the two separate bureaus in the Department of Water and Power, returning E.F. Scattergood to his former position of chief electrical engineer and general manager of the Bureau of Power and Light. Porter addressed a communication to the council ordering the removal of Haynes and Southwick. But the city council refused its approval, confirming the Haynes' policies.[292] Porter continued to serve the balance of his term in this state of impotence.

While the political battles were being waged other advances in the basic program of the power bureau were being made. Hoover Dam was becoming a reality. To build a transmission line to bring the power to Los Angeles, a charter amendment was submitted to the municipal voters during the regular senate election in November 1932 to authorize the Board of Water and

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[290] Los Angeles Herald, April 27, 1932.
[291] Los Angeles Times, May 7, 1932. Southwick, an avound supporter of public ownership had been appointed by Mayor Porter to succeed A.B. Prior whose term had expired during the period of deadlock over the appointment of a successor to O.T. Johnson, Jr.
[292] Hollywood Citizen, May 17, 1932.

Power Commissioners to obtain long-term loans from the federal or state governmental agencies secured by general revenue bonds without the necessity of popular approval. With this authority, a loan was negotiated with the Federal Reconstruction Finance Corporation for $22,500,000 to build the power transmission lines from the Hoover Dam.[293]

Meanwhile, the mayoralty race and the councilmanic directions were again receiving the careful attention of the supporters of public ownership. In the municipal primary election the Municipal Power and Light Defense League gave "satisfactory" endorsements to George E. Cryer, Frank L. Shaw and Charles W. Dempster. Porter was described as "unfit."[294] A full slate of councilmen committed to public ownership was supported in the councilmanic districts.

At the primary election Frank L. Shaw won the opportunity to contest the incumbent John. C. Porter for re-election. Shaw, who had earlier been elected to the city council by the support of the Municipal Water and Power Defense League in 1925, received the endorsement of the public ownership group. Shaw was elected mayor together with a majority of the council committed to the support of the power bureau.[295]

Victory with Shaw. During Mayor Shaw's first term in office, the power bureau won the major objective of its program. The construction of the transmission line from Hoover Dam was completed. A new bond issue for $22,799,000 was approved by the municipal voters to refinance the Reconstruction Finance Corporation loans which bore five and six per cent interest rates.[296] An adequate supply of low-cost electrical energy was available to meet the demands of the Los Angeles markets with Colorado River power.

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[293] Los Angeles Examiner, April 26, 1933.
[294] Los Angeles Record, April 12, 1933.
[295] Los Angeles Examiner, June 7, 1933.
[296] Los Angeles Times, October 30, 1935.

With a court decision holding that the Los Angeles Gas and Electric Corporation must secure a new franchise for the Operation of its general gas and electrical distribution systems, new opportunities were created to force negotiations for the acquisition of its electric system.[297] At a special election on September 27, 1934, a series of charter amendments were presented to the electorate to grant a franchise to the gas company and to authorize the Department of Water and Power to borrow funds from state or federal government agencies to purchase the electric system of the Los Angeles Gas and Electric Corporation, to assume the outstanding indebtedness of the Los Angeles Gas and Electric Corporation and to retrain the employees of the private electric utility without regard to civil services requirements.[298] The amendment to authorize the franchise was defeated but the others granting authority to the Department of Water and Power to consummate the negotiations were all improved.[299]

In a final bid, the Los Angeles Gas and Electric Corporation secured the submission of a charter amendment to grant a franchise by initiative petition at a special municipal election on April 2, 1935.[300] The proposition was defeated after E.F. Scattergood and other supporters of public power conducted an active campaign in opposition.

With this defeat the Los Angeles Gas and Electric Corporation was forced to negotiate the sale of its electric system to the city. A sale agreement was reached in September 1936.[301] A charter amendment providing jointly for the purchase of the electric system of the Los Angeles Gas and Electric Corporation and a new franchise for the distribution of gas on condition that the

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[297] City of Los Angeles v. Los Angeles Gas and Electric Corporation. In the Superior Court of the State of California, In and For the County of Los Angeles, No. 230,998A. The company had been operating under a franchise to provide for "illuminating lights", but not heat or power. Injunctive relief would be granted to the city to prevent the company from using public streets and rights of way unless a new franchise were secured.
[298] Los Angeles Examiner, September 3, 1934.
[299] Ibid., September 28, 1934.
[300] Ibid., March 27, 1935.
[301] Los Angeles Herald-Express, September 24, 1936.

sale be consummated was approved by the electorate on December 9, 1936.[302] The purchase of the electric system by the city for $46,340,000 marked the achievement of a virtual monopoly over the local electric power market in the City of Los Angeles.

Relations with the Shaw Administration. The election of Shaw as mayor meant the vindication of the Haynes-Scattergood policies for the Department of Water and Power. The Shaw appointees to membership on the Water and Power Commission were either active partisans of municipal ownership of the electric utility, or passively followed by Haynes' leadership.

Although all of the commissioners during this period were eclipsed by Dr. Haynes, such men as Watt Moreland, and A.B. Prior served with distinction. However, Commissioner Alfred Lushing, one of the most notorious members of the Shaw entourage, seemed to be interested in only political spoils. He won great notoriety and a subsequent conviction for his part in the protections racket while still associated with the Department of Water and Power.[303]

While the position of the power bureau was enhanced by the support of the Shaw administration, the water bureau was relegated to a much less significant role. A number of Van Norman's most valued sides were dismissed from their positions in the Department of Water and Power following the election of Shaw. Among those dismissed were Carl A. Heinre, an electrical who served immediately under Van Norman in the consolidated department; Otto C. Whitaker, chief of the meter reading section; A.J. Ford, right of way agent; Orlando Northcott, assistant publicity director and Carl K. Chapin, commercial director.[304] Van Norman was retained as chief engineer and general manager of the Bureau of Water Works and Supply. Burdett Moody had

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[302] Los Angeles Times, December 6 and 9, 1936.
[303] Los Angeles Herald-Express. June 8, 1938. Ironically, on the confirmation of Luching for a second term, the presiding officer of the city council was quoted as saying, "Votes cast with fingers crossed must stand; crossing fingers has no effect." Hollywood Citizen-News, August 19, 1937.
[304] Los Angeles Times, August 30, 1933.

previously been reinstated as business agent after the Haynes group gained control of policies during the Porter Administration.

In general, Shaw provided the support necessary for Scattergood to realize his dream of an adequate supply of cheap public power for Los Angeles delivered by a municipally owned and controlled electrical distribution system covering the whole of Los Angeles. In turn, Scattergood and Haynes paid their price in spoils through irregular purchasing and employment procedures.[305]

The Destruction of the Water and Power Machine

Frank L. Shaw's second term as mayor was terminated after little more than a year by a successful recall movement growing out of grand jury investigation of corrupt practices. As soon as Fletcher Bowron, the candidate of the reforms movement, took office, he demanded the immediate resignation of the city commissioners appointed by the previous administration.[306]

According to reports:

> Shortly after Mayor Bowron was inducted into office, Scattergood called upon him and presented a list of names of those persons he wished to see appointed to the Water and Power Commission.
>
> Mayor Bowron pointed out that as he was Mayor, he would select the commissioners without any help from Scattergood, and Scattergood intimated that he had seen Mayors come and go and that he had had his part in these transactions. They parted on this not. It is typical of the personalities of each.[307]

A struggle between the new mayor and political forces allied with the Department of Water and Power ensued. After several months Bowron finally succeeded in securing the resignation of Commissioners Alfred Lushing and Joseph E. Schumacher and on May 19, 1939, William B. Himrod and Charles G. Haines were appointed to the vacancies. Haines served only a

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[305] Interview with H.A. Van Norman, September 23, 1949.
[306] Los Angeles Herald-Express, September 28, 1938. Politically Boarch had long been associated with the conservative wing of the Republican party, having served as secretary to Governor Richardson before being appointed to a judgeship.
[307] Los Angeles Times, April 14, 1941.

few months, completing the unexpired term. James B. Agnew was appointed to the new term. In the meantime Commissioner A.J. Nullen resigned, and W.H. Fawcett was appointed to complete the triumvirate to give Bowron control of the Department of Water and Power.

Reorganization. The first move of the Bowron commissioners was to institute an efficiency survey of the Department of Water and Power by Ford, Bacon and Davis, Inc., efficiency engineers.[308] Despite disapproval by the council, the survey was completed and its recommendations served as a basis for the destruction of the Scattergood machine.

Upon recommendation that an age limit of sixty-five years should be enforced as the maximum age for departmental employees, Scattergood, sixty-nine years of age, was retired under pressure and granted a contract as a consulting engineer at a salary of $24,000 annually for three years, subject to termination upon ninety days notice by either party.[309] Scattergood was further ordered to limit his activities and services to such matters as were specifically assigned to him by the Water and Power Commission in writing.

In accordance with other recommendations of the efficiency survey, Agnew, Fawcett and Himrod reduced the budget of the business agent's division by $668,886 practically eliminating the power promotional program and causing the dismissal of 200 employees. Activities involving an annual expenditure of $237,000 were transferred to other divisions. Burdett Moody, the business agent was retired under pressure. Publication and distribution of information bulletins distributed to water and power consumers were terminated.

According to "Don Politico" of the Los Angeles Herald-Express:

> It is no secret that Bowron and his three appointees on the commission, the dynamic Fawcett, the conversational Agnew and the hard thinking Himrod, will either remove politics from the department or be themselves removed from public office by their efforts to this end.

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[308] Los Angeles Herald-Express, January 11, 1940, ff.
[309] Ibid., July 9, 1940, ff.

> All political observers know that for many years the Bureau of Power and Light through its many ramifications, its advertising in many small community newspapers and throwaways, and its influence over the thousands of employees, virtually has constituted the balance of power in municipal elections.
>
> The retirement of Burdett Moody, head of the new business bureau, and the demotion-promotion of Scattergood from general manager to consulting engineer with $6,000 a year added to his salary, had been the first step in the drive to get and keep politics and political activities out of the department. (It is an open secret around City Hall that Bowron was told he would go down to political oblivion if he persisted in his present course.)[310]

The Political Contest. The actions of the mayor and his commissioners did not go uncontested. Upon the expiration of the uncompleted term which W.R. Fawcett had been appointed to fill, Mayor Bowron reappointed Fawcett for a new term in office. The city council refused to confirm the appointment, but the city attorney ruled that Fawcett could retain his office until a successor was qualified to serve.[311] In the meantime the two holdover members, Watt Noreland and Franklin D. Howell resigned in protest against Bowron policies.

In October, Bowron appointed Ross St. John McClelland and John H. Richards to the new vacancies. The Richards' nomination was rejected by the city council after the city attorney held that the retention of his position on the Board of Directors of the Metropolitan Water District would disqualify him from membership on the Water and Power Commission.[312] After McClelland had expressed the opinion that "… public operation of an electric utility is not as efficient as private operation," to a council committee, his nomination was also rejected.[313] With three vacancies on the Water and Power Commission and a deadlock with the city council, Mayor Bowron called a conference of fifty civic leaders including a number of the leading public ownership advocates to recommend candidates for appointment to the Water and Power

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[310] July 15, 1940.
[311] Ibid., August 24, 1940.
[312] Los Angeles Examiner, October 12, 1940.
[313] Los Angeles Herald-Express, October 17 and 29, 1940.

Commission.[314] As a result of these conferences Edward A. Dickson, G. Clarke Kelly and Clinton E. Miller were appointed to vacancies and promptly confirmed by the city council.

In the meantime the Water and Power Commission with Fawcett continuing to act on an interim basis, directed E.F. Scattergood to go to Washington, D.C., on departmental business. This action was generally interpreted as an effort to "exile" Scattergood from Los Angeles for the duration of the city election campaign.[315] After Scattergood had been hospitalized in Philadelphia on account of illness, the new commission authorized him to use his own discretion and either remains in the east or return to Los Angeles.

The retirements and close surveillances of the old administrative leadership, the prohibition of political activities by departmental personnel, the death of John R. Haynes together with the fact that the basic objectives of the department had already been realized, meant that the old public ownership forces were no match for Bowron and the popularity of his efforts to clean up municipal corruption. The Citizens Power Committee actively campaigned in the municipal elections, but without the response of former years.

Agnew's program of breaking the political influence of the Department and putting its administration on a "business" basis proceeded quietly. After some controversy, Scattergood's contract was renewed in 1943 at a reduced salary.[316]

Strike. But the tension resulting from suspicion, distrust and conflict between policy makers and the rank and file of Water and Power finally exploded in 1944. Following the resignation of G. Clarke Kelly, who had disagreed with the mayor on some of his policies, Bowron appointed Joseph Jensen as his successor. Jensen, a petroleum geologist, was confirmed

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[314] Los Angeles Examiner, December 5, 1940.
[315] Los Angeles Herald-Express, January 23, 1941.
[316] Los Angeles Examiner, September 16, 1943.

by the city council over protests from the Citizens Power Committee who charged that Jensen was opposed to the development of hydro-electric power.[317]

Ostensibly in demands for wage increases, the maintenance and construction employees went out on strike on February 14, 1944, just ten days after Jensen's appointment.[318] It soon became apparent that the strike was also against the mayor and his commission for their efforts to "sabotage municipal ownership." The commission meeting in extra-ordinary session with the mayor, ordered the employees to return to work immediately or lose their jobs.[319]

The employees replied in a formal statement that,

> …our quarrel is not with the department executives but we are determined to show Mayor Fletcher Bowron and his board that Department of Water and Power employees are highly skilled workers who will not submit to being pushed around to further his political ambitions. The employees are becoming stronger by the hour and we are not worried.[320]

At a meeting with a group of nearly 100 citizens, called to discuss the strike, Bowron charged that the strike was inspired by persons politically opposed to the appointment of Joseph Jensen. Commissioner Edward A. Dickson retorted that he would not have voted for Jensen if he had been a member of the city council.

According to the press report, Dickson,

> …declared that he and Jensen disagreed upon the policy of development of hydro-electric power in the Owens River gorge and for that reason alone he would have opposed his appointment. He declared that he knew of nothing that would reflect upon Jensen's honesty or integrity, but believed that he might unconsciously be influenced against municipal power by a long association in the oil industry with had an interest in selling oil to steam plants producing electricity.[321]

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[317] Los Angeles Daily News, February 4, 1944.
[318] Los Angeles Herald-Express, February 14, 1944.
[319] Los Angeles Daily News, February 14, 1944.
[320] Ibid., February 16, 1944.
[321] Los Angeles Times, February 15, 1944.

The strike spread to include nearly all of the employees of the Bureau of Power and Light. To prevent the crippling of war industries, the United States Army took control of the operations of the Bureau of Power and Light, to end the strike. A final settlement was achieved by granting a blanket raise of ten dollars a month. When Agnew's term expired, Bowron appointed Dr. W. Ballentine Henley to succeed him.[322]

The End of the Struggle. On November 16, 1944, the last storm in the years of controversy between the Bowron Administration and the public ownership advocates occurred over an effort to modify the Scattergood contract to provide for its termination on thirty day notice by a vote of a majority of the Board of Water and Power Commissioners.

Opposing the move, Commissioner Dickson charged:

> I think a thing like this is dastardly and an affront to good citizenship… This subject has been discussed in star chamber sessions among certain board members to get rid of Scattergood or to destroy his value to this department.
>
> This is all part of the program of private power interests to wreck our municipal power enterprise.[323]

By a unanimous vote the city council refused to approve the terms of the new Scattergood contract. Scattergood accepted the contract only after the mayor intervened urging him to accept the contract with the understanding that a new commissioner would be named who, "… might decide to modify some of the terms of the contract which were objectionable to Scattergood."[324] In accord with this understanding the mayor appointed Albert W.Anderson, a former employee of the Department of Water and Power to succeed Joseph Jensen, who resigned. The Scattergood contract was amended to include a notice of ninety days for the cancellation of the contract upon the affirmative action of four of the five commissioners.

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[322] Hollywood Citizen-News, August 1, 1944. Bowron did not reappoint Agnew, because Van Norman had threatened to resign if Agnew was not removed from the board.
[323] Los Angeles Herald-Express, November 17, 1944.
[324] Los Angeles Times, February 14, 1945.

For all practical purposes this brought an end to the seven years of struggle that had been personified by Mayor Fletcher Bowron and the founder and builder of the Bureau of Power and Light, Kera F. Scattergood. But the great battles for municipal ownership of the water and power resources of the community had already been won with the acquisition of a monopoly over electric distribution by the Bureau of Power and Light. No competitors remained to contest every advance of municipal power distribution in the political arena. The department had won its place in the community. As the final indication of this general acceptance of the municipal ownership of water and power, the Department of Water and Power, with the approval of the city council was given authority by charter amendment to issue revenue bonds without the necessity of a popular election for their final approval.[325] The task of the great creators was finished.

The Water and Power Machine

Little did the Citizens Committee of One Hundred realize when they hurled their defiance against any political machine daring to invade the sanctity of the water department that the organ of their creation would one day be castigated as a "sacred Temple" whose "High Priests" dealt in votes.[326] Outside political forces were rarely able to subvert the purposes and activities of the water and power department to selfish ends. However, the champions of the Department of Water and Power frequently dominated the determinations of public policies, electing and defeating public officials according to their stand on the water and power issues of the day.

When the citizens of the community were not in agreement on what should be done, their differences had to be resolved and their consent won. If agreement was not fourth coming, the opposition had to be overcome according to the rules of government incorporated in statutes,

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[325] Infra, pp. 223-25.
[326] Manchester Doddy, Los Angeles Daily News, May 4, 1931.

charters and constitutions. Local officials had to be urged to take the proper action. To accomplish these ends men organized for political action.

The political apparatus developed to wage the battles for the realization of the program of municipal development of water and power resources never adhered to any simple hierarchical pattern. Rather it was an amorphous conglomeration of many elements not always united on ultimate objectives. The constituent elements of this apparatus varied from time to time. Frequently one community of interests supported the programs and objectives of the water bureau, while quite another community of interest fought for the power bureau. Some of the elements of the organization of the water and power political apparatus may be noted in a consideration of the leadership, the citizen organizations, the departmental employees association and the relationship of this apparatus to other organized groups and institutions in the community.

Leadership. The political leadership of the struggles for water and power development came from many diverse sources. Among the most outstanding included city councilmen such as W.H. Workman Martin Betouski, Ralph Griswell and John Baumgartner; mayors Fred Eaton, N.P. Snyder and George E. Cryer; Water and Power Commissioners R.F. Del Valle and John R. Haynes; civil servants William Mulholland, a host of civic leaders including Meyer Lissner, Joseph Scott, Marshall Stimson, L.H. Vallentine, and Watt Moreland. It would be difficult to find a more distinguished group of men than those who devoted their time and energy to develop an adequate water and power supply for the City of Los Angeles.

Of all of these, the most dynamic, consistent and aggressive leaders came from the administrative officials within the water and power department. They know the requirements of the situation and had devoted their lifetime to the solution of the engineering, political and

administrative phases of the problems of water resources development. To neglect the political phase of any problem would have made the engineering and administrative phases frequently unobtainable.

The relationship of the administrator to the formulation of public policies on water development was clearly described by Mulholland in reply to interrogation before a Congressional committee as to whether the city council had considered the matter of the Colorado River water supply. Mulholland replied:

> We have talked about it. I am quite certain of a universal and unanimous ratification of the whole project when I tell them the whole situation. I have told them a part of it. They have always been in a habit of taking my word. I am the authority there—unfortunately for myself, as it makes my task a little hard. But when it is shown to them that there is no other means of existence, then they will ratify the proposition without any doubt.[327]

Citisens' Organizations. During the early struggles for the formulation of basic policies of municipal ownership, the citizens' campaign committees were largely special inter organizational coordinating committees to integrate the efforts of the various organizations campaigning for the bond issue or other special issues presented to the city electorate for final judgment. In the Owens River Aqueduct Bond campaign, the citizens' committee was largely representative of the three civic organizations which assumed the primary responsibility for the campaign, the Los Angeles Chamber of Commerce, the Merchants and Manufactures Association and the Municipal League. Many of the political advertisements and announcements of the aqueduct bond campaign carried the carried the names of these three organizations as sponsors.

In the first power bond campaign which was combined with the harbor bond campaign, the Citizens' Committee was deliberately selected to be representative of the Chamber of

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[327] U.S. Congress. House of Representatives, Committee on Irrigation and Reclamation, Hearings on H.R. 2903, A Bill to Provide For the Protection and Development of the Lower Colorado River Basin. 68th Cong., 1st sess. (Washington; Government Printing Office, 1924), p. 107.

Commerce, the Merchants and Manufactures Association, the Associated Jobbers, the Board of Public Works , the Water Commission, the Harbor Commission and the newly annexed harbor committees of San Pedro and Wilmington.

In the 1914 power bond campaign the executive committee of the Citizens Committee of One Hundred were representatives from the Chamber of Commerce, the Municipal League, the City Club, the Friday Morning Club, and the Builders Exchange.

These citizens' committees were organized entirely for the conduct of a single election campaign, although a continuity of membership was apparent. The citizens' committee as such did not actively participate in the campaigns for the election of city officials. Its constituent organizations and individual members however were very active in municipal politics in general, assuring a continuity of support for water and power developments apart from the necessary popular elections of specific issues.

When a serious division of community opinion became apparent over the question of establishing a municipal electric distributing system, the nature of the political apparatus of the citizens' committee changed. It became an organization of a more independent nature, recruiting individuals to its membership from a broad area of community life.

This transition began in the power bond campaign of 1916. Following the organization of a group known as the vigilance committee to oppose the bond issue, a meeting was called by L.H. Valentine and John D. Kemp to organize a new Citizens Committee of Five Thousand.[328] This emphasis upon members tended to broaden the vase of committee membership beyond the traditional organizations which had formerly sponsored the bond campaigns, while such groups as the Merchants and Manufacturers Association formally entered the campaign opposed to the bond issue. When the 1916 campaign was over, L.H. Valentine announced that the Citizens'

[328] Los Angeles Express, April 11, 1916.

Committee would continue in operation on a permanent basis. While this expression was more a hope than a reality, it was an index of the charging nature of the citizens' committee.

With the intensification of the political struggle over the development of the Colorado River water resources and the conflict with the Los Angeles Gas and Electric Corporation, the citizens' committee became an organization of individuals. While there was some fluidity in membership, from one time to another, the bulk of members gave their continuous support the organization.

By 1923, the citizens' committee was actively participating in each municipal election, campaigning for the election of councilmanic and mayoralty candidates bearing its endorsements. During the period of its greatest effectiveness from 1925 to 1935, the citizens' organization was even organized into special units in each councilmanic district.

Employees' Association. Before 1923, the officials and employees of the Public Service Department took an active part in the political campaign regarding departmental issues on an individual basis. During the bond election of 1913, William Mulholland and his assistant J.B. Lippincott actively campaigned against bond issues relating to the disposal of surplus water in opposition to the declared policy of the Public Service Commission and the city council. In all bond campaigns, Mulholland and Scattergood took a most active part in explaining the issues to the public.

In 1923 the Public Service Commission actively entered the bond campaign, appropriating public moneys for campaign expenditures. However, the California State Supreme Court held that such an expenditure of money was illegal since,

> … the authority claimed by the board of public service commissioners to make such expenditures was not given to them by any expressed provision of the charter, nor can it be implied from any of the terms thereof.[329]

[329] N.W. Mines v. R.F. Del Valle, 201 Cal. 273.

To meet this limitation place upon the Public Service Department to engage in political activities, the departmental employees' association took the responsibility of organizing the bond and special election campaigns. Coupled with the citizens' committee the employees' association formed a political machine with substantial influence. Departmental employees could either operate through the agency of the employees' association for bond issues and other special campaigns or through the citizens' committee for the support of councilmanic or mayoralty candidates. Both became essential elements of what was referred to as the Water and Power or the Scattergood Machine.

To conduct the political campaign, the employees association established a special education committee with one of the departmental executives as its chairman. Subcommittees, composed of the strategically located personnel usually included one of the following: contacts, speakers and meetings; literature, publicity; endorsements; transportation; finance; precinct organization and registration; and office space, clinical help and personnel.[330]

While this provided the apparatus for coordinating the activity of departmental employees, the main initiative for the organization and conduct of the departmental political activities was the function of the business agent's division. Since this division had the general responsibility for sponsoring drives for now business, advertising, relations with commercial establishments and with the consuming public, it became the center of political activity and Burdett Moody, its head, became Scattergood's principal political lieutenant.

The conduct of a bond campaign is well described in an article appearing in Intake, the magazine of the Department of Water and Power Employees' Association.

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[330] "Power and Bond Campaign Opens," Intake VII (October, 1930), p. 1. "Education Committee Appointed," Intake XI (September, 1934), p. 4.

> The Water Bond campaign was thrilling, dramatic and exhilarating. Every known method of educating the voters was brought into play.
>
> For weeks before election all possible agencies for the dissemination of news were utilized. The metropolitan newspapers responded nobly with editorial, cartoons, and unlimited news space. Thousands of inches of news space was given by the several scores of district newspapers.
>
> Speakers for the Water Bonds were sent into every "nook and cranny" of the City, to Service Clubs, improvement organizations, chambers of commerce. The radio was employed on many occasion before the big pre-election night when the Pepsodent Company relinquished its Amos 'N Andy time for the Water Bonds, the Literary Digest turned its 15 minutes over to the committee.
>
> Billboards, streetcar cards, circulars, a talking picture of Mayor Porter—in short everything known to the modern public information was employed to bring the City's message to its people.
>
> The firemen under Chief Scott and Captain Owens, assistant Chief, worked untiringly. Their work prior to May 20 and election day cannot be over estimated.
>
> The Los Angeles Down Town Shopping News, owned and operated by leading retail stores in the City contributed a thousand dollar page and substantial editorial space to the water bonds, the Los Angeles Railway's "asuride" folder gave valuable space to the campaign in three issues.
>
> The Citizens' Water and Power Committee worked untiringly and unceasingly. Joseph Scott, general chairman; Watt Moreland, chairman of the executive committee; E.J. Fleming, chairman of the publicity committee; Bruce Findlay, manager of the campaign committee and each individual member of the committee worked untiringly and eagerly for success for the Bonds.
>
> Employees were on the jobs early and late doing their best to properly inform the public of the vital need of the bonds. Mayor Porter made dozens of personal appearances in the interest of the great issue.[331]

Through a cooperative arrangement with the employees' association of the Fire and Police departments, uniformed firemen and policemen were assigned to precincts throughout the city to solicit support for water and power bonds during their days off duty. In some elections departmental equipment was used. In 1927, the Los Angeles Times reported that "…city employees were busy all day in be-bannered city automobiles electioneering for Propositions 3 and 4, and in bringing voters to the polls."[332]

The participation of water and power employees was largely motivated by the desire to realize the ultimate objectives of the departmental water and power program. It is doubtful if the

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[331] "Victory", Intake VII (June, 1930), pp. 1, 32.
[332] Los Angeles Times, June 8, 1927.

morale of the employees was ever greater during those years of adversity and struggle when efforts beyond the call of duty were willingly volunteered. Political action seemed to be a catalyst for the establishment of the caprit de corps which still survives among employees of the Department of Water and Power.

Relations to Community Groups. During the years of political struggle, the functional and administrative division between water and power was reflected in the general alignment of community support for water and power developments. William Mulholland and the water bureau nearly always had the political support of the more conservative commercial and business organizations of the community. The Chamber of Commerce always supported a water bond and the Los Angeles Times always gave Mulholland favorable press. The only persistent source of opposition to the water bureau came for the Los Angeles Record and other antagonists to the aqueduct and Owens River Valley policies.

On the other hand, the power bureau was consistently opposed by a substantial group of the business community identified with the private electric utility companies. The electric companies maintained political organizations variously known as the Vigilance Committee, the Los Angeles Committee of One Thousand, the People's Economy League, the Los Angeles Protective Association and the Taxpayers Anti-Power Bond Committee and spent money lavishly in opposition to power bond campaigns. In 1924, the Los Angeles Gas and Electric Corporation alone spent $71,094.96 opposing power bonds.[333]

Beginning in 1914, the Los Angeles Times as consistently opposed power bond issues as it supported water bond issues. E.F. Scattergood received the brunt of criticism from the Times which consistently referred to him by the derogative name "Scat". Contrariwise the Los Angeles Record generally supported Scattergood and the power bureau. Among the newspapers the Los

[333] "Admitted Facts," Bulletin Municipal League of Los Angeles, VIXI (August 20, 1931), pp. 1-2.

Angeles Examiner gave its most consistent support to developments of both water and power resources. For many years municipal ownership was one of the principal causes championed by the Hearst newspapers. In general, however, the Herald, the Express, and the Tribune gave the water and power department their support. Manchester Boddy, of the Daily News, opposed many of the power bond issues in the interest of preserving competition in the local electric power market.[334]

Organized labor took only a passive part in most of the political contests involving the Department of Water and Power. Somewhat influenced by the "aqueduct knockers", labor groups were inclined to give their first support to the power bureau. In 1930, when it appeared that Mayor Porter would submit the water and power bonds at separate elections organized labor ware reported to have,

> …hurled a challenge at the power trust… when more than 1,000 workers assembled at the Labor temple, voted unanimously against supporting any water bonds this spring unless power bonds are submitted to the voters at the same time.[335]

Probably the most crucial role performed by any community group in the development of the water and power resources was performed by the Los Angeles Chamber of Commerce. It seemed to constitute a balance of power in the bond elections. Whenever the Chamber of Commerce opposed a bond issue, it failed; and its active endorsement was usually followed by victory at the polls. As a result, the Chamber of Commerce was consulted on almost every step taken by the Department of Water and Power. In all of the major problems in the growth of the department including the Owens River aqueduct, aqueduct power development, the acquisition of the Edison Company distribution system, the Colorado River projects and Owens Valley land purchases, the Chamber of Commerce gave its counsel and support. The Chamber of Commerce

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[334] e.g. Los Angeles Daily News. June 19, 1937.
[335] Los Angeles Record, January 31, 1930.

opposed the department only in its efforts to force the Los Angeles Gas and Electric Corporation to dispose of its electric system.

The necessity of eventual popular approval of almost every development caused departmental officials to keep the citizenry and community leaders properly informed of new plans and proposals. Almost as a regular administrative routine, bond proposals and other issues were submitted to the Chamber of Commerce, the Municipal League, the City Club and other civic organizations prior to their submission to the city council for approval. Few departments of municipal government have kept its constituency so fully informed as the Department of Water and Power.

In Los Angeles water supply and development have and a significance which made them a mater of vital concern to the whole community. As long as major questions of policy were disputed by important segments of the community, political action was an essential tool of administrative action.

> Recommendation: The top organization of the Department be revised substantially in accordance with the proposed organization chart contained in this report.
>
> Ford, Bacon and Davis, 1948

> Comment: Organization should not be regarded as static, rather it is living, and evolutionary rather than revolutionary. Changes should be made from time to time as careful study indicates they are desirable….
>
> Samuel B. Morris, 1949

CHAPTER IV

WATER AND MUNICIPAL ADMINISTRATION

Predecessors of the Department of Water and Power

The Domestic Water Works System. The immediate consequence of the acquisition of the domestic water distribution system from the Los Angeles City Water Company by the City of Los Angeles was the establishment of a new department of city government. To provide the necessary administrative apparatus to control and operate the new municipal enterprise, the city council enacted an ordinance on February 5, 1902 creating a Domestic Water Works System, governed by a Board of Water Commissioners.[336]

The seven members of the original Board of Water Commissioners were appointed by the ordinance to serve until the following election in December, 1902. Thereafter, the ordinance provided that their successors would be elected at each general election for a term of two years. Regular meetings of the Board of Water Commissioners were to be held not oftener than once a week or less than once a month.

General authority over the management, control and administration of the Domestic Water Works System was vested in the Board of Water Commissioners who appointed the Superintendent of Water Works to assume the administrative responsibility of operating the

[336] Los Angeles City, Ordinance 6958 (N.S.).

water works system subject to their control and supervision. An auditor was also appointed by the Water Commissioners to assume responsibility for the management of the financial operations of the water system.

Except for the superintendent, the auditor and all laborers, the Commission was required to make all other appointments on the basis of merit as determined by "such examinations as they may prescribe".[337] All employees of the Los Angeles City Water Company with five years of continuous service were eligible for appointment without further examination for the position which they had previously held. No employee could be dismissed "… except for immoral conduct, insubordination, or unfit to perform the duties of the position to which he had been appointed."[338] All dismissals were subject to review by a board composed of the mayor, city attorney and president of the council.

Pursuant to this ordinance, the Board of Water Commissioners, at their organizational meeting on February 13, 1902, transferred the operating personnel of the Los Angeles City Water Company to civil service status. William Mulholland, superintendent for the private water company was made superintendent of water works in the municipal system. A number of exceptionally capable individuals who served the City of Los Angeles for many years such as Thomas Brooks, assistant superintendent, Fred Fischer, chief mechanical engineer, L.M. Anderson, auditor, and George Read, meter and service superintendent, entered the civil service from the private water company.[339]

The Board of Water Commissioners was granted substantial independence in fiscal affairs. All revenue derived from the water system was allocated to a special account in the city treasury known as the Water Revenue Fund. This fund was to be,

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[337] Loc. cit.
[338] Loc. cit.
[339] Thomas Brooks, Notes on Los Angeles Water Supply (Los Angeles, 1938), unpaginated.

> … used solely and exclusively for the operation, maintenance, extension, betterment and enlargement of the Domestic Waterworks System, and for the purchase of other water properties and systems….[340]

The city council retained the authority to make appropriations from the Water Revenue Fund to the Water Operating Fund and to establish rates for water users.

The Water Department. Instead of requiring the water commissioners to stand for election, Article XVIII of the city charter defining municipal powers regarding water and water rights was amended and revised to provide for the government of the water system by a newly created Board of Water Commissioners which took charge of the Water Department in February, 1903.[341]

The new Board of Water Commissioners was composed of five members, appointed by the mayor, subject to confirmation of the city council for a term of four years. The terms expired biennially to provide a rotation in membership. No more than three members could belong to any one political party.

The only significant innovation made in this charter amendment was to designate the President of the Board of Water and Commissioners as the executive officer of the Water Department and to require him to "…devote so much of his time to the duties of his office as may be necessary for the proper supervision and direction of the business of the Water Department."[342] While the other members of the Commission served without compensation, the president received a salary of $3,000 per annum.

The superintendent of water works still remained the operational executive of the water system. The water overseer or zanjero was transferred to the jurisdiction of the new water

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[340] Los Angeles City, Ordinance 6958 (N.S.).
[341] Los Angeles City, Charter as Adopted January, 1889 and Amended January, 1903 (Los Angeles: Southern California Printing Co., 1903), pp. 56-61.
[342] Ibid., p. 58.

department and made immediately subordinate to the superintendent of water works. The last person to hold the position of zanjero, George D. Pressell, was appointed by the Board of Water Commissioners of February 5, 1903.[343]

Under the 1903 charter amendment, the authority of the Bard of Water Commissioners was significantly expanded in financial matters. The commission fixed the water rates subject to the approval of the city council. The appropriation and expenditure of money from the Water Revenue Fund was vested with the commission. Demands upon those funds were authenticated by the signatures of the president and secretary of the Board of Water Commissioners. The city council, at the time of fixing the general tax levy, might set aside money from the Water Revenue Fund by ordinance to meet the obligations for principal and interest on outstanding bonds. The only other reservation on the fiscal powers of the Board of Water Commissioners was a provision that the board,

> … may fix water rates to produce a revenue sufficient only for the purpose of defraying the necessary expenses of conducting the Water Department, of operating the water works, and of making all current and ordinary extensions, betterments, and repairs, and for no other purposes.[344]

The Bureau of the Los Angeles Aqueduct. Legal requirements and administrative necessities required the development of a new administrative apparatus to construct the Los Angeles Aqueduct. An act of the state legislature authorizing municipal public improvement bonds required that in cities operating under a home rule charter.

> … all the matters and things required in this section to be done and performed by the legislative branch of the municipally shall be done and performed by the Board of Public Works of such city, town or municipality.[345]

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[343] Los Angeles City, Department of Water and Power, Abstract of Partial Proceedings of Board of Water and Power Commissioners… (and its predecessors in interest) and the City Council… relating to the Creation and Development of the Bureau of Power and Light (M.S., 1938), p. 16.
[344] Los Angeles City, Charter (1903), p. 60.
[345] Leslie R. Hewitt, "City Attorney's Opinion Defining the Powers of the Board of Public Works," Appendix G in Los Angeles Aqueduct, First Annual Report (Los Angeles, 1907), pp. 136- 37.

To conform to this provision and avoid any legal complications, a charter amendment was passed at the municipal election of 1906, vesting the expenditure of municipal improvement bonds and the supervision of the work on the aqueduct with the Board of Public Works.[346] On the other hand, the mammoth size of the Aqueduct and its vital importance to future public policies required the utilization of all of the available technical skill in the Water Department and the advice of its policy makers if the project were to be properly executed.

To meet the requirements of this special situation, a Bureau of the Los Angeles Aqueduct was established within the Department of Public Works.[347] William Mulholland, the superintended of the Water Department, was appointed Chief Engineer of the Los Angeles Aqueduct to direct the construction program. In his dual position, Mulholland was able to provide the integration of the Water and Public Works departments in the execution of the common task. J.B. Lippincott, who had earlier served with the United States Reclamation Service and as a consultant to the Water Department, was made the Assistant Chief Engineer, reporting directly to Mulholland. W.B. Mathews, the city attorney who conducted the negotiations for the acquisition of Owens River water rights was appointed attorney for the aqueduct bureau.

Within the Board of Public Works, a special Advisory Committee was created to assume the general supervision over policies and managements of the Bureau of the Los Angeles Aqueduct. The Advisory Committee, composed of three members of the Board of Public Works, the chief engineer, the assistant chief engineer, the attorney for the aqueduct, and the President of the Board of Water Commissioners, met twice a week to consider all matters requiring the action

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[346] Los Angeles City, Charter as adopted January, 1889 and Amended to April, 1913 (Los Angeles: Parker and Stone Co., 1913, p. 87.
[347] Los Angeles City, Ordinance 13.691 (N.B.).

of the Board of Public Works. The minutes of its actions were transmitted to the Board of Public Works and officially adopted at its regular meetings to meet the technical requirements of the law. General Adna R. Chaffee, a member of the Board of Public Works, served as the Chairman of the Advisory Committee and the supervising executive of the aqueduct.[348]

In many ways the Bureau of the Los Angeles Aqueduct was a remarkable organization. The only portion of the aqueduct built by private contractors was eleven miles of canal and 1,405 feet of tunnel. Otherwise the entire project was constructed by the city's own forces under the management of the Bureau of the Los Angeles Aqueduct. The cost of the work done by force amount was twenty per cent less than the cost of contracting under comparable circumstances.[349]

Construction obstacles were overcome with great ingenuity and imagination. A special cement plant was built to manufacture the cement necessary for aqueduct construction after it became evident that it was impossible to obtain competitive bids at reasonable prices from the cement industry. A new cement mix was developed by adding tufa which combined chemically and mechanically to form a superior hydraulic cement.[350] Hydro-electric power was developed by two power plants on Cottonwood and Davidson creeks in Owens Valley to provide nearly 3,000 horse power capacity for the operation of various types of power equipment along the aqueduct.[351] The first caterpillar tractors were experimented with, but proved unsatisfactory because of excessive upkeep costs.[352]

The construction operations on the aqueduct wee divided into ten divisions. Each division engineer had his own headquarters organization and staff. He maintained his own telephone

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[348] Los Angeles City, Board of Public Service Commissioners, Complete Report on Construction of the Los Angeles Aqueduct (Los Angeles: Department of Public Service, 1916), p. 251.
[349] Ibid., p. 259.
[350] Ibid., p. 101.
[351] Ibid., p. 86.
[352] Ibid., p. 97.

exchange, stores and machine shop. In the management of their own division, the division engineers made their own pay rolls, kept their own cost accounts and requisitioned all supplies and equipment from the General Store Department. Each division was an integral administrative unit within itself.[353]

The men recruited to take charge of the various construction and service divisions of the Bureau of Los Angeles Aqueduct were a remarkably capable group. Several later accepted positions with the Public Service Department to assume significant roles in the city's water administration. H.A. Van Norman later became the Chief Engineer and General Manager of the Department of Water and Power. W.W. Hurlbutt became the Chief Engineer and Deputy General Manager in charge of the Bureau of Water Works and Supply. E.F. Scattergood, as Chief Electrical Engineer and General Manager of the Bureau of Power and Light, later created and built the Los Angeles municipal electric system. Roderick NacKay later was in charge of mechanical construction and the irrigation work in San Fernando Valley.

The experience gained in the construction of the aqueduct by its engineers and management has enabled the Department of Water and Power to undertake construction programs by force account whenever favorable bids were not forthcoming from contractors. In the construction of the tunnel through Mono Crater this experience was especially valuable. Tunneling a volcanic crater involved risks which private contractors were not willing to assume, but the Department of Water and Power was able to rely upon the men in its own organization to accomplish the difficult task by force account operations.

Bureau of the Los Angeles Aqueduct Power. In August 1909, nearly a year after the actual construction of the aqueduct had begun, the Advisory Committee of the Bureau of the Los Angeles Aqueduct recommended the creation of the responsibility for power developments along

[353] Ibid., p. 252.

the course of the aqueduct.[354] The plans for power developments had to be properly integrated with the construction of the aqueduct in order that the location and nature of aqueduct construction might conform most advantageously to the power requirements. Likewise plans for the financing and construction of the power plants had to be formulated and the construction completed if Los Angeles were to realize the full benefits of the aqueduct at the earliest possible date.

Accordingly, the Bureau of the Los Angeles Aqueduct Power was formed in September, 1909.[355] E.P Scattergood, the electrical engineer of the aqueduct was made chief electrical engineer of the aqueduct was made chief electrical engineer in charge of the new power developments. William Mulholland as chief engineer of the Bureau of the Los Angeles Aqueduct was attached to the new organization in a "…supervising and directing capacity." Scattergood was also made a member of the Advisory Committee.

A board of consulting engineers including W.F. Durand, O.H. Ensign and Harris J. Ryan was appointed to service in a semi-governmental capacity to assist in the formulation and approval of general plans for the generation and transmission of power from all the proposed power sites; and to pass upon the final priorities for the order of construction, the general character of the power distribution system, and the detailed plans and specifications for all features of the work in connection with the installation of power along the aqueduct and its transmission to Los Angeles.[356]

Within the framework of this administrative institution, the largest municipally owned electrical utility in the United States was conceived. Until funds became available in April, 1912

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[354] Los Angeles City, Department of Water and Power, Abstract of Partial Proceedings, pp. 20-21.
[355] Los Angeles City, Ordinance 18.793 (N.S).
[356] Los Angeles City, Board of Public Service Commissioners, Complete Report on Construction of the Los Angeles Aqueduct. P. 247.

from the $3,500,000 bond issues, general plans for the power plant were formulated with funds appropriated by the city council. After the expenditure of the bond issue for the construction of the initial power generating plant in San Francisquito Canyon, the Bureau of Los Angeles Aqueduct Power was transferred to the Public Service Commission on December 18, 1914 to become the Power Bureau,[357] which had already been provided for by charter amendment in 1911.

The Department of Public Service. In preparation for the administration of both the water and power systems, Article XVIII was again revised and amended in 1911 to provide for a Department of Public Service subject to the supervision and control of a Board of Public Service Commissioners.[358]

The Composition and organization of the Board of Public Service Commissioners adhered closely to the earlier provision relating to the Board of Water Commissioners. The five member board, appointed for overlapping terms of four years, served without compensation except the member elected to serve as president continued to receive a salary of $3,000 per annum to assume the general executive responsibilities of the department.

In establishing the Power Bureau the top organizational pattern of the former Water Department was duplicated so that the Water Bureau and the Power Bureau were coordinate and independent administrative units, each with its own chief engineer and general manager reporting directly to the Board of Public Service Commissioners and its president. Similarly a Power Revenue Fund was created and the same fiscal and other general grants of power and authority were made applicable to the Power Bureau as had previously applied to the Water Department.

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[357] Ibid., Fourteenth Annual Report, For the Year Ending June 30, 1915 (Los Angeles, 1915), p. 55.
[358] Los Angeles City, Charter (1913). Pp. 124-33.

The great amount of Operating autonomy exercised by the two bureaus was probably the most dominant characteristic of the administration of the Department of Public Service. William Nulholland and E.F. Scattergoood who served as the chief engineer and general manager of the Water and Power bureaus respectively were exceptionally strong individuals. Few men have risen to great prominence as community leaders in Los Angeles than these two individuals.

In addition to the force of personalities and the separate charter status, the two bureaus easily orientated themselves toward independent status and action because of the divergent nature of water distribution and power distribution. In the general operation and design of the water supply and the power generation systems a degree of coordination was essential, but once the water has passed through the power generators the two products pursue independent paths to meet different albeit essential needs of the municipal community.

The administrative individuality of the two bureaus was reinforced by the existence of two separate communities of support for the long-range program of water and power developments. [359] No simple stereotyped hierarchical pattern of organization could be imposed upon a program for the fulfillment of the objectives of frequently divergent political force by the expedient of incorporation those within the same department.

While administrative autonomy might have been the source of administrative chaos, the president of the Board of Public Service Commissions and the special counsel for the Department of Public Service provided the instrumentalities to gear the two systems into a pattern of operation unity. R.F. Del Velle and W.S. Mathews, who held these two positions respectively during most of the existence of the Department of Public Service, were able, through the informality of common friendship, advice and counsel, to guide the two bureaus and

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[359] Supra. Pp.178-80.

their chiefs into a generally harmonious relationship without stifling the creativeness of the competitive spirit existing between the two bureaus.

The Department of Water and Power

Since the adoption of the present city charter in 1925, the municipal water and power systems have been administered by the Department of Water and Power. While some aspects of the administrative organization have been determined by charter provisions many other developments have occurred as a part of the gradual evolution of the department.

The Board of Water and Power Commissioners. The city charter vests the ultimate management and control of the Department of Water and Power with a five member citizen board of commissioners.[360] This use of the commission type of administrative organization is consistent both with the historical practice of the predecessors of the Department and the other departments in the Los Angeles municipal government. The commissioners serve a term of five years with one commissioner retiring every year. None of the members of the commission receive any remuneration except an attendance fee of five dollars for each meeting not to exceed fifty dollars for any calendar month. Commissioners are appointed by the mayor subject to confirmation by the city council. The removal of a member of a commission may be initiated by the mayor, subject to the approval of the council.[361]

Subject to the limitations and requirements of the charter and the provisions of the city ordinance not in conflict with charter grants of power to the department, the board of commissioners has the power,

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[360] Los Angeles City, Charter. Annotated. Compiled by Ral L. Chenebro, William H. Heal and Bourke Jones (1948 edition; Los Angeles: Parker & Company, 1948), p70.
[361] Ibid., p. 71.

> …to supervise, control, regulate, and manage the department and to make and enforce all necessary and desirable rules and regulations therefore and for the exercise of the powers conferred upon the department by this charter. [362]

As one of the revenue production departments vested with the general control of its funds, the Board of Water and Power Commissioners has substantial independence in the management of the fiscal affairs of the department. In the management of the Department of Water and Power the board is granted power to construct, operate, maintain, extend the electrical and the water works; regulate and control the use and sale of water and electrical energy; determine water and electrical rates subject to the approval of the city council by ordinance; to sell and dispose of surplus water and electrical energy; to hold and acquire property, "…within or without the city, and within or without the state" necessary and convenient for the operation of the department; to lease and to sell property not in conflict with the beneficial uses of the city; to sue and be sued; and to order the details of administrative organization of the department[363]

In the performance of these board powers, granted to it by the charter, The Board of Water and Power Commissioners functions primarily as a policy-making , conciliatory agency. Its actions take the form of orders or resolutions adopted by majority vote of its members with the ayes and noes recorded at lengths in the official minutes. Apart from the deliberations of the full board in regular or executive sessions, standing committees on advertising and publicity, cost analysis, finance and capital expenditures, personnel and land, are used to consider these special phases in the operation of the department to expedite the deliberation of the Board of Water and Power Commissioners.[364]

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[362] Ibid… pp. 73-74.
[363] Ibid., pp. 184-87.
[364] Los Angeles City, Department of Water and Power, Publicity Division, Water and Power Facts (5th ed.; Los Angeles, 1949), p 3.

In contrast to its predecessors, the president of the Board of Water and Power Commissioners has been striped of administrative functions and serves only as the presiding officer of the board and the titular head of the department. Some presidents, such as Harlen G. Palmer, have found the limitations placed upon the presiding-officer too restricting, and have resigned from the position to be able to take a more active part in the deliberations as an individual commissioner.[365]

As citizens devoting only part-time responsibilities to the affairs of the Department of Water and Power, the members of the board of commissioners can neither undertake the detailed management of affairs of the department nor even assume the initiative on the general formulation of policies. Their function is to serve as a board of directors representing the interests of the citizens of the municipal corporation by the appointment of the top management, and review of the policies and sections of the department from a general perspective, following such policies as they consider wise. In turn they have the responsibility of interpreting the policy of their making and the sets of their agents to the citizen-stockholders.

Individual commissioners such as R.P. Del Valle and John R. Haynes who served twenty and sixteen years respectively on the Board of Water and Power Commissioners or its policies and the management of Los Angeles' water and power systems. Other men of exceptional ability and capacity have been recruited to devote a portion of their time and ability to the water and power problems of the City of Los Angeles as citizen members of the Board of Water ad Power Commissioners or its predecessors.

The commissions have been most productive of creative results when they have conceived of their role as working with the permanent management of the department in a cooperative approach to the problems of the day. Commissions, such as those led by S.C.

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[365] Los Angeles Record. September 14, 1929.

Graham during Mayor Alexander's administration, O.T. Johnson Jr. in the Porter administration, and James B. Agnew of the Bowron administration, which attempted to impose policies, regulations and orders against the advice and recommendations of the managements, have been generally unproductive of positive results in comparison to the administrative and political disturbances which they have created.

The Management. In establishing the general pattern of department organizations for municipal administration, the present city charter requires the board of commissioners to appoint a general manager as the chief administrative officer of the particular department. In the organization of the Department of Water and Power, the charter permits a special exception from this general organizational patter by leaving to the discretion of the Board of Water and Power Commissioners authority:

> …to divide the work of the department into two bureaus, namely a Bureau of Water Works and Supply and a Bureau of Power and Light, and to discontinue such bureaus and consolidate the work thereof. In case such division is made, the board shall have the power to appoint a general manager for the entire department, as elsewhere in the charter provided.[366]

In accordance with this provision, the same general organizational pattern established by the Public Service Commission and separate bureaus for the water and power systems was preserved when the new charter went into effect. William Mulholland and E.F. Scattergood continued as the heads of the respective bureaus.

After Mulholland's retirement in 1928, the Los Angeles Record urged editorially that E.F. Scattergood be placed in general charge of the Department of Water and Power.[367] But the former arrangement was continued temporarily, with the appointment of H.A. Van Norman as Chief Engineer and General Manager of the Bureau of Water Works and Supply.

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[366] Los Angeles City, Charter (1948). P. 185.
[367] November 16, 1928

On March 12, 1929, ostensibly to secure greater efficiency and economy in the operation of the department, the Board of Water and Power Commissioners passed a resolution discontinuing the two bureaus as separate entities and consolidating their operations under Van Norman, who was appointed to head the new unified department as the General Manager and Chief Engineer of the Department of Water and Power.[368] In actual practice the two bureaus were retained under the general direction of the new departmental management, with E.F. Scattergood as head of the power bureaus and Frank. E. Weymouth, formerly chief engineer of the United States Reclamation Service as the head of the water bureau.

Nine months later, the separate bureaus were again reestablished with Van Norman in charge of the Bureaus of Water Works and Supply and Scattergood as the head of the Bureau of Power and Light. Frank E. Weymouth had earlier become the chief engineer of the newly organized Metropolitan Water District of Southern California. To coordinate the management of the two members of the Board of Water and Power Commissioners, including the president, to set in an "advisory" capacity to the mangers of both bureaus. The management and control of the joint divisions was placed under the immediate direction of the Chief Electrical Engineer and General Manager of the Bureau of power and Light, E.F. Scattergood.[369]

The re-establishment of the bureaus marked the opening of the struggle between Mayer Porter and the Scattergood Haynes "machine." On November 25, 1930 after Porter's new appointees gained control of the board, H.A. Van Norman was placed in immediate charge of the joint divisions and on January 13, 1931, he was again made Chief Engineer and General Manager of the department as a whole. When Porter again lost control, the separate bureaus

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[368] "Harvey Arthur Van Norman," Intake VI (April, 1929), p. 1, 4.
[369] "Bureau Re-Established," Intake VII (January, 1930).

were re-established on May 9, 1932. This time Scattergood was placed in charge of the joint divisions.

For many years Scattergood had ambitions of becoming the head of a unified Department of Water and Power, but Van Norman was unwilling to serve in any capacity subordinate to Scattergood.[370] Apparently the Board of Water and Power Commissioners was never prepared to accept Van Norman's resignation as the condition for raising Scatttergood to the administrative head of the department

The system of dual managerships continued until Scattergood's tides of political fortune changed again with the election of Fletcher Bowron as mayor. The Administrative control of the joint divisions was shifted from Scattergood to Van Norman on January 15, 1941,[371] and Van Normand was again placed in charge of the department as a whole on October 19, 1943.[372] After serving only one year as the General Manager and Chief Engineer of the department of Water and Power, Van Norman retired. As his successor, Samuel S. Morris who had previously been the head of the Engineering at Stanford University,[373] was sufficiently detached from previous conflicts and struggles within the department to fully consolidate the position of General Manager and Chief Engineer as a generally accepted feature in the administration of the Department of Water and Power.

Under Morris, the general managership has become the center for the overall coordination and direction of the department. Within the broad latitudes of general administrative policy, the two bureaus enjoy a substantial area of operating autonomy.

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[370] Interview with H.A. Van Norman, September 28, 1949.
[371] "Change in Water Bureau Organization Announced," Intake XVIII (February, 1941), p. 14.
[372] Los Angeles Times. October 20, 1943.
[373] Los Angeles Daily News. September 29, 1944.

The General Manager and Chief Engineer is assisted in the operation of his office by an executive assistant with general staff responsibilities, an Administrative Engineer who is responsible for following state and federal legislative matters, an Executive Assistant who maintains liaison for the general manager with the city council and a staff of stenographic clerks.[374]

A Management Committee has been created to advice and assist the general manager in the establishment of policies and the coordination of procedures relating to the general administrative work of the department. The General Manager and Chief Engineer is the chairman and all the managers of the water and power systems, the heads of the divisions and individuals reporting directly to the general manager are included within the committee. Meetings are held every Monday morning.[375]

While he has been positive in the assumption of his responsibility for the general administration of the department, in his relationship to the Board of Water and Power Commissioners and in conduct of the public relations function of his office, Morris has proceeded carefully and firmly in the necessary adjustments in the administrative re-organization of the department fully aware of the human quality of administration.[376]

The Water System. The administration of the municipal water and power systems, as the two primary functions of the Department of Water and power, continue to be the operational center of all of the administrative activities of the department. While the formal bureau names have generally been dropped from the nomenclature of the department and the terms Water

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[374] Ford, Bacon & Davis, Report, Department of Water and Power, City of Los Angeles, California. Top Organization
(New York, 1948, Vol. 1, p. 43)
[375] Ibid., p. 50.
[376] Los Angeles City, Department of Water and Power, General Manager and Chief Engineer, Comments on the Ford. Bacon & Davis Report of November 26, 1948 (ditto, 1949), 66 pp. passim

System and Power System substituted, the two agencies continue their separate identity, reflecting much of the great tradition that went into their formation and development.

The operation, design, construction and maintenance of the entire water supply and distribution system is the task of the Water System organized under the direction and management of the Chief Engineer of Water Works and Deputy General Manger. To assist in the general management function, the Water System has an Assistant Chief Engineer of Water works who is immediately responsible to the Chief Engineer for the general supervision and management of the ten divisions which comprise the operational and staff unties of the Water System.

The management of the Water System has formalized the coordination of the activities of the various divisions and the participation of division heads in management policies through the device of the Water System's Operations Committee. The Assistant Chief Engineer of Water Works serves as chairman of the committee which includes all of the division heads and any additional individuals designated by the Chief Engineer.[377]

Within the Water System the operational and administrative activities are performed by the following divisions: 1) Distribution Division, 2) Los Angeles Aqueduct Division, 3) Mechanical Engineering Divisions, 4) Sanitary Engineering Division, 5) Electrical Engineering Divisions, 6) Design Division, 7) Field Engineering Divisions, 8) Construction Division 9) Executive Division and 10) Hydrographic Divisions.[378]

The Hydrographic Division is primarily a research agency of essentially a staff nature concerned with the collection of precipitation, stream run-off, water utilization and many types

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[377] Ford, Bacon & Davis, op. cit., p. 52.
[378] Ibid Vol. III., pp. 27-30. Since this chapter was written the Water Construction Division was consolidated with the Field Engineering Division and the Electrical Engineering Division was assigned to the Mechanical Engineering Division.

of related data essential to the operation of the Water System. The Water Executive Division is primarily a management and staff unit charged with the preparation of research reports, the operation of the water system's warehouses, the handling of new business, and the operation of the executive offices. In addition the head of the Water Executive Division serves as a special assistant to the chief engineer of water works on some matters outside the normal jurisdiction of his division.

The Design Division is in charge of the over-all planning and design of the major structures and supervises most of the construction frequently with personnel requisitioned from other divisions. The large construction jobs involving dams, tunnels and other major earthworks are performed by the Field Engineering Division after the designs and plans have been developed. The Mechanical Engineering Division is in charge of all pumping operations including design and construction of the pumping plants.

The operation, maintenance, design and construction of electrical works used in conjunction with the operation of the water system, especially in pumping operations is the function of the Water Electrical Engineering Division. The Distribution Division handles the general operation of the distribution system including some reservoirs, all storage tanks, pressure regulation stations and the operation, maintenance, repair and extension of the water mains and service connections. The Construction Division is responsible for the general structural works of the water system and the construction projects not falling specifically within the jurisdiction of the other divisions.

The Los Angeles Aqueduct Division is organized into two sections. The Southern Section is responsible for the operation, maintenance and repair of the aqueduct below Naiwee reservoir, while the Northern Section with the headquarters in Independence administers the

Owenn Valley and Mono Basin affairs of the department as well as operating the principal water works in the water supply area.

The Sanitary Engineer has the responsibility for maintaining the sanitary quality of the water above the standards established by the United States Public Health Service for domestic water supply.

The Power System. The power generation, transmission and distribution system is managed by the Chief Electrical Engineer and Deputy General Manager with two assistant chief electrical engineers in charge of all of the operations of the Power System.

The management of the Power System is more highly organized than either the water system or departmental management.[379] A special Power Executive Staff, including the Power Resources Section, the Office Engineer, the Power System Budge and Finance Section, the Rate Engineering Section and special consultants, is attached to the Power system executive offices. Each section reports directly to the Chief Electrical Engineer.

The Power System management also uses a multiplicity of committees in its operations. A Power System Operating Committee parallels the organization and function of the Water System operating Committee. IN addition there are the Power System Planning Committee, the Power Resources Group, Distribution Planning Committee, Transmission Group, the Atomic Energy Committee, Fuel Oil Committee, Allocation of Maintenance Work Committee, Apparatus Committee, Condenser Tube Research Committee and others which are used in various phases of management of planning, research and operations in the Power System.[380]

The maintenance and operations of the whole power system is organized in a single division, the Power Operating and Maintenance Division with an Assistant Chief Electrical

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[379] Ibid., Vol. II, pp. 48-50
[380] Ibid., Vol. I, pp. 53-55

Engineer in charge.[381] The division's operations are administered by four separate sections, the Generation Station Operation, Substation Operation, Transmission Communications, and Distribution. The Distribution section in turn is divided into two groups, one for the overhead distribution system and another for the underground distribution system. The overhead group operates though seven district units, each of which is responsible for the construction of new lines and the installation of services and materials on comsumers' premises within the district.

The Design and Construction Division, General Plant Division and the Business Agent's Division are grouped together for administration by a second Assistant Chief Electrical Engineer.[382]

The Design and Construction Division is divided into a large number of research and design sections including Steam Design, Station Design, Distribution and Transmission Design, Hydraulic Design, Civil Engineering and Testing Laboratories. In addition to research operations, the Testing Laboratories are responsible for meter testing and repair. A drafting unit which services all designs operations is a part of the Station Design Section. The Construction Section has charge of all of the major construction projects not performed by the Operation and Maintenance Division.

The General Plant Division is responsible for the operation of the general shops, warehouses and store; and the maintenance and servicing of the transportation and construction equipment required to service the Power System. The Business Agent's Division is responsible for the advertising and promotional activities of the Power System to encourage the sale of electrical energy, the development of a more balanced power consumption load and the expansion of industry in the City of Los Angeles.

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[381] Ibid., Vol. II. pp. 49-56.
[382] Ibid., pp. 57-63.

The Joint Divisions. Certain functions, which require unified operation for the department as a whole or are more efficiently performed by a single administrative unit serving both the water and power systems have created a number of special agencies which are described as the Joint Divisions. Beginning with the centralized administration of fiscal operations a number of other functions including public relation, personnel administration, building services, purchasing, and land administration have been placed under the administration of a joint division.

To simplify the problem of administering the somewhat heterogeneous group of agencies several including the Auditing division, the Accounting Division, the Commercial Division, the Purchasing Division and the Building Operations and Maintenance Division have been placed under the administrative direction of the Controller, the chief finance officer of the department.[383] The heads of the Publicity Division, the Personnel and Efficiency Division and the Land Division report directly to the General Manager and Chief Engineer of the Department of Water and Power.

As the primary fiscal agency of the Department of Water and Power, the Accounting Division keeps the accounts of both water and power systems, keeps employee time records, maintains inventories of property and equipment, prepares the departmental budget, provides statistical data and special financial and accounting reports and operates certain tabulation, stenographic and filing facilities for the department as a whole.[384] The Auditing Division provides a continuing post audit of all accounts and records of the Department relating to

[383] Ibid., Vol I., p. 59.
[384] Ibid., p. 71-72.

revenues, expenses, moneys, securities, properties, and materials and supplies.[385] An annual audit is made by Price, Waterhouse Co., a private firm of certified public accountants.

The Purchasing Division purchases all of the materials and equipment used by the department in all of its activities including the construction, operation and maintenance of the water and power systems. In 1948, the Purchasing Division spent $40,586,707 on 30,544 purchase order.[386]

The Commercial Division provides the meter reading, billing and collection of customer accounts for both the water and power services. The various district and branch offices of the Department of Water and Power are maintained by the Commercial Division, which serves as the primary point of contact between the department and its customers.[387]

The Building Operation and Maintenance Division services the general office buildings including the Second Street Building, the Broadway Building, the Hill Street Building, the Washington Building and the Write and Callender Building which are all owned and operated by the department.[388]

The Publicity Division handles the general public relations and publicity program of the department through press release, motion pictures, speakers, pamphlets, leaflets, and various other communication media to tell the story of water and power in Los Angeles. Together with the Business Agent's Division, it supervises the placement of all departmental advertisements. A magazine, Intake, is published by the Publicity Division for the employees of the department. Mimeographed and duplicated materials including the Executive News Letter and various reports

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[385] Ibid., p. 84.
[386] Ibid., p. 87.
[387] Ibid., pp. 64-65.
[388] Ibid., p. 119.

are prepared and distributed by the Publicity Division. It also maintains newspaper clipping files of all news items about the department and related water and power developments.[389]

The personnel program of the department is administered by the Personnel and Efficiency Division which is responsible for the processing of requisitions for personnel through the city Civil Services Commission, the supervision and conduct of in-service and apprentice training programs, handling of employee grievances, the conduct of accident prevention programs, the administration of claims made under the California Workmen's Compensation laws, and the examination of the physical condition and health of employees. The administration of the classification and work evaluation plan has temporarily been removed from the Personnel and Efficiency Division and the Salary Standards Section made directly responsible to the general manager.[390]

After numerous experiences as a joint division and separate units in the water and power systems, the land operations were recently united in a joint Land Division. General property management, the keeping of land records, appraisals, and the escrow work are handles for the Department of Water and power as a whole. Leasing Operations in Owens Valley, however, are conducted by the Los Angeles Aqueduct Division of the Water System.[391]

The Library and the Legal Division, which might be classified as joint divisions, enjoy a rather unique status of being both a part of the administrative organization of the Department of Water and Power and also entirely separate departments of city government. The departmental library is a branch of the Los Angeles Public Library and the Legal Division is part of is part of the city attorney's staff.

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[389] Ibid., p. 91.
[390] Ibid., pp. 95-110.
[391] Ibid., p. 123.

The balance between the joint division and the water and power system is probably the most perplexing administrative problem of the Department of Water and Power. Administrative analysts seem to favor the greater reliance upon the joint division method to eliminate the duplication of equipment, facilities, personnel and construction forces. But the Operating efficiency and the traditions of the two systems will have to be carefully weighed against any claims of greater economy. The task of coordinating the joint divisions with the activities of the primary operational units will require great administrative ingenuity for many years to come.

The Relations of the Water and Power Administration to Los Angeles City Government

The Determination of General Policies. While the Board of Water and Power Commissioners is granted very extensive authority in the government of the Department of Water and Power, the general instrumentalities of city government possess significant sources of authority for the determination of general policies relating to water and power administration. The city council as the general governing body of the City of Los Angeles has general authority to enact ordinances governing water and power matters subject only to the specific requirements of the city charter and general state law. The mayor as the chief executive officer of the city has the general power of appointment of members to the Board of Water and Power Commissioners subject to the approval of the council.

The general relationship of the Department of Water and Power to city politics has been described in some detail elsewhere.[392] In general the city council has never asserted a positive role in the formation of policies relating to water and power apart from the recommendations initiated by the Board of Water and power Commissioners. Mayors George A. Alexander and John C. Porter succeeded in gaining only temporary control of the board of commissioners, through their power of appointment, to pursue policies in opposition to shoe recommended by

[392] Supre., Chapter III.

the management of the water and power bureaus. Mayor George E. Cryer unquestionably made the greatest contribution of any Los Angeles mayor to the development of the program of the Department of Water and Power; but his contribution was in providing political leadership for the polices formulated within the water and power department.

However, with more than a decade in office, the present mayor, Fletcher Bowron, has exerted a strong influence on the policies and activities of the Department of Water and Power. Dedicated to a policy of destroying the political influence of the Department of Water and Power, and imposing a business type administration, Bowron appointed to the Board of Water and Power Commissioners, men who relied upon their own initiative or upon directions from the mayor's office in determining the policies for the Department of Water and Power, rather than the permanent administrative officials of the Department. Deputy Mayor Orville R. Caldwell has maintained active liaison with the Department of Water and Power, participating in important policy deliberations and keeping the members of the Board of Water and Power Commissioners informed of the of mayor's desires on policies relating to the water and power systems.[393]

Apart from the roles of the mayor and council in determining general policies and appointing the members of the Board of Water and Power Commissioners, the specific patter of relations between the Department of Water and Power and the municipal administration are best revealed in the areas of finance and personnel administration.

Finance Administration. As a public utility with a source of revenue apart from general municipal taxation, the Department of Water and Power enjoys great independence in its fiscal affairs.

[393] Interview with H.A. Van Norman, September 28, 1949.

The rates for water and electrical energy and the charges for services and connections are fixed biennially by the Board of Water and Power Commissioners subject to the approval of the council by ordinance. The only qualifications imposed on the rate making power of the Board of Water and Power Commissioners by the charter is that:

> … such rates shall be of uniform operation, as nearly as may be, and shall be fair and reasonable, taking into consideration, among other things, the nature of the use, the quantity supplied and the value of the services; provided, further, that the rates inside the city may be less, but not greater than the rates outside the city for the same similar uses.[394]

Since the trend of electric rates has been consistently downward, the city council ha never seriously questioned the rates established by the commission. However, the general upward trend of water rates to meet heavy capital expenditures for land purchases in Owens Valley and the Mon extension have met some opposition. In 1925, Mayor Cryer vetoed a water rate increase, but the council promptly passed the increase over his veto.[395] When a rate increase of twenty-eight per cent was recommended in 1937, the council refused its approval until the increase was compromised at fifteen per cent.[396]

More recently, when the board acted to reduce the rates principally for large water consumers using more than 600,000 cubic feet of water monthly, the city council refused to grant the decrease to the larger consumers and approved only those made in the domestic consumers' rates.[397] Two years later the decreases for the larger consumers were also approved in a new rater schedule. Other than those occasional differences, the recommendations of the Water and Power Commission have uniformly been approved.

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[394] Los Angeles City, Charter (1948), p. 184.
[395] Los Angeles Herald. October 19 and 26, 1925
[396] Los Angeles Herald-Express, October 5, 1937, ff.
[397] Ibid., December 4, 1941.

The budgetary authority of the Department of Water and Power is exceptionally broad, and free from general municipal control. The city charter provides that the Board of Water and power Commissioners adopt an annual departmental budge, make the necessary appropriation to cover the anticipated expenditures and provide for an "inappropriate balance" to meet special contingencies during the ensuing fiscal year. Except to file a copy of the budget and each balance with the mayor and the city controller, no other action is required to give the appropriation legal effect. The water and power budget is submitted to the council only for its information.[398]

After the budget has been adopted, transfers of funds from one budget item to another may be made by the Board of Water and Power Commissioners for sums not exceeding one thousand dollars. The approval of the mayor is required to transfer items in excess of that amount.[399]

For capital expenditure the Board of Water and Power Commissioners has special charter authorization to establish a three year budget to enable the department to incur financial obligation and make expenditures for the full three-year period provided that adequate funds are available from current revenue or the sale of bonds and that the three year capital improvement budget not duplicate the function of the annual budget.[400]

All of the revenue received by the water and power systems is deposited in the city treasury to the credit of the "water revenue fund" and the "power revenue fund" respectively. The money deposited in each of these funds is kept separate from the general funds of the city

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[398] Los Angeles City, Charter (1948). pp. 284-37
[399] Ibid… p. 291.
[400] Ibid… pp. 195-198.

and may be drawn upon only by the properly authenticated demands bearing the signature of the chief accounting employee of the department.[401]

At the end of each fiscal year surplus money remaining in the water and power revenue funds may not be transferred to the city's general reserve fund unless the council directs the transfer by ordinance, with the consent of the Board of Water and Power Commissioners.[402] In recent years as much as $4,260,000 from the revenues of the Department of Water and Power have been contributed annually to the general operation of the Los Angeles city government. Within the provisions of its budgets the Board of Water and Power Commissioners may appropriate money subject only to the broad general purposes enumerated in the city charter. Certain procedural requirements for purchases and contracts must also be adhered to.

While the city controller is vested with extensive authority to install and supervise the accounting system of each municipal office, to audit expenditures and generally to supervise municipal finance administration, no serious restrictions have been imposed upon the efficiency of the Department of Water and Power.[403] The department has evolved its own accounting system following the general practice of other utilities in the United States.

The city controller exercises a check upon all departmental expenditures in an audit preliminary to the final authorization of the demand upon the city treasury. In addition, the Department of Water and Power maintains its own auditing section to make a continuing audit of expenditures and secures the services of Price, Waterhouse Co. to make its annual audits

The Department of Water and Power is specifically exempt from the charter requirement that all purchases of material, supplies and equipment be made though the general Purchasing Agent of the city. As a result the department maintains its own purchasing division. Purchases

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[401] Ibid… p. 187.
[402] Ibid., p. 303.
[403] Ibid., pp. 60-62.

of less than $2,000 may be made by the authority of the department's purchasing agent. In excess of this sum, procedure of advertising, bids, and formal approval by the board of commissioners must be adhered to. Contracts requiring a performance on the parts of a city department for a period of more than three years require the approval of the council.[404]

The Board of Water and Power Commissioners has general authority to sell personal property no longer required for the operation of the department. Lands used for agricultural and other purposes which do not conflict with the department's beneficial uses may be leased by the board for a term not exceeding five years. Otherwise real property cannot be sold or leased by action of the board unless authorized by an ordinance of the council.[405]

Since 1947, the power of the Board of Water and Power Commissioners to borrow money has been greatly simplified by the adoption of a charter amendment permitting the use of general revenue bonds in place of general obligation bonds.[406] In contrast to general obligation bonds which are secured by the full faith ad credit of the city booked by its general power of taxation, the general revenue bonds constitute indebtedness against only the Department of Water and Power payable from future revenues.

The approval of the bond issue by a two-thirds majority of the municipal voters is required under state law for the creation of a general bonded indebtedness by a municipality. Under the new charter provision, a bonded indebtedness may be created with the adoption of a resolution by the Board of Water and Power Commissioners authorizing the issuances of general revenue bonds with a statement of purpose, amount, and terms of the bond issue. Following the adoption of the resolution by the Board of Water and Power Commissioners, the council or the

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[404] Ibid., pp. 304-10.
[405] Ibid., p. 220.
[406] Ibid., pp. 206-20

mayor may disapprove of the resolution within a specified period of not less than fifteen days. The mayor's disapproval can be overcome by approval of two-thirds of the whole council.

If the resolution is not disapproved by the mayor or the council within the specified time limit the board must cause the resolution to be published in a newspaper of general circulation in the City of Los Angeles. Within thirty days following publication the resolution is subject to referendary petition. If no referendary petition is submitted or qualified under the general provisions of the charter, the resolution of the board authorizing the bond issue is in legal effect. If the Board of Water and Power Commissioners in its resolution requests the submission of the issue to the voters of the city, the council is required to proceed with the authorization of the election.

Personnel Administration. In contrast to the great independence enjoyed by the Department of Water and Power in its fiscal affairs, the general municipal administration of the civil service has imposed an extremely rigid pattern of personnel administration upon all city departments.

The Board of Civil Service Commissioners is vested with the general authority for the administration of the merit system and related civil service programs for all of the administrative departments of Los Angeles city government.[407] Except for the city attorney and the school department the only positions specifically exempt from civil service requirements are political appointees serving on the various boards and commissions and the top administrative personnel in some departments.

For all other positions employment in the civil service is made subject to open competitive examination by the Civil Service Commission. From its list of eligible candidates the Civil Service Commission certifies the three who stand highest on the register for any

[407] Ibid., pp. 88-113

position to be filled in one of the municipal departments. If several positions are to be filled, no more than two names over and above the positions to be filled may be certified. Promotional examinations are subject to much the same requirements.

In the case of unskilled laborers, their names are entered upon the register in the order of their application, if they successfully pass the requirements of a physical examination. A position calling for an unskilled laborer is filled by the first name on the register and the employing agency is given no choice among the applicants

As a part of its program to establish a general merit system, the Civil Service Commission is required by the city charter to classify all positions in the municipal service so that each class should contain positions with the same qualifications, the same test of fitness and the same schedule of compensation. A Salary Standardization Committee was created by the charter to grade and regrade the salaries of all classes of employees in the classified civil service"…to the end that like salaries shall be paid for like duties."[408]

The conduct of promotional examinations follows the general examination procedure o matters involving the removal, discharge or suspension of a civil service employee, the Board of Civil Service Commissioners has extensive authority to investigate and review the disciplinary action. Except in the case of dismissals required because of lack of funds the action of the Board of Civil Service Commissioners is final and conclusive.

General exemptions from the charter provisions relating to civil service can be authorized by the Board of Civil Service Commissioners upon the request of the head of the department, subject to approval by the council, for the first and second deputies in any department, unskilled laborer, persons employed for the construction of public works and positions paying less than

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[408] Ibid., p. 107.

fifty dollars per month. In addition temporary appointments for a period not to exceed 120 days may be made in case of an emergency.

The problem of operating under the regulations of a rigid civil service system can be noted in the construction of the Mono Basin projects.[409] Since this project was constructed by force accounts with personnel employed on the city payroll, the municipal Civil Service Commission could assert its jurisdiction over all phases of personnel operations granted to it by the charter.

At the Inception of the project, eligibility lists were in very poor condition because of the lack of funds and staff caused by serious retrenchment in the budget of Civil Service Commission. This made it necessary to make temporary appointments from the very beginning of the construction program.

After temporary appointees had been trained for their work and integrated into the organization, they were required to pass the civil service examination to remain on the job. In many instances H.A. Van Norman, Chief Engineer and General Manager of the Bureau of Water Works and Supply reported that,

> … the men who had been appointed temporarily did not show up on the eligibility lists and could not be retained on the project. Ti was necessary to institute a new training program and the work was carried on with inexperienced men until they had gained sufficient training to be proficient on their job.[410]

In instances of specialized work, such as hard rock tunneling, which previously had never appeared on civil service roles, new classifications had to be crated and new examinations formulated requiring the expenditure of considerable time by construction executives for conferences with civil service representatives, examiners and research workers to decide upon

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[409] H.A. Van Norman, "The Limitations of Civil Service," Journal of the American Water Works Association. XXXIII (September, 1941) 1596-1605.
[410] Ibid., p. 1599.

the nature and type of examinations. After the examination questions had been designed men were taken off the project to take an examination to hold a job that they were already performing.

For other specialized skills not previously employed in the municipal civil service, the Civil Service Commission tired to improvise with the use of eligibility lists for related types of work. In hard rock work, steel sharpeners were required to service drilling equipment. This position had never existed as a separate classification so the Civil Service Commission decided that a qualified steel sharpener could be found on the eligibility list for blacksmiths. Of the twenty-four men reporting from the eligibility list for employment, five were sent to the project. Of these five, four were discharged within two days and one remained on the job until a competent steel sharpener could be secured under a temporary appointment to relieve him. In the meantime, construction work was being delayed for lack of the requisite skill to perform this essential task.

The whole conceptual framework of classification and the concomitant specialization were contrary to the requirements of construction work where "…numerous conditions operate to change the method of attach, type of equipment and personnel."[411] Under these circumstances the "jack of all trades" with general skills on construction work is essential to efficient operations, but such workers are not produced by specialized examinations for isolated classifications.

The rigidity of the Los Angeles city civil service system is one of the principal factors limiting the practice of construction by force account in the Department of Water and Power. Ironically in the case of the Mono Basin project, the refusal of the Civil Service Commission to exempt the construction work from civil service regulations made it possible for the Shaw

[411] Ibid., p. 1601.

administration to force incompetent spoilsman upon the water bureau under the pretext of enforce the merit system.[412]

While the problems of operating a construction force under civil service regulation is especially difficult, the same regulations have their adverse impact upon the efficiency of normal operating functions. An emphasis upon experience over youth, eliminates the young talent desired for future promotional opportunities in the department.

The classification of the employees with common skills etc., common to each department in one service-wide class has resulted in complicated personnel problems. During the 1930's, the eligibility lists were filed with street design engineers discharged from the Department of Public Works. Due to the preferred position of those discharged engineers, it was necessary for the water bureau to employ street designers to build hydraulic structures.[413]

While retrenchment programs severely restrict the activity of the Civil Service Commission, the Department of Water and Power continues to develop and expand with increasing population and services. Since the operations of the Department of Water and Power cannot be halted by the failure of the Civil Service Commission to hold the necessary promotional examinations, "The water utility is forced to make the necessary promotions physically-without being able to properly classify those earning the promotions."[414] During one eleven year period no new examinations were given for Junior Engineer. The result was assignment out of classification to try to provide some equity to those assuming greater responsibilities.

When James B. Agnew assumed the leadership of the Board of Water and power Commissioners, he seized upon the practice of assigning personnel to "out of classifications"

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[412] Interview with H.A. Van Norman, September 28, 1949.
[413] H.A. Van Norman, op.cit., p. 1605.
[414] Loc.cit.

responsibilities as one of the major points in his program to reform the Department of Water and Power. Agnew listed in his reform program the task of

> …killing the practice of "demoting" employees who won't play ball with the management "big shots", by assigning them "out of classification" to duties for which they were not originally employed.[415]

After the matter had been referred to the city attorney, he ruled that city employees working in positions not covered by their civil service classification were drawing pay illegally and might be dismissed from their positions and even be sued by the city to collect back pay. Departmental managers responsible for assigning civil service employees out of classification not covered by the examination taken to qualify them for the position might be subject to appropriate discipline.[416]

Partly as a result of the chaos created by this opinion and partly to establish a more equitable salary standardization system as provided under the city charter, an outside firm of personnel administration consultants, J.L. Jacobs, was employed to develop a classification system for the entire classified civil service of the City of Los Angeles including the Department of Water and Power. This new classification scheme known as the Jacobs Plan is now in force within the Department of Water and Power.

The Jacobs Plan is an exceptionally refined and detailed classification scheme.

> The six basic positions position requirements have a combined total of twenty-four subdivisions. Some of these subdivisions have ten degrees of importance and most of them have five or six degrees all of which must be evaluated.[417]

The plan is apparently conceived on the theory that an individual "price tag" should be placed on every individual position. Each position is described on a Duty Description Record. To ensure that "like salaries shall be paid for like duties", the Jacobs Plan required that all

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[415] Los Angeles Daily News. November 25, 1941.
[416] Ibid., March 20, 1942.
[417] Ford, Bacon & Davis, op. cit. Vol. I., p. 115.

departmental employees must work under the Duty Description Record covering the job being done. If an employee is temporarily used on a job requiring greater skill and a higher rate of pay than his regular position, he will be compensated at the different tares of pay during any payroll period.[418] This great emphasis upon position status and rates of pay rather than the job to be done has resulted in a situation in which many employees have turned their attention to becoming position evaluation and classification experts in their own interest.[419]

The adverse impact of this situation on the efficiency of the departmental operations and the morals of the employees is disheartening to many members of the department who struggled with Mulholland and Scattergood to build the greatest municipally owned utility in the United States. While the Department of Water and Power has attained an enviable position among the departments of Los Angeles' municipal administration for its independence and initiative of action, a rigid civil service system endangers the efficiency and morale of the entire organization.

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[418] Ibid., pp. 73-74.
[419] Ibid., p. 117.

> The city is one of the great landlords of the country and it has on it hands an agrarian problem. It faces the fact that landlords are seldom popular. But it had to buy water bearing lands to safeguard the City's water supply. Whatever it does in the valley cannot and must not jeopardize this supply. The central fact of water and its control dominate the situation.
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> C.A. Dykstra, 1928

CHAPTER V

ADMINSTRATION OF THE WATER SUPPLY AREAS

Since a municipality, as a water consuming area, requires both a dependable and sanitary water supply, extensive extra-territorial operations and commitments in the water supply area create a special administrative problem unique in municipal administration.

With the expansion of urban demands, the requirements of the city frequently come into direct conflict with the agricultural uses in the upper watershed areas, especially where the riparian doctrine of water law is recognized. In meeting the requirements for this growing demand, individual, group and community interests often come in conflict for the control of inadequate water supply. The usual recourse is to "the favorite indoor sport of California, the lawsuit,"[420] which never produces an increased quantity of water.

The exclusive nature of the pueblo right and the annexation of virtually al of San Fernando Valley obviated any serious possibility of conflict over the water supply of the Los Angeles River watershed. No other water right could successfully challenge the priority of pueblo right to vest an adverse interest in any other water user and create a serious area of conflict. By annexing the vital center for the Los Angeles River basin to become an integral part of the City of Los Angeles, the city government gained full control over water distribution,

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[420] California, Department of Public Works, Division of Engineering and Irrigation, Santa Ana Investigation. Flood Control and Conservation Bulletin No. 19, (Sacramento, 1926) p. 32.

sewage disposal and any possible health hazard or source of pollution that might endanger the safety of the local water supply.

In the Owens Valley, the city was confronted with an altogether different situation. A small but sturdy grazing and irrigated agriculture had been developed by early immigrants to California. The conservative and isolated individualism of Owens Valley had little in common with the boisterousness of its self-conscious neighbor to the southwest. Located in the distant Inyo Country, Owens Valley farmers could not realize a substantial unearned increment through the subdivision of their land after the exhaustion of their irrigation water.

Inauspicious Beginnings

Following the passage of the national Reclamation Act in 1902, the Reclamation Service inaugurated an investigation of the feasibility of developing a reclamation project to water the irrigable lands in Owens Valley. Preliminary to the surveys, which began in June, 1903, the surplus water of the Owens River was filled upon by the Reclamation service and the Secretary of Interior withdrew the Federal public lands from entry as authorized by the Act.[421]

During the following two years, the Reclamation Service established gauging stations to measure the flow of the Owens River and made some preliminary surveys of reservoir sites and local conditions affecting the development of a reclamation project. When informed b Mulholland in 1904 of the plant to take Owens River water across the desert to Los Angeles for a municipal water supply, J.B. Lippincott, who had long been associated with the Los Angeles water problem, recommended that the Reclamation Service suspend any further surveys or consideration of the reclamation project and cooperate with the City of Los Angeles' program. On the assumption that the spirit of the Reclamation Act sought to afford the greatest good to the

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[421] U.S. Department of Interior, Reclamation Service, Second Annual Report 1902-03. 58th Cong., 2d scss., H. Doc. 44 (Washington: Government Printing Office, 1904), pp. 95-96.

greatest number, Lippincott felt that, "…The Owens River water would fulfill a greater mission in Los Angeles than if tit were to be spread over acres of desert land that ordinarily would have come under its influence."[422]

During the months of secret negotiations, late in 1904 and early in 1905, Lippincott secured the approval of his responsible superiors in Washington to Los Angeles program in Owens Valley and arranged for the employment of three government surveyors by the city to survey the route of the aqueduct. At the same time Eaton was acquiring options on water bearing property in Owens Valley on the pretext that he was going into the cattle business.[423]

When the news of the development which had silently taken place in their midst finally came to the people of Owens Valley, the resented the deceptions that had accompanied the Eaton purchase and the active participation of J.B. Lippincott, a Federal government official, on behalf of the City of Los Angeles. When it became known that Lippincott was acting as a consulting engineer for the Los Angeles Water Department while he was making recommendations for Federal policies, resentment mounted to indignation.[424] Above all, the abandonment of consideration of the reclamation project crushed the great hopes and aspiration of the Inyoites for their "Undiscovered California"[425]

Maintenance of the Status Quo, 1905-1922

Original Plans. Through the Eaton purchase and options, Los Angeles acquired all of the lands fronting on the Owens River from the intake to Owens Lake a distance of over forty miles. From the water rights acquired with these purchases and the appropriation of surplus water, it

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[422] Los Angeles Times, July 29, 1905
[423] Loc.cit.
[424] W.A. Chalfant, The Story of Inyo (rev. ed.; n.p., 1933), pp. 342-46.
[425] William E. Smythe, The Conquest of Arid America (New York: Harper & Brothers Publishers, 1900), pp 146-47. Writing prior to the acquisition of Owens River water supply for Los Angeles, Smythe considered the numerous valleys along the eastern slope of Sierra Nevada as representing the greatest potential area of development in California.

was assumed that Los Angeles had water rights to flow of 20,000 miner's inches. Based on the apparent use of its predecessors, the city officials estimated that they had acquired water rights to about 15,000 miner's inches during the irrigating season, which were expected to yield about 11,000 miner's inches of normal continuous flow of irrigation water for diversion into the aqueduct. By virtue of its riparian rights, the city could divert in addition the winter flow, not put to beneficial use, and the surplus flood waters which normally discharged into Owens Lake.[426]

The purchase had adhered to the plan of taking lands only in the southern part of the valley which had not been extensively developed by irrigation and leaving the lands near the towns of Bishop and Big Pine free to develop with creek, upper river and underground water rights. The only land purchased by the city in the northern half of the valley were the lower non-agricultural lands saturated by rising artesian water, which might be pumped to obtain a supplementary water supply.[427]

While the irrigated agriculture in Owens Valley had expanded from 41,026 acres to 65,163 acres in the decade between 1899 and 1909,[428] the relationship between the Owens Valley ranchers and the City of Los Angeles continued on an informal basis of letting well enough alone without any effort to arrive at plans which would determine the future pattern of the development of local land and water resources.

Early Negotiations. Early in 1910 the first conference between representatives of the Owens valley people and the City of Los Angeles was held to consider an agreement upon future plans for the valley. Surveys and negotiations delayed the formulation of a tentative agreement

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[426] Los Angeles City, Board of Public Works, First Annual Report of the Chief Engineer of the Los Angeles Aqueduct …, (Los Angeles, 1907), p. 43.
[427] Los Angeles City, Board of Water and Power Commissioners, Complete Report on Construction of the Los Angeles Aqueduct (Los Angeles, 1916), p. 273.
[428] Loc. cit.

until May, 1913. The city indicated its willingness to permit the irrigation of all irrigable lands then covered by irrigation systems providing the valley people would agree to cooperate with the city and limit irrigation to established bounds.[429]

Before this agreement was approved, Henry A. Hart, formerly a ember of the Los Angeles Aqueduct Investigating Board, brought legal action to enjoin the City of Los Angeles from entering into an agreement with the Owens Valley Defense Association on the grounds that Los Angeles would be deprived of valuable water rights and that the agricultural development would lead to the pollution of the aqueduct water supply.[430]

As a result of the Hart suit, the city representatives insisted upon an exact measurement at the city's expense of the ditch diversions. The Owens Valley people did not agree to the measurements until in 1917. Negotiations were again resumed in 1919 after many months of stream and canal measurement. They valley representatives objected to the city measurements and demanded the opportunity to make their own. These measurements were carried on through 1919 and 1920. Finally in 1921 an agreement satisfactory to a majority of the Owens Valley representatives and the city of Los Angeles was negotiated.[431]

The Agreement of 1921. The agreement required the City of Los Angeles to construct a dam in Long Valley and store the waters of the Owen River and Crooked Creek to provide a regulated flow for city power generation and local irrigation.[432] The construction of the damn was to begin within twelve months after the approval of the agreement and be completed within

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[429] Los Angeles City, Board of Public Service Commissioners, Reply to the Proposal and Accompanying Documents Dated November 29, 1924. Submitted by W.W. Watterson to the Los Angeles Clearing House Association (Los Angeles, 1925), pp. 22-23. Hereafter cited as Reply to Watterson. This document has the value of including both the statements of W.W. Watterson and the reply of the Los Angeles Board of Public Service Commissioners. Relevant documents are included in an appendix.
[430] Los Angeles Record, July 3, 1913. Henry A. Hart v. City of Los Angeles, Los Angeles County Superior Court No. B2566.
[431] Los Angeles City, Board of Public Service Commissioners, Reply to Watterson, pp. 23-25.
[432] Ibid., p. 104, ff.

three years. Below the gorge, the city was to construct an additional reservoir in the Birchin Canyon of sufficient size and capacity to regulate the flow from the power discharge. By the terms of the agreement, the city agreed to provide a regulated flow at the Owens River and Rock Creek of 374 cubic feet per second for the six-month irrigation period beginning April 1, of each year and apportioned as follows for each of the months of the irrigation season:

April—299	second feet	July—463	second feet
May—308	" "	August—412	" "
June—463	" "	September—999	" "

If the storage in the Long Valley reservoir were less than 30,000 acre feet on April 1, an emergency condition would be deemed to exist and special machinery invoked to provide for the allocation of the water proportionate to the necessary reduction in the rate or flow.

Power Complications. In the meantime the Public Service Commission was proceeding with plans for the development of Mono Basin water and power resources. In 1915, application was made with the Federal Power Commission for power permits and rights of way on public land for storage and diversion reservoirs, power plant and dam sites in the Owens gorge. Construction work on the Owens gorge developments was started late in the same year.[433]

A half section of school lands which had been conveyed into private ownership was located in the middle of the gorge at the point of the greatest power drop. In the course of negotiations with the City of Los Angeles, the Mono Power Company, which operated a small generator to supply hydro-electric power to nearby mines sold the site to the Southern Sierra

[433]E.A. Porter, Bibliography in Connection With the Construction and Operation of the Los Angeles Aqueduct System Including the Mono Basin Project (NS, 1945), p. 42. Hereafter cited as Bibliography. The title of this report is very misleading. While the first few pages include a bibliography in the proper sense of the word, the bulk of the manuscript is a detailed chronological report of relations with the Owens-Mono areas made by a former head of the Land Division to acquaint himself with the background of actions prior to his appointment.

Power Company in February, 1920. Legal action to condemn the property was quashed by the United States Circuit Court of Appeals in November, 1922.[434]

Conkling Plan. In March, 1920, the City of Los Angeles contracted with the Bureau of Reclamation to study the feasibility of a joint project assuring the City of 400 second feet from Haiwee reservoir, permitting the city to develop all of the power resources and at the same time provide for the irrigation of Owens Valley lands as a federal reclamation project.

Late in 1921, Harold Conkling, a Reclamation Service engineer, reported favorably upon the combined project contemplating a tunnel through Mono Craters, the diversion of Rush and Leevining creeks, a 340,000 acre feet reservoir behind a 150 foot dam at Long Valley, a small reservoir below the gorge to smooth out the diurnal flow through the power plans and a 100,000 acre feet reservoir in the Fish Slough to capture the winter power discharge.[435] Beyond meeting the 400 second feet requirements of the aqueduct it was estimated that the surplus water would provide for the irrigation of 50,000 acres. The total cost for the project was set at $8,000,000 of which $2,000,000 could be charged to reclamation for the land and the balance to the City of Los Angels for the power generation and water supply.[436]

Stalemate. Pursuant to its agreement with the Owens Valley irrigators, Los Angeles began preliminary work on the 100 foot dam with a storage capacity of 68,000 acre feet. A group of valley residents headed by W.W. Watterson, brought suit seeking an injunction to prevent the construction of the 100 foot dam as an interference with their rights as riparian owners, indicating that they would waive their objection if a 150 foot dam were constructed.[437]

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[434] Mono Power Co. v. City of Los Angeles, 284 Fed. 784 1922.
[435] U.S. Department of Interior, Reclamation Service. Report on Owens Valley Project, California by Harold Conkling (MS, 1921), pp.2-6.
[436] Ibid., p. 7.
[437] Don J. Kinsey, The Water Trail, the Story of the Owens valley and the Controversy Surrounding the Efforts of a Great City to Secure the Water Required to Meet the Needs of an Ever-Growing Population (Los Angeles:

Los Angeles refused to consider the high dam since they did not possess rights for a reservoir site above the one hundred foot contour and the price asked by the Eaton Land and Cattle Company for the adjoining lands was considered excessive. The status of the power project in the Owens gorge was uncertain, and without power development, the only use of the reservoir would be to regulate the flow of the river for irrigation. Owens Valley irrigation continued to depend entirely upon the regulated flow of the Owens River and its tributaries.

Land and Water Right Purchases

Purchase Plans. With the extreme drought beginning in 1923 and the continued high demand for water, the Public Service Commission decided to embark upon a program of land purchases to secure creek and canal water rights to supplement the flow of the Owens River. In April, 1923, William Symons was commissioned to buy all of the lands east of the river below the McNally and Collins ditches and the lands irrigated from Fish Slough.[438]

Since the lands east of the river were of a marginal nature, the Public Service Commission planned to acquire all of this land with the appurtenant water rights, leaving the land west of the river as an integral irrigation unit. The proposition was presented at a meeting of the McNally Ditch Company. The majority of the owners agreed to sell at the prices set by the Public Service Commission.[439]

Protests. Throughout the Owens Valley the new purchase program released an extraordinary chain of reaction provoked by many conflicting and contradictory motives and suspicions. Some of the valley citizens did not want to sell their homes for any price. Some

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Department of Water and Power, 1928) , pp. 20-21. Chalfant, op. cit., pp. 382-84. Authorities on each side of the controversy disagree on whether or not the injunction was ever granted.

[438] Porter, op. cit., p. 48.

[439] Los Angeles City, Board of Public Service Commissioners, Reply to Watterson, p. 31. Interview with H.A. Van Norman, September 28, 1949.

were ready to sell at the first substantial offer and others were anxious to begin "farming" the City of Los Angeles for all that they could get.[440]

Protests against the purchases were made through W. W. Watterson by the members of the board of directors of the newly organized Owens Valley Irrigation District, which included most of the lands west of the river. When the Public Service Commission offered to enter into an agreement accepting the terms proposed by Watterson, to exclude the lands of the irrigation district from its purchase program and to build a high dam at Long Valley to regulate the flow of the river, the offer was rejected upon the failure of all of the constituent irrigator associations to agree.[441]

A group of men from Bishop, including the brothers, Wilfred W. and Mark Q. Watterson, concurrently organized the minority owners along the McNally ditch into a pool and held out for a price the city considered exorbitant. With this turn of events, the Public Service Commission authorized its agents to cross the river and make purchases of the land and water rights necessary to supplement the deficiency in the aqueduct's flow. The valley people responded by securing an injunction to prevent the city from diverting its newly acquired water or pumping wells until the water rights of the private owners had been adjudicated.[442] The opposition in Owens Valley intensified to the point of violence when the aqueduct was dynamited near Lone Pine on May 21, 1924.[443]

Compromise Proposal. After a special survey of the Owens Valley situation by a board of consulting engineers, the Public Service Commission suspended the land purchases and adopted a policy of permitting 30,000 acres of land to remain in private ownership with the

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[440] Interview with Harold Eaton, August 18, 1949.
[441] Porter, op. cit., p. 48.
[442] Kinsey, op. cit., p. 24.
[443] Porter, op. cit., p 50.

assurance of a firm water supply, and agreed that the city use its best efforts to secure the construction of

> … a hard road into and through Owens Valley in order to make the scenic region accessible to tourist travel, which would be profitable to the valley and its citizens.[444]

This offer of compromise was rejected by the Owens Valley people; the great majority preferred to sell at their price or submit the collective purchase to an arbitration board. The Public Service Commission refused to consider such a proposition.[445]

On November 16, 1924 a large group of Owens Valley citizens seized the diversion works on the Owens River and opened the waste gates permitting the river water to flow into Owens Lake hoping to place the Public Service Commissions in a more favorable frame of mind toward their arbitration proposal. In reply to a plan for troops, Governor Richardson sent the State Engineer, W.F. McClure, to investigate.[446] McClure joined the local festivities at the diversion works. Only when the Los Angeles Clearing House Association offered to seek a settlement of the controversy were the flood gates closed.[447] The Public Service Commission continued to refuse to arbitrate.

Farm Purchases. On January 19, 1925, the resolution reserving 30,000 acres in private ownership was rescinded and a general land purchasing program was authorized. Three leading valley residents, George Naylor, chairman of the Inyo County Board of Supervisors, Vivian Jones, Inyo Country Assessor and Grant Clark, a former Inyo Country Assessor, were appointed as a board of appraisers to assess each piece of ranch property still in private possession and

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[444] "Owens Valley Problems," Intake. I (November, 1924), p. 32.
[445] Porter, op. cit., p. 51.
[446] California, Senate, Letter of Transmittal and Report of W.P. McClure, State Engineer, Concerning the Owens Valley-Los Angeles Controversy to Governor Priond W. Richardson (Sacramento, 1925), 101 pp.
[447] Los Angeles City, Board of Public Service Commissioners, Reply to Watterson, passim.

recommended a price for each parcel to the city.[448] These prices were used as the basis for farm purchases until discontinuance of the purchase program on May 1, 1927 because of stalemated negotiations and lack of funds. By this time about 225,000 acres or eighty per cent of privately owned farm land had passed into the ownership of the City of Los Angeles. The balance of the land was either held in pools seeking higher prices, such as the Keogh Pool in the West Bishop and Long Valley, or held by individuals who did not intend to sell.[449]

Reparations and the Purchase of Owens Valley Towns

Damages. The purchase of the outlying agricultural lands by Los Angeles had deprived the Owens Valley economy of an important source of wealth. Agricultural laborers found their source of employment seriously restricted. Merchants and various service trades and professions saw their markets dwindling.

In 1928 a fact finding committee appointed by the Board of Water and Power Commissioners asserted that, "Our own department figures show that although hundreds of families have left the valley, the city has made leases to only forty-three newcomers."[450] Between 1920 and 1930 the area of Laws, Round Valley and Bishop suffered a twenty per cent decrease in population. The declining enrollment in the public schools caused six elementary schools to close and another six to be consolidated with other schools.[451] Bishop merchants showed losses of more than fifty per cent in their total volume of business.[452]

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[448] Kinsey, op. cit., p. 27.
[449] Porter, op. cit., pp. 55-58. The ranch owners committee of Keough Pool consisted of Kerl P. Keough, George A. Clark, and W. W. Watterson. The Public Service Commissioner offered a high as $1,250,000 for the 4,482 acres involved, but the Pool held out for $2,100,000.
[450] C.A. Dykstra, James Brader and J. F. Neal, Special Committee Report on Conditions in Owens Valley (NS, 1928) variously paginated.
[451] Ruth E. Baugh, "Land Use Changes in the Bishop Area of Owens Valley, California," Economic Geography XIII (January, 1937), p. 29.
[452] Dykstra, Brader and Neal, op. cit.

Reparation Claims. With these circumstances, the Watterson brothers formulated a scheme to demand reparations for the intangible damages done by the city's farm purchase program to the business, trades and professional people in the Owens Valley towns. Early in January,1925, they submitted a proposal to the Public Service Commission demanding $4,400,000 dollars in reparations or the sale of the town properties for $12,000,000 including reparations.[453] This proposition was rejected.

During the 1925 session of the state legislature, the Wattersons and Owens Valley interests secured the passage of legislation which declared the city liable for such reparation claims.[454] After offers to arbitrate the reparation claims and the other outstanding controversies were refused by the Department of Water and Power, the Owens Valley Reparation Association and the Big Pine Reparation Association filled formal claims with the City of Los Angeles for damages totally $2,813,355,42.[455] Seventy-nine occupational and trade claimants including mechanics, laborers, bank clerics, stenographers, bookkeepers, electricians, blacksmiths, barbers, and beauty specialists south recovery of $84,372.00 for damages allegedly arising from the deprivation of their economic pursuits by the farm purchase program. Thirty-five Indians claimed damages to their occupations as farm laborers totaling $22,320. Similarly physicians and surgeons, dentists, a nurse, a chiropractor and a veterinarian made claims of professional damages for $42,751.95. Alleged depreciation of the real estate value of town lots and buildings including family dwellings brought 310 claims seeking recovery of $1,988, 801.51. Another $165,674.68 of claims were sought from the depreciation of the value of personal property,

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[453] Los Angeles Examiner, January 10, 1025.
[454] California, Legislature, Statutes of California, 1925 (Sacramento, 1925), pp. 251-53.
[455] Los Angeles City, Department of Water and Power, Facts Concerning Owens Valley Reparations Claims (Los Angeles, n.d.), p. 7.

including such items as store fixtures, barber shop equipment and household goods. Sixty-seven business establishments claimed damages totaling $531,755.21.

These reparation claims were the recovery of alleged damages previously committed and neither involved the sale or transfer of any of the town properties nor a final settlement for claims to damages that might arise in the future.

Violence. The negotiations over the reparation claims were marked by campaigns of organized violence. The deep city walls and sections of the aqueduct were repeatedly dynamited to forcefully deprive Los Angeles of water. Occasionally personal violence was committed against individuals of known sympathies for the City of Los Angeles. The damages suffered by Los Angeles from the dynamiting and violence were estimated to have cost more than $250,000.[456]

Early in 1927, the dispute had become so critical that Governor C.C. Young personally intervened to arrange some settlement. In conference with the attorney for the reparations associations and the Water and Power Commission, Governor Young secured an agreement to test the validity of the claims under the state legislation and provisions of the city charter.[457] If the validity of the claims was upheld, the Water and Power Commission could negotiate a settlement without assuming individual liability for their actions. The law suits were delayed by the Wattersons and a new campaign of violence was begun in their desperation to force immediate purchases.[458]

On August 4, 1927, all five Owens Valley banks owned by the Watterson brothers closed their doors.[459] Following an investigation by bank examiners, criminal charges were filed

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[456] Kinsey, op. cit., p. 31.
[457] Dykstra, Brader and Neal, op. cit.
[458] Loc.cit.
[459] Los Angeles Illustrated Daily News, August 5, 1927.

against Wilfred W. and Mark C. Watterson for embezzling $460,000 of depositors' money. A jury of Owens Valley residents found their erstwhile leaders guilty and they were sentenced to prison.[460]

A new opportunity for the solution of some of the conflicts with Owens Valley was created for the Department of Water and Power following the exile of the Wattersons. At the request of a delegation of Owens Valley citizens, the Department of Water and Power undertook a special construction program to build a new headquarters building and a warehouse, to repair ranch buildings and fences on land owned by the city and to drill new wells for the development of the underground water supply. For many valley residents this work was the only source of livelihood after their life savings had been embezzled.[461]

While the claims for reparations had been allowed to expire for failure to initiate litigation within the time allowed for the presentation of claims under the city charter, a special committee composed of C.A. Dykstra, James Brader, H.A. Van Norman and J.F. Neal was appointed to investigate and report on the conditions in Owens Valley. In addition to recommending the complete ownership of all the land and water rights in Owens Valley this committee urged the Board of Water and Power Commissioners to seek some solution of reparation problem.[462]

Purchase of the Towns. Immediately following the Dykstra, Brader and Neal report, the Board of Water and Power Commissioners adopted a resolution to entertain offers from Owens Valley ranchers to sell their ranch properties. From February 13-15, 1929 the Board of Water and Power Commissioners held three days of special hearings in Owens Valley to consider the question of purchasing the town lots. Before leaving Owens Valley, the board members took

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[460] Porter, op. cit., pp. 60-61.
[461] "Special Construction Program Authorized for Owens Valley Relief," Intake IV (December, 1927), p. 8.
[462] Dykstra, Brader and Neal, op. cit.

action, establishing the policy of buying out the valley, "lock, stock and barrel," including the town properties, providing that a legal right to do so existed.[463]

A Special Owens Valley Committee, composed of H.A. Van Norman, A. J. Ford and E.A. Porter was appointed to represent the Board of Water and Power in recommending policies and conducting the purchase program for the Department of Water and Power. After investigating the problem and securing board approval for the procedures which they recommended, the Special Owens Valley Committee met with the people in Owens Valley to discuss the purchase program. At the request of the city's representative each of the five towns selected two representatives to serve on a Committee of Ten to negotiate with the board's Special Owen Valley Committee. Jess Hession, the district attorney who prosecuted the Wattersons was selected as chairman of the Committee of Ten. At the first joint meeting of the city's representatives the Owens Valley town representatives were informed of the city's plans to employ a group of engineers to appraise the value of all private ranch and town properties to determine their 1929 values.[464]

The city's corps of appraisal engineers completed the field work for the evaluation of the town properties on June 12, 1929.[465] The town of Bishop had appointed an independent appraiser to evaluate its property. In the meantime a special farm appraisal program was established in which a farm review board, composed of A.J. Ford as the city's representative and W.R. McCarty as the representative of a group of Owens Valley ranchers agreeing to the

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[463] Porter, op. cit., p. 64.
[464] A.J. Ford, A Resume of the Activities in Connection with the Fixing of Values and Proposed Purchase of the Privately Owned Property Within the Towns of Laws, Bishop, Big Pine, Independence and Lone Pin in Owens River Valley by the City of Los Angeles (MS, 1932), pp. 6-17.
[465] Porter, op. cit., p. 70.

proposal. These two in turn appointed Edward Goodenough, a member of the Board of Supervisors of Ventura Country as a third member.[466]

After the values of the town lots and improvements had been determined by the city's appraisers, the Owens Valley town representatives asked that the 1929 values for each of the towns be increased by the following percentages: Laws and Independence, forty-five to fifty per cent each; Bishop, 120 percent; and Big Pine, sixty per cent.[467] No supplemental increase was asked for the Lone Pine appraisal values. These increases in the appraised 1929 values were claimed as the amount of value deprecation suffered by the town properties as a result of the city's farm purchase program.

These demands were finally compromised by the city's Special Owens Valley Committee and the Committee of Ten to provide for the following percentage increases for each of the towns: Laws, 34.5 per cent; Bishop, forty per cent; Big Pine, thirty per cent; Independence, twenty-five per cent; and Lone Pine, no increase. On the basis of this compromise, the Board of Water and Power Commissioners adopted a resolution authorizing the purchase of the town properties in Owens Valley at the adjusted price for the following amounts:[468]

TOWN	PRICE
Bishop	$2,975,833.00
Big Pine	772,635.00
Independence	730, 306.00
Laws	102,446.00
Lone Pine	1, 217, 560.00

[466] Ibid., pp. 69-71.
[467] Ibid., p. 72.
[468] Ford, op. cit., p. 18.

Grand Total	85,798,780.00

The offer to purchase the Owens Valley town properties however, was qualified with the understanding that,

> … the citizens of Owens Valley will cooperate with said Board in the formulation and adoption of plans that will insure a full measure of protection to the vast property investment of the City of Los Angeles in the lands and waters of Owens Valley, and that will at the same time, protect the interests and investment of the citizens of Owens Valley; said Board having in mind, among other things, the following plan for such purposes:
> (a) Possible annexation to the City of Los Angeles
> (b) The establishment and development by the City of Los Angeles of a great park and play-ground in the County of Inyo, California, including lands of said city, such park and play-ground to be an integral part of said City of Los Angeles and be governed by said city.[469]

Shortly after the approval of the purchase of the Owens Valley towns, the Agricultural Review Board reported its findings on the values of the farm properties. The city's representative established the value of the farms at $817,733 while Goodenough and McCarty set a value of $1,120,087. The difference in prices was $302, 354 or a difference of twenty-seven per cent. At first the Board of Water and Power Commissioners refused to offer to purchase at Goodenough's values; but on December 26, 1929 the board reversed itself and greed to the purchase.[470]

After securing the approval of a new bond issue to provide for the town lot and land purchases, and the affirmation of the California Supreme Court of the city's power to purchase the Owens Valley towns, the Right of Way and Land Agent for the Department of Water and Power was instructed on December 23, 1930 to proceed with the purchases at the 1929 adjusted

[469] Ibid., p. 19.
[470] Porter, op. cit., pp. 76-78.

values.[471] Some of the town properties in Laws were purchased earlier to quash a suit to enjoin or the threat of suits for similar injunctions marked much of the negotiations for the purchase of the Owens Valley properties.

The purchase program proceeded on through 1931 and into 1932. Each sale required a release of the city from any reparation claims. By mid-1932, Los Angeles had acquired ninety-five per cent of all of the agricultural lands and on May 1, 1933 possessed eighty-five per cent of all of the town properties.[472]

The only major pool formed during the town purchase program was organized in Bishop by Joe Riley, state senator from Inyo County and B.E. Johnson, consisting of thirty-one parcels of property in the business district. Riley and Johnson asked $466,632 for these properties which had a 1929 adjusted value of $234,818. The Board of Water and Power Commissioners rejected the offer and refused to consider any other purchase price than then 1929 adjusted value.[473] Later in 1936 the board took an option to buy the Riley-Johnson pool on condition that the town of Bishop disincorporates. Since the people of Bishop would not approve disincorporation, purchase was never consummated.[474] However, some parcels in the Riley-Johnson pool were purchased on an individual basis.

Before Los Angeles began to sell back some holdings in the Owens Valley towns it had acquired a total of eighty-eight per cent of the total town property. By 1945Los Angeles had acquired 278,055 acres of 98.64 per cent of the privately owned farm lands in Owens Valley. In

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[471] Ibid,. p. 84.
[472] Ibid., pp. 21, 97.
[473] Ford, op. cit., pp. 80-82. The Riley-Johnson price was based upon the following items: value of real estate and improvements based upon the James G. Stafford appraisal, $304,433; reparation claims filed on August 17, 1926, $102,591; and added amount for unaccountable reasons, $59,608.
[474] Los Angeles Herald-Express, May 4, 1936. Porter, op. cit., pp.107-09.

addition, the federal government had withdrawn 672,954 acres of public and from homestead entry to protect Los Angeles' water rights.[475]

The Elements of Misunderstanding and Disagreement

Probably the bitterest misunderstandings and strife to ever mark the relationship of two communities within a single commonwealth were experienced during the decade of Los Angeles' Owens Valley purchase program from 1923 to 1933. While some of the more rhetorical of the literati have exclaimed the "rape of Owens Valley,"[476] the underlying factors contributing to the controversy have been neglected.

The Uncertainty of City Policies. When the Owens River aqueduct was first planned no one doubted that the surplus flow and the water rights acquired by Los Angeles would be adequate to meet the future needs of the city for all time. But, the unanticipated population growth and the unexpected low yield of the Owens River during the drought years smashed these illusions and presented the water officials with the problem of securing more water for the immediate needs of the city.

The simplest solution seemed to be the purchase of additional water rights used to irrigate Owens Valley farm lands, and to tap the undeveloped underground waters in Owens Valley. Apparently no one anticipated either the consequences or the extent that this program would commit the city to the purchase of nearly all of the property in Owens Valley. Each new development presented the city officials with problems which were sources of delay and annoyance. They were primarily concerned about more water. One policy or another directly affecting the quantity of water available could not assume the importance in Los Angeles that it

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[475] Ibid., pp. 21-22.
[476] Morry,Mayo, Los Angeles (New York: Alfred A. Knopf, 1933), pp. 220-46. Carey McWilliams, Southern California Country, An Island on the Land (New York: Duell, Sloan & Pearce, 1946), pp.187-91.

did to the people of Owens Valley. Among these policy matters disturbing the Inyoites were the following questions.

> Is it to dry up the Valley, or to keep it green? Is it to lease temporarily, or over a long period of time? It is to build dams or other conservation structures in the Valley, or to take its chances on the water supply? Is it to pump, or to build more reservoirs? Is it to acquire all the lands, or to leave some private ownership? Is it to pay reparations, or to avoid them if possible? Is it to dominate country politics and manage public officials in the Valley, or is it one of non-interference? Is it to colonize with new blood, or to keep as many old timers as possible?[477]

Personalities. The relations between Owens Valley and Los Angeles were complicated by the conflicting personality qualities of the leaders in the dispute. The leaders of the extreme fraction in the Owens Valley, Mark Q. and Wilfred W. Watterson were neither interested in resolving the dispute to secure a satisfactory agreement nor the welfare of their own followers in Owens Valley. Rather, they sought to exploit the circumstances of the situation for their own advantage, to make themselves a fortune and save their banking empire. Rather than press litigation under the agreement reached by Governor C.C. Young, the Wattersons turned again to coercion to win a quick settlement. As a result of their counsel, the reparation claims were permitted to expire and the Wattersons went to prison.[478]

Employing the strategy of the demagogue, they sought to provoke more extreme demands and sharper conflict. Gangs of dynamiters committed countless acts of violence against the Los Angeles Aqueduct and appurtenant water works in the valley to win concessions from Los Angels with a threat of water famine.[479] Some of the archaic doctrine of California water law were exploited through litigation, obstructing progress toward a working agreement that

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[477] Dykstra, Brader and Neal, op. cit.
[478] Loc.cit.
[479] Los Angeles Herald, February 22, 1928.

would provide for a maximum conservation and utilization of Owens Valley water for local needs and exportation to Los Angeles.[480]

By the organization of irrigation districts, pools and reparations associations they sought to organize sale negotiations to demand the highest possible price that they could coerce from the City of Los Angeles. As members of the board of directors of the Owens Valley Irrigation District, they violated their trust of office by arranging collusive bids for the irrigation districts bonds. Their reason for this section was that, "… we don't want these bonds sold out over the country, but we want them where we can call them in, place our hands on them, and disorganize and play off."[481]

Publicists such as Andrae Nordskog were hired by the Wattersons to press their demands in Los Angeles through the medium of the Gridiron. Burton Knisely, a managing editor of the Los Angeles Record, used his position to press one of the most vindictive campaigns to appear in an American newspaper.[482]

In contrast to the Wattersons, William Mulholland as the city official primarily responsible for the conduct of the Owens Valley program for the Department of Water and Power was equally as persistent but unimpeachably honest. This characteristic was recognized early in Mulholland's career when the city attorney paid the following tribute to his fairness as the water company's chief engineer in testifying before the arbitration board as to the value of the improvements made by the Los Angeles City Water Company:

> In some instances, he declared the City Engineer's estimates too high, and they were reduced at Mr. Mulholland's own suggestion. HE was chided and scolded by his

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[480] Chalfant, op. cit., pp. 382-84, 398, 400, 403.
[481] City of Los Angeles v. W.W. Watterson, O Cal APP 2d 331, 340 (1935).
[482] "Out of Their Mouths," Bulletin of the Municipal League of Los Angeles, V (October 31, 1927), pp. 1-3. Guy N. Finney, " A Judas in the Owens Valley Conflict," The Los Angeles Graphic, November 26, 1927.

> employers for showing such impartiality, but his professional reputation and honor were at stake.[483]

As a result of this high sense of honesty and moral responsibility, Mulholland was limited in his ability to negotiate with persons whose integrity he doubted. When convinced of his own analysis of such a situation, Mulholland simply could not be coerced. Deadlock was inevitable.

Suspicion and Misunderstanding. In 1928, a special investigating committee made the following report of their impression of Owens Valley:

> …the Valley is, even today, a hotbed of suspicions, prejudices and hatred. Suspicions are mutual and widespread. The Valley people are suspicious of city men, suspicious, in short of almost everybody and everything.
>
> The City's representatives in the Valley are suspicious. They are suspicious of the Board of our administration in the City of Los Angeles. In short Owens Valley is full of whisperings, mutterings, recrimination and suggestion of threat of one kind or another.[484]

This frame of mind, bred in years of conflict, has been an almost insurmountable obstacle to friendly relations between Los Angeles and Owens Valley.

Even on basic questions of fact there was little or no agreement. In the purchase of land and the appurtenant water right, Los Angeles sought to buy the land on the basic of values derived from its existing economic utilization. The ranchers in Owens Valley conceived the value of their lands in terms of water production and the price that the water would bring in Los Angeles. Practically every other situation had at least two mutually exclusive interpretations. On both sides many people were"… convinced that certain things actually happened which probably never occurred."[485]

During the years of conflict, the city's administration in Owens Valley became immunized to the local perspective by the sense of hostility that existed. Everything was put n a take it or leave it basis. At the same time these city employees came to resent supervision and

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[483] Los Angeles Times, August 22, 1899.
[484] Dykstra, Brader and Neal, op. cit.
[485] Loc. cit.

inspection from headquarters which they felt, could not possibly understand the situation in the Valley. In response to an interview by a committee representing the board of commissioners, a city employee in Owens Valley was quoted as saying, "If we had instructions we'd know how to talk to your fellows."[486]

To keep informed on local and administrative developments a system of confidential reports and inside information characteristic of the grapevine method pervaded the atmosphere of the Owens Valley administration. The people of the Valley resented the spying approach and the sense of mutual suspicion, implicit in grapevine communications, was greatly exaggerated.

The process of purchase by negotiation in itself tends to create an atmosphere of suspicion and hostility. The shortcomings of this process were explained to a Congressional Committee in the following statement:

> In Owens Valley we did everything by negotiations. We went in and took years and years to settle it. The first people we buy out under the negotiations, they set a fair price and we buy it. A little later their neighbors hold us up for a higher price and we have to take that price, and the first person thinks you did not treat him right, and it has made trouble and dissatisfaction.[487]

Proprietorship

With the acquisition of virtually all of the privately owned urban and rural lands in Owens Valley, a new opportunity was created to develop a more friendly relationship. However, the removal of the old source of controversy did not assure amiability. Instead new problems involving a complex of relationships, traditionally associated with fare tenancy, absentee landlordism, and the company town, confronted responsible officials of Los Angeles' Department of Water and Power.

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[486] Loc.cit.

[487] U.S. Congress, Senate Committee on Public Lands and Surveys, Hearings…on H.R. 11969, An Act Withdrawing Certain Public Lands from Settlement, Location, Filing, Entry or Disposal Under the Land Laws of the United States for the Protection of the Watershed Supplying Water to the City of Los Angeles, California, and for Other Purposes, February 5 and 6, 1931. 71st Cong., 3rd sess. (Washington: Government Printing Office, 1931), p. 75.

The Administration of City Lands. To be able to realize a return upon its investment, the Board of Water and Power Commissioners has followed the policy of leasing its holdings subject to the needs of the city for an adequate water supply. The farms were leased for a five-year period at a graduated rate depending on the character of the farm land, improvements and upon the amount of water available for irrigation.[488]

These leasing policies presented a number of new problems to Owens Valley. Since the city had acquired prior claim to the water supply, ranchers had to operate their farms and ranches with uncertainty in their leasehold and variations in their water supply subject to the needs of the city and the annual variation in water crop. A five-year lease did not assure permanency for long range improvements and the practice of increasing the prices of the lease with the increased value of improvements tended to hold these to a minimum.[489]

Beyond the ordinary impermanence of leasing, the city could terminate the lease upon proper notice when the water supply was inadequate for minimum farming needs. In February 1930 nearly all leases were cancelled to divert the full water crop to Los Angeles through the following regular irrigating season.[490]

As a result of these circumstances, the agriculture of Owens Valley shifted to an almost exclusive emphasis upon stock raising and related crops such as alfalfa, hey and grains used for stock feed. The stock-growers lease the city owned lands in the valley for winter grazing and the production of winter fodder and move the cattle to the forest reserve and other public lands for summer grazing.

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[488] Resume of Owens Valley Leasing Policy. Water File No. 643.
[489] E.A. Porter, Proposed Plan for Large Leasing Units in the Owens River Basin (NS, 1930), pp. 1-2. Dykstra, Brader and Neal, op. cit.
[490] Ibid. p. 1.

The water requirement for the stock-grower is minimal. Except for the production of winter feed, water is not required for any irrigated crops. Capital improvements for stock-raising by extensive grazing operations is comparatively small permitting a greater flexibility in operations dependent upon a variable water supply then other types of agriculture.

Dairy, poultry, and truck framing necessary to meet the requirements of the local markets continue to provide some diversity in the Owens Valley agriculture. During the period of heavy war and post-war demands for agricultural goods, surplus water has been used for the production of an increasing acreage of annual field crops.

In general, the orchards and other types of permanent crops requiring an assured annual supply of water have been abandoned to the priority of the water crop. In 1945 the irrigated crop lands leased by the Department of Water and power in Owens valley were only 6,804 acres.[491]

The town properties were leased at an annual rental of six per cent of the purchase price plus taxes. A refund of ten per cent of the rental was allowed for repairs and improvements made by the leases. Former owners were given preference in leasing.[492] In response to demands for readjustments of rental provision based upon the 1929 adjusted values, the department provided for a reappraisal of the properties to conform to the economic conditions of the 1930's. A maximum limit of fifty dollars per month was placed upon residential units.[493] Otherwise the leasing of town properties posed no special problem except for taxation and the provision of municipal services.

Taxation. In providing for the general exemption of the federal, state, county and municipal lands from taxation, the California Constitution specifically excludes,

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[491] "Department Largest Valley Taxpayer," Intake XXII (October, 1945), p. 11. This was only about one-tenth of the land under irrigation prior to the city's purchase of the farm lands.
[492] Porter, Bibliography, p. 86.
[493] Resume of Owens Valley Leasing Policy, op. cit.

> … such lands and the improvements thereon located outside of the country, city and county or municipal corporation owning the same as were subject to taxation at the time of the acquisition of the same by said county, city and county or municipal corporation; provided, that any country, city and county or municipal corporation thereon, belonging to any country, city and country or municipal corporation not exempt from taxation, shall be assessed by the assessor of the county, city and county municipal corporation in which said lands or improvements are located, and said assessment shall be subject to review, equalization and adjustment by the State Board of Equalization.[494]

As the owner of substantially all of the real property which had ever been held in private ownership, the Department of Water and Power was the principal source of revenue for the operation of county and municipal governments in Owens Valley. During the period when improved farming acres were being abandoned, the total assessed valuation of the Department of Water and Power's holding were being increased. In 1935, the assessment on city property had been increased to $12, 232, 005, as compared to $7,760,960 for the previous year.[495]

According to a representative of the Department of Water and Power, "Generally speaking, city lands have been assessed at from ten to twenty times the actual market value…."[496] On the other hand, a substantial part of the loss in actual market value of the city's property arose from the policies pursued by the city of abandoning the land to harvest the water crop.

In order to force a reduction of its tax burden the department attempted to secure the disincorporation of Bishop as a condition to an agreement to purchase the remaining properties held in the Bishop pool. At a special election on August 22, 1936, the citizens of Bishop rejected this proposition, preferring to retain their corporate entity.

In 1936 and 1937 two different suits were commenced to recover taxes which had been previously paid. One suit involved taxes based on the assessment of improvements which no

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[494] California, Legislature, Assembly, Constitution of the State of California, (Sacramento, 1941) p. 191.
[495] Earl F. Rybolt, "The Tax Situation in Inyo and Mono Counties," Porter, Bibliography, p. 25.
[496] Ibid., p. 24.

longer existed. The other action, the amount of the assessment of unimproved grazing or desert lands was in controversy. On the 186 parcels of desert land involved, the Department of Water and Power established $370,108 as a fair market value while the assessed valuation was $1,995,685.[497]

Before the tax controversy could be settled by the courts, a new citizen group in Owens Valley came forward to assume the initiative to secure the cooperation of the city of Los Angeles in the future development of Owens Valley. Inyo Associates, as the new group became known, was organized as a result of an informal conversation among Father John J. Crowly, a Catholic priest; George Savage, the new publisher of the Inyo Independent, Ralph D. Marritt and William McCarthy. Joined by W.A. Chalfant and many other leaders in the Valley, the Inyo Associates set out to "bring back" the Valley by attempting to make a reality of promises that the city had made rather than carrying on a steady campaign of opposition.[498]

As a result of this new spirit of cooperation the Department of Water and Power authorized the re-sale of town lots with the reservation of water rights to the City of Los Angeles, enunciated a policy of non-interference with local governmental affairs in Owens Valley and dismissed the tax suits.[499]

Economic Re-Conversion. Other activities of the Department of Water and Power substantially aided the reconversion of the economy of Owens Valley. The large financial outlay in the construction of the Mono extension provided a supplementary source of income to cushion the readjustment during the difficult period of the 1930s.

Meanwhile, efforts to create a recreational and tourist center of the High Sierras in Inyo and Mono counties were becoming an important source of economic activity for Owens Valley.

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[497] Ibid., p. 25.
[498] Ed Ainsworth, "The Valley of Hate has Become the Valley of Hope," Los Angeles Times, January 28, 1940.
[499] Porter, Bibliography, p. 113.

Since the early 1920's the Department of Water and Power had used its publicity media to land the beauty and recreational opportunities of the High Sierras to its employees and customers.[500]

Camp High Sierra, near the Mammoth Lakes and Lake Crowley, the reservoir behind the Long Valley Dam are operated as playgrounds by the Recreation and Park Commission of the City of Los Angeles. These playgrounds with facilities provided by the City of Los Angeles have become a principal recreational attraction for the citizens of Los Angeles.[501]

Accessibility to the natural wonders of the area has been increased by the department's own road construction program and the encouragement of the development of a state highway integrated with the major thoroughfares of California and Nevada. In cooperation with the California Fish and Game Commission, the Mt. Whitney Fish Hatchery is maintained to plant trout in the streams of Inyo and Mono counties.[502] The investment of private capital in tourist facilities is encouraged by the Department of Water and Power in its general leasing policies.

In addition, the war-time demand for metals and minerals occurring in Owens Valley, including tungsten, lead, molybdenum and the saline deposits of Owens Lake stimulated the expansion of mining operations as an increasingly important factor in the economy of the valley. In 1944, the value of the mining operations was $6,716,413.[503]

Following the necessary appraisals and the approval of the city council and mayor, the first group of Owens Valley town properties were sold on August 29, 1929. By February, 1944,

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[500] C.A. Dykstra, "Owens Valley—A Problem in Regional Planning," The Community Builder I (February, 1928), p. 11.
[501] Los Angeles City, Board of Water and power Commissioners, Sportsmen's Paradise, Inyo-Mono Country, leaflet.
[502] "Department Cooperation Helps State Improve Valley Fishing," Intake, XXII (November, 1945), pp. 11-13.
[503] Marshall Beauchamp and Robert Perry, eds., California Almanac and State Fact Books, 1948-1949 (Los Angeles: California Almanac Company, 1947), p. 489.

637 parcels of town property had been sold for the total sum of $1,598,864, reducing Los Angeles' holding of town property to nearly fifty per cent of the total.[504]

New Conflicts. Early in 1944, the Board of Water and Power Commissioners revised its policy of giving preference to the lease holder in the sale of property or granting a return for improvements if the property sold for more than the established value. Instead, sealed bids were prescribed for all sales and an attempt was made to require the submission of bids for agricultural leases.[505]

As a result of the controversy over the new sales and leasing policy, the sales program was suspended. The agricultural lease holders organized an Inyo County Cattlemen's Association to oppose the inauguration of secret bidding for grazing leases. As a result of this opposition, the agricultural leasing policy remained in a state of suspension through the balance of 1944.

Acting on order of the Board of Water and Power Commissioners, W.W. Hurlbutt, Chief of Engineer of the Water System, issued instructions to increase rents effective January 1, 1945 to assure a "fair" return based upon the 1944 appraisals. These notices, issued to renters during Christmas week while the federal government was maintaining a rigid rent control policy for most of the nation, resulted in an extreme reaction in Owens Valley.[506]

At the following session of the state legislature, the people of Owens Valley secured the enactment of a state law regulating the administration and disposition of real property owned by a city, county, or city and county and located within another local governmental agency in which

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[504] Porter, Bibliography. P. 121.
[505] Ibid., pp. 123-26.
[506] Los Angeles Daily News, February 16, 1945.

the owner agency owned more than fifty per cent of all of the land exclusive of federal and state public lands.[507]

In prohibiting "…any charge in excess of a reasonable charge for the sale or other disposition or for the leasing, licensing or other use of any of its real proper,"[508] the law prescribes the following standard of evaluation:

> The economic utility of the property to the user of it for the purpose or purpose to which it is suited is the prime factor in determining the reasonableness of any such charge. For example, in the case of a lease for the grazing of livestock, the value of the forage to the livestock producer, taking into consideration the number of livestock the property reasonably will support when used in a manner that will conserve it as a grazing resource and the monetary return to the livestock producer by such use of the property, is the prime factor in determining the reasonableness of the rental charge.[509]

The occupant is given preference to buy or lease the property at a reasonable price or rental. If charge in excess of the standard reasonableness is made for the sale or lease of its real property, the local government agency "… shall repay the amount of cash excess, with interest from the date of collection, to the persons from whom received."[510]

In effect this legislation has become the controlling policy in the city's administration of its lands in Owens Valley and Mono Basin. Only occasional pieces of property which have been vacated by their former tenants and thus eliminating adverse claims under the new law, are sold. Leasing policies are based on the standard of reasonableness required by the statute which was used for several years prior to 1944.

Indians. With the abandonment of a substantial portion of Owens Valley agriculture, the Paiute Indians, as agricultural laborers, had lost a source of income essential to their economic

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[507] California, Legislature, Statutes of California, 1945, p. 2518.
[508] Ibid., p. 2519
[509] Loc.cit.
[510] Loc. cit.

livelihood. While many of the ranches left the valley, the Indians remained behind to eke out an existence in whatever way they could. By 1931 conditions became so bad that the Department of Water and Power appropriated special funds for the employment of Indian labor for the purpose of ameliorating their distressing economic plight.[511]

In 1935, representatives of the Los Angeles Department of Water and Power and the United States Department of Interior formulated a plan for the exchanged of the marginal lands within the Indian reservations for choice agricultural lands owned by the city in four different home sites near Bishop, Big Pine, Independence and Lone Pine. In addition to 1,511.48 acres of lands, the city agreed to convey firm water rights to 6,046 acre feet of water annually. In return the federal government conveyed 3,597 acres of reservation lands to the City of Los Angeles.

These farm lands were divided into five –and ten-acre plots equipped with a modern house for each family. The size of the plot allocated to a family depended on the size of the family. A system of underground pipes was installed to provide an efficient irrigation system for intensive cultivation of corn, alfalfa, potatoes and other crops as well as the raising of livestock. Modern conveniences such as a community center, a sewage disposal system, a communal farm implement pool, and police and fire protection were provided for each homesite.[512]

By the cooperation of city and federal government officials, the Indiana problem in Owens Valley was satisfactorily resolved. With their new fertile farms and modern homes, each Indian family is assured an economic security and living conveniences which it never enjoyed before. The new homesites have been occupied since 1941.

Federal Public Lands. To protect the watershed for the Los Angels municipal water supply, approximately 200,000 acres of public land were reserved in Owens Valley as a part of

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[511] E.A. Porter, Final Report on the Owens Valley Indian Situation Including a Suggested Plan for Adjustment of Same (NS, 1936), pp. 1-2.
[512] Ibid., pp.4-13. "Indians of Owens Valley Moved into New Homes," Intake XVIII (October, 1941), p. 7.

the Inyo National Forest. In addition, 874,000 acres of the public domain were withdrawn from entry by special acts of Congress or by executive order from 1931 to 1933.[513]

During the controversy over the competitive bidding policies for the leasing and sale of city lands in Owens Valley, a bill was introduced into Congress to repeal the earlier sets withdrawing public land from entry and providing for the grant of lands and rights of way for Los Angeles municipal water and power works. Owens Valley representatives contended that the withdrawals of public lands restricted the future economic development of the area, while the city spokesmen asserted that the repeal of the acts would open the public lands for entry, causing adverse riparian water rights to be vested in the new owners in conflict with the city's established water rights.

To reconcile this conflict, a compromise bill was introduced into Congress by which the City of Los Angeles would acquire for a payment of $100,000 certain rights and commitments from the federal government necessary to protect its interest in water and power developments while permitting other interests and rights with respect to those lands to be reserved to the United States for the beneficial use of residents of the area. The conveyance of these interests and rights is in the form of contract to provide a permanent commitment not subject to repeal by succeeding Congressman.[514]

Of the 400,000 acres of land involved, the United States government agreed to permanently withdraw 300,000 acres from settlement, location, filing, entry or disposal. Los Angeles would be granted full title to 3,000 acres littoral to Owens Lake, the right exclusive possession of 11,000 acres for reservoir sites subject to reservations of fishing, hunting and stock

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[513] U.S. Congress, House of Representatives, Committee on Public Lands, Report: Authorizing the Sale and Grant to the City of Los Angeles, California, of Certain Interests in Public Lands and Repealing a Certain Act., 50th Cong., 2d sess. Report No. 2429 (Washington: Government Printing Office, 1947), p. 6.
[514] Ibid., p. 11.

watering privileges; the right to raise and lower the level of the lake on 8,600 acres littoral to Mono Lake, the right to raise and lower underground water levels to 394,000 acres, and casements for the construction and maintenance of water and electrical works.[515]

The United States would reserve the mineral leasing and mining rights in approximately 300,000 acres subject to the rights of Los Angeles. 87,000 acres would be available for patenting and grazing rights would be reserved in all lands except the reservoir sites. Fishing, hunting and other recreational privileges would continue to be reserved by the federal government.[516]

Administrative Organization. Prior to 1923 the operations of the Department of Water and Power in Owens Valley were primarily engineering and construction work performed by the water and power bureau. With the inauguration of the first purchase program in 1923 and 1924 a committee composed of W.H. Mathews, H.A. Van Norman and E.F. Leahey were given authority to negotiate the land purchases. Since Mathews was spending most of his time in Washington, D.C. working for the enactment of the Swing-Johnson bill and Van Norman was required to remain in Los Angeles in his general administrative capacity, the bulk of the responsibility fell upon the third member of the committee. E. F. Leahey, a resident in Owens Valley.[517]

In the course of time the department came to depend more and more upon the resident committeeman, giving great weight to his advice and decisions. Commensurate with his authority, Leahey came to be referred to as the General Superintendent of Owens Valley with general responsibility for construction, maintenance, and operation of power plants and

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[515] Ibid., p. 12.
[516] Ibid., pp 12-13.
[517] Dykstra, Brader and Neal, op. cit.

distribution systems in the valley and the general supervision of machine and auto shops, telephone system, irrigation system, land purchases and the leasing of city lands.[518]

With the development of the new purchase programs in 1929, the administration of land matters by the Right of Way and Land Agent came to dominate the general administrative operations in Owens Valley. In 1932 and 1933, a former member of the Board of Water and Power Commissioners, A.B. Prior was designated as the executive assistant to the board and placed in direct charge of Owens Valley matters. After Prior was re-appointed to the Board of Water and Power Commission, the earlier pattern of administration was reestablished with the Right of Way and Land Agent in charge of water and power facilities and operations.[519]

In 1936, a joint division known as the Owens Valley Division was established under the direction of T.R. Silvius, district agent, to coordinate the various phases of Department of Water and Power's operations in Owens Valley. While the operations regarding water and power administration were only loosely coordinated with the Owens valley Divisions, all of the joint divisions operating in the valley came under the immediate control of the district agent.[520] The Owens Valley Division reported to whichever chief engineer and general manager happened to be dominant.

Beginning in 1944, the operations of the Owens Valley Division has gradually been incorporated as a part of the Los Angeles Aqueduct Division of the Water System. By 1948, all functions formerly performed under the supervision of the district agent, as well as the hydrographic field operations in Owens Valley and Mono Basin were consolidated under the direction of Sydney L. Parratt, the Northern District Aqueduct Engineer. With headquarters at Independence, the Northern Section of the Los Angeles Aqueduct Division is generally

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[518] Loc.cit.
[519] Porter, Bibliography, p. 20.
[520] "Owens Valley Joint Divisions Work Consolidated by Board," Intake, XIII (August, 1936), pp. 10-11.

responsible for aqueduct operation and maintenance, land and property administration, field and office engineering, hydrologic records, commercial and consumer services, stores, clerical operations, accounting, and equipment and shops within the primary water supply areas north of Haiwee Reservoir.[521]

All public contacts in Owens Valley concerning the operations of the Department of Water and Power are integrated within the administrative framework of the Northern Section of Los Angeles Aqueduct Division. The District Aqueduct Engineer is under the immediate supervision of the head of the Los Angeles Aqueduct Division who reports to the Assistant Chief Engineer of Water Works.

The use of an integrated field organization for the administration of this water supply area was justified as an effort to accomplish the following objective:

> This move will affect greater uniformity in establishing and administering Department policies relating to problems which affects both the Department and the various Owens Valley and Mono Basin interests and in transacting business with lessees and local government agencies.[522]

While the various operations of the department have been effectively integrated on an areal basis in Owens Valley, very little has been done to share the tasks of formulating local administrative policies with the local elements in Owens Valley. The Inyo Associates have been an important influence upon departmental policies, but their influence has been exerted outside the regular policy forming apparatus. Basic policy decisions, emanating largely from Los Angeles too frequently call forth the following type of criticism,

> There have been as many ideas about relations of the City with Owens Valley in the last twenty-five years as there have been men in the office of Mayor and as appointed water and Power Commissioners. Their whim may become the ruling policy for some ten thousand Inyo residents overnight.[523]

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[521] "Aqueduct Division Executive for Inyo-Mono District Named," Intake, XXV (August, 1948), pp. 4, 12.
[522] Ibid., p. 4.
[523] Los Angeles Times, November 5, 1945. George W. Savage in guest editorial.

If we don't get the water, we won't need it.
William Mulholland, 1907

CHAPTER VI

WATER AS A CATALYST IN THE GROWTH OF LOS ANGELES

In an area of such limited water supply as Southern California, the control, utilization and expansion of these water resources is an important determinate of both the extent and pattern of community growth. As former Secretary of Interior, Ray Lyman Wilbur once observed,

> You didn't bring these millions of people here with railroad trains. Water brought them. You can have all the salt oceans, the blue skies and sunshine in the world and you will all disappear unless you have water.[524]

The dominant position which Los Angeles holds in Southern California is largely due to the Spanish pueblo rights which vested prior claim to the full water resources of the Los Angeles River; the vigor, imagination and vision of its responsible officials and civic leaders in devoting substantial capital of the community to develop new sources of water supply; and their wisdom in making these resources readily available for community development instead of seeking a lucrative profit.

The tattered lines which mark the present bounds of the Los Angeles city limits are in marked contrast to the symmetrical square of the original Spanish pueblo. Piecemeal land additions gave Los Angeles the largest area of any city in the United States, if not the world, primarily because of its superior ability to command and dispose water resources.

Local Water Supply and Community Growth

Early Boundary Changes. Los Angeles has always been rich in land area. The four square Spanish Leagues, granted to the original farming community, represented the equivalent

[524] Los Angeles Illustrated Daily News, January 29, 1930.

of 28.01 square miles of land. In 1832, during the period of Mexican rule, the territorial legislature extended the boundaries of the pueblo to include an area of sixteen square leagues or 112.04 square miles, shortly before it was raised to the rank of ciudad.[525]

But, American preconceptions did not conform to the ideas of a city with land devoted primarily to agricultural pursuits. The act providing for the incorporation of the City of Los Angeles, passed by the California state legislature in 1850 required that,

> … if such limits include more than four square miles, the Council shall within three months after they are elected and qualified, fix by ordinance the limits of the City, not to include more than said quantity of land, and the boundaries so determined shall henceforth be the boundaries of the City.[526]

[Map Showing Territory Annexed to the City of Los Angeles, California, here]

After the United States Land Commission was established to adjudicate claims to Mexican and Spanish land titles, the City of Los Angeles filed claim for sixteen square leagues of land provided by the Mexican grant. This claim was rejected but the Spanish grant of four square leagues was confirmed in 1856.[527]

In 1869 the original boundary of the pueblo was extended four hundred yards to the south by action of the state legislature as a result of persistent efforts to claim additional lands beyond the original grants which had become an integral part of the agriculture of the community.[528] This token extension included only a small fraction of the lands in cultivation under city irrigation ditches extending beyond the city boundaries.

Pueblo Rights and Annexation. The technicality of a city boundary had never interfered with extra territorial agricultural developments by river waters supplied through the city's zanja,

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[525] J.N. Guinn, A History of California and an Extended History of Los Angeles and Environs (Los Angeles, 1915) p. 205.
[526] William McPherson, Charter and Revised Ordinances of the City of Los Angeles (Los Angeles, 1873), p. 5.
[527] Guinn, op. cit., pp. 272-73.
[528] Ibid., p. 362. McPherson, op. cit, p. 95.

either in the Spanish-Mexican period or the first decades of the American period. As noted elsewhere the total acreages supplied by water though the city zanja system to extra-territorial lands was estimated at 4,500 acres in 1877, and 8,050 acres in 1888.[529]

However, plans formulated by the city in 1877 to divert the full flow of the river with an enlarged zanja system for the development of new agricultural lands both within the city and beyond its limits, brought legal action contesting the city's rights to use its pueblo water to supply extra-territorial lands in preference to lower riparian owners. After years of litigation the California Supreme Court held that the long practice of supplying waters to extra-territorial lands had not created a right for the city to continue the practice,

> Whatever may have been the case once, the city for many years has certainly had no right under its charter to sell water to outside parties for use on extramunicipal lands. When the municipal officers do this they exceed their authority, and their act is not that of the city. Under our system the exercise of such powers for a great length of time will raise no presumption of a grant to the city of such powers. Its powers are derived from its charter and from public laws, of which courts take judicial notice.[530]

At the same time the court held that the recipients of the water had not gained any right to the water:

> … it does not appear that the same lands or the same individuals have been continuously supplied. If such right existed in the community or in individuals it could be asserted against the city. But they have taken the water by purchase from the city, thereby showing that the use has not been under a claim of right on their part. Indeed, the city now not only claims the right to entirely deprive them of the water, but asserts that it will soon do so.[531]

The first wave of annexations to the City of Los Angeles came in the wake of this litigation. The areas of Highland Park and Vernon were considering annexation within a few months after the Supreme Court decision in 1895. Highland Park received its water supply from the Los Angeles City Water Company, the lessee of the City of Los Angeles for the distribution

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[529] Supra, p. 82.
[530] Vernon Irrigation Company v. City of Los Angeles, 106 Cal. 237, 252.
[531] Loc. cit.

of water for domestic use. Portions of the Vernon district received irrigating water from the city's zanjas. At a special election on October 13, 1895 Highland Park approved and Vernon rejected annexation.[532]

A few months later a large area to the south and west of the city, excluding Vernon, voted to annex to the city. This area had previously been supplied with irrigating water through the city's zanjas. In 1899 while the city was negotiating to acquire full municipal control for the domestic distributing system, Carvanza, a community near Highland Park also supplied by the Los Angeles City Water Company; and the University district, an area separating the southern and western additions at the southwestern corner of the original city limits, voted to become a party of the City of Los Angeles.[533]

These areas, which had relied substantially upon the Los Angeles city water supply systems during their initial development, did not have independent water resources to provide for continued development. Following the ruling in Vernon Irrigation Company v. Los Angeles, annexation was the logical consequence. This first waver of annexations added 14.05 square miles to the area of the city giving it a total area of 43.26 square miles at the turn of the century.

The question of whether or not water could be taken under the pueblo rights to supply annexed areas over the claims of the upper riparian owners had not been resolved in the Vernon Irrigation Company case. When this question was specifically raised in the City of Los Angeles v. A.E. Pomoroy, the court held that:

> The paramount rights of the City of Los Angeles in the waters of the Los Angeles River over the riparian rights of persons claiming under Spanish and Mexican grants are not limited to water sufficient to soupy the original pueblo, to which the city was a successor; but the extension of its limits by increase of the population must be deemed within the purview of the original grants of those waters to the pueblo, and the effect of the grant must be deemed the same as if the waters had been condemned for public use, and all

[532] Quinn, op. cit., p. 362.
[533] Loc. cit.

> possibilities of the future growth and requirement of the City were taken into consideration.[534]

This decision provided the impetus for the subsequent growth which made Los Angeles the dominant city on the Southern California coastal plain. Chief Justice Beatty, in a protest against this doctrine written in a later case, clearly pictured its consequences,

> But this is what is now decided to be the law: The City of Los Angeles, as it has been enlarged far beyond the limits of the old pueblo and as it may be indefinitely enlarged in the future, has a paramount right over all riparian proprietors above the city to the use of all the water necessary to the supply of its inhabitants. It may annex all the lands between it and the ocean, including a vast area not riparian to the Los Angeles River, and the inhabitants of this annexed territory immediately become invested with the paramount right to the water flowing in the tributaries of the river, whether above or below the ground, notwithstanding they have been used for a hundred years by the grantees of Spain and Mexico, and their successors of lands riparian to the stream. This is I concede, the logical outcome of the decision of the court in Los Angeles v. Pomeroy and for which neither Lux v. Haggin … nor Vernon District v. Los Angeles … is authority.[535]

While the pueblo right permits others to make use of water beyond the needs of the city, the only ultimate protection of the water supply for these developments is to either become a part of the city or to import a water supply from beyond the limits of the Los Angels River watershed. Since the latter alternative was not available until the completion of the Colorado River Aqueduct by the Metropolitan Water District of Southern California, annexation to the City of Los Angeles was the only practicable alternative when local water resources were exhausted.

Following the precedent of the Pomeroy case, which also established the prior right of the City of Los Angeles to the underground flow of the Los Angeles River, Los Angeles asserted its prior claim to the water flowing under the Tujunga Wash at the juncture of this tributary with the main flow of the river. The artesian waters were captured in a private development known as the Pirtle Cut by excavating the gravels of the wash. The West Los Angeles Water Company and the Union Hollywood Water Company drew a substantial part of their water supply from this

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[534] 124 Cal. 597, 600.
[535] City of Los Angeles v. Los Angeles Farming and Milling Company, 152 Cal. 645, 653-54.

source until excluded by the priority of the pueblo right. As a result the West Los Angeles Water Company sold its distribution system to the City of Los Angeles in 1903 as did the Union Hollywood Water Company in 1915.[536]

With the city's increasing demands for all of the Los Angeles River water and "… the approaching completion of the Owens River aqueduct, a mania for annexation seemed to seize the people living in districts contiguous to Los Angeles"[537] This new wave of annexations, including the Colegrove, Hollywood, East Hollywood and Arroy Seco districts, brought 31.18 square miles of additional territory into the city limits before any Owens River water was delivered to the San Fernando Valley.

Surplus Water and Territorial Growth

When the Owens River water first arrived in 1913, the imported water supply was expected to be five times as great as the local supply previously available for use in the Los Angeles area. This fact created one of the most momentous problems ever presented to city officials. How was this surplus to be disposed?

Public Hearing. To secure the sense of the community on the problem of disposing surplus water the city council held public hearings twice weekly from September 20 to October 7, 1910. The suggestions made at these hearings grouped themselves into the proposals: (1) that no part of Owens River water or power should ever be alienated without the consent of two-thirds of the voters; (2) that the surplus water should go to adjacent areas where there was the greatest likelihood of annexation; (3) that the selection of areas for the disposition of the surplus water should be made by city officials to facilitate the possibility of the future consolidation of city and county government; and (4) the city should sell its surplus water to realize the greatest

[536] William Mulholland, "A Brief Historical Sketch of the Growth of the Los Angeles City Water Department," Public Service, IV (June, 1920), p. 3.
[537] Guinn, op. cit., p. 363.

immediate financial return to repay the cost of the aqueduct.[538] The center of future controversy was apparent from the incompatibility of charging the highest price that the water market would bear to such nonfiscal policies as annexation and city-county consolidation.

Mayor Alexander's Consolidation Commission. Immediately following the public hearings Mayor George Alexander urged the city council to establish a commission of nine representative citizens to explore the problem of securing the consolidation of city and county government as the most practicable solution to the problem of wisely disposing the surplus aqueduct waters. In making this recommendation, Mayor Alexander enunciated his own conclusion,

> It must be obvious…from the public hearings…that a number of legal difficulties are involved in the sale and distribution of water and power, either to neighboring cities for redistribution by them, or the sale by this City of such water or power directly to consumers outside of the City. Many of those who have addressed your honorable body regarding this matter have clearly pointed out the difficulties surrounding the distribution of the City's power and water would be practically, if not entirely, removed by the expansion of the City boundaries so as to include the territory over which the water and power would be distributed. This would apparently lead to the conclusion that such territory should be under one governmental control, and that such governmental control should be exercised by what is known as 'City and County government', modified or specially framed, if necessary, to meet our local conditions.[539]

On November 15, 1910 Mayor Alexander created a special consolidation commission appointing Leslie R. Hewitt, J.A. Anderson, W.B. Mathews, S.C. Graham, S.A. Butler, L.A. Handly and D.K. Edwards to serve.[540] In a message to the commissioners, the Mayor instructed them that,

> … the primary purpose of your appointment is to determine the proper method of disposing of the city's surplus water and power, and that the secondary object is the consideration of that other very important problem of consolidation.[541]

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[538] Los Angeles Express, October 7, 1910.
[539] Los Angeles, Council Records, LXXXII: 473-74.
[540] Los Angeles Examiner, November 16, 1910.
[541] Los Angeles Examiner, December 13, 1910.

While this commission failed to resolve the problem, its members provided much of the leadership for the struggle which was to absorb local attention for several years.

The Quinton, Code and Hamlin Report. Early in 1911 the Public Service Commission established a Board of Consulting Engineers including J.H. Quinton, W.H. Code and Home Hamlin to investigate the surplus water problem, to estimate the quantity of aqueduct water not required for consumption within the existing area of the city and formulate a program for the disposal of this surplus water.

Following their investigation, Quinton, Code and Hamlin estimated that a flow of 480 cubic feet per second would be available from the Los Angeles River and the aqueduct with additional possibility of securing an average floor of approximately 80 cubic feet per second from return water if San Fernando Valley was irrigated.[542]

Within the existing area of the city it was estimated that there were 45,000 acres of habitable land which would require about 6,000 miner's inches or 120 cubic feet per second on the basis of an average daily consumption rate of one miner's inch of water to 7.77 acres of developed urban land. Even with more intensive development, they did not expect the rate of consumption to exceed one miner's inch to five acres of land or 9,000 miner's inches for the 45,000 acres to meet the ultimate need in the existing area of the city. Without considering the utilization of return water, 360 second feet or 18,000 miner's inches would be available for surplus uses based on the existing estimates of supply and consumption.[543]

On the basis of experience in Riverside, California, the duty of water for the irrigation of citrus was found to be one miner's inch of constant flow for seven and one-half acres or one

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[542] J.H. Quinton, W.H. Code, and Home Hamlin. Report Upon the Distribution of Surplus Waters of the Los Angeles Aqueduct (Los Angeles, 1911), p. 4.
[543] Ibid., p. 5.

miner's inch flow to five acres during the irrigating season of 250 days.[544] Thus the duty of water for urban land use was almost identical with the irrigation requirements for a comparable area of land with the irrigation requirements for a comparable area of land. With an estimated surplus of 18,000 miner's inches or 360 cubic feet per second, it was concluded that the surplus water from the aqueduct would supply water for irrigation of 135,000 acres of land.[545]

Considering the physical features of San Fernando Valley with the tremendous storage capacity of its underground reservoir to capture percolating water, Quinton, Code and Hamlin recommended that San Fernando Valley should receive first consideration as the area where surplus aqueduct water be devoted to irrigation. They estimated

> … that at least one-fourth of all the water used in San Fernando Valley will eventually return to the Los Angeles River as underflow and can be utilized a second time.[546]

Within the San Fernando Valley they suggested the following districts for development by aqueduct water:[547]

District	Acres	Miner's Inches
McClay	4,000	535
Pacoima	5,000	666
Fernando	16,500	2,200
Hission	5,000	666
Chatsworth	30,580	4,077
Glendale	12,000	1,600
Providencia	18,000	4,000
Total	91,080	13,744

The second area selected for development with surplus aqueduct water was the so-called Cahuenga area which included the coastal plain extending from the foot of the Santa Monica

[544] Ibid., p. 6.
[545] Ibid., p. 8.
[546] Ibid., p. 11.
[547] Ibid., p. 9.

Mountains southward to include the area of Palms between Santa Monica and the existing city limits. Although the physical conditions were not as favorable as San Fernando Valley some of the water used for irrigation could be recaptured by pumping for re-use within the Los Angeles area. It was estimated that 4,000 miner's inches of surplus water could be used to supply 30,000 acres of land for irrigation in this area.[548]

Beyond the requirements of the San Fernando Valley and the Cahuenga district, Quinton, Code and Hamlin recommended that 1,500 miner's inches of water be allocated to irrigate 11,290 acres of land in the Pasadena, South Pasadena and Alhambra area and 350 mine's inches of water for the irrigation of 2,670 acres of land in the Bairdstown area. But they cautioned,

> … that any water taken from the Los Angeles aqueduct and given to the Pasadena, South Pasadena, Alhambra and Bairdstown districts … will not yield any return waters by seepage for use elsewhere by the City of Los Angeles.[549]

In regard to the East San Gabriel region, including the Azusa, Glendora, Covina and San Dimas districts, they warned that the cost for distribution of the water would be excessive since the area was largely irrigated from local supplies. The extra height required for a gravity flow would necessitate the diversion of the water for the East San Gabriel Valley at a point above the power drop in San Fernando Valley resulting in a loss of power which would amount to fifty dollars per acre when capitalized.[550]

In addition to the recommendation for the development of specific areas because of their relative hydrologic advantages, Quinton, Code and Hamlin suggested: 1) that annexation to the City of Los Angeles should be required as a condition to the allocation of surplus water to any of these districts; 2) in case annexation could not be immediately affected, "… that water should not be furnished unless there is a reasonable assurance that it will ultimately become a part of the

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[548] Loc. cit.
[549] Ibid., p. 19.
[550] Ibid., p. 24.

City;" 3) that all districts be required to pay in advance the cost of the main distribution conduits to be constructed by the City and to assume its proportionate share of taxation to cover the cost of the aqueduct; 4) that adequate reservoir capacity for storage of water below the aqueduct was vitally essential if the heavy flow of water required for the generation of electrical energy during the winter season was to be available for irrigation during the following summer.[551] In support of their annexation policy, Quinton, Code and Hamlin state,

> This would not only eliminate many important legal questions involved, but would simplify the distribution of the water and insure maximum economy in the administration, operation, and maintenance of the water system. It would also enable the City to take such steps as are necessary to insure proper sanitary control of the entire water supply.[552]

On the question of the city-country consolidation, it was "quite evident" to Quinton, Code and Hamlin that the city could not be made as large as the present county because of its inability to supply water for such a large area. However, they recognized that,

> … a county may certainly be made as small as the City, and it is quite possible that the City of Los Angeles may eventually grow to such an extent as to include all of the districts which we have considered as favorably situated for a share in the water in the Los Angeles aqueduct.[553]

The local reaction to the real estate speculation in San Fernando Valley and the charges about the Owens River aqueduct "plot" had become sufficiently intense to suspend formal consideration of the Quinton, Code and Hamlin report for another two years. Land in San Fernando Valley worth $100 an acre had increased ten fold in price with the prospect of importing water from the Owens River to Los Angeles. Since the land holdings in the San Fernando Valley continued to remain in unusually large parcels, the relatively few people who

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[551] Ibid., p. 20.
[552] Loc. cit.
[553] Ibid., p. 15.

controlled these properties realized tremendous profits. As Mulholland once declared, "The capitalists have stolen the unearned increment for the next twenty years."[554]

The Graham Plan. An alternate program for the disposition of surplus water was proposed in order to avoid making the city a partner in land speculation and to make the Owens Valley Aqueduct enterprise as profitable as possible to the city. The authorship of this plan was generally credited to S.C. Graham, a member of May Alexander's Consolidation Commission and later a member of the Board of Public Service Commissioners.

The Graham plan proclaimed the objective of placing the water to the highest economic use while bringing the highest possible financial return to the city. The highest use of the water would be realized by the simple expedient of setting the water rates at the highest price which would dispose of all of the surplus water.[555] In words of the contemporary press, the Graham plan was,

> … an automatic process by which any consumer, who, for a period, supplies the water to a lower or less profitable grade of use, may, to put it roughly be 'squeezed' into a position where he will voluntarily refuse to continue taking the water service, thus enabling the city to recover the water thus served without controversy and without the payment of damages for improvements.
> … whenever the public service desired to recover the water, the commission will raise the water rates to a point where the consumer of lower uses cannot afford to pay them.[556]

The operation of the principle of supply and demand in water marketing required an extensive water distribution system to reach a much larger territory than the water would adequately cover. Otherwise there would be little competition between the "lower" and "higher" uses for the available water supply. Annexation and the acquisition of any right to the municipal water supply was antithetical to the Graham plan.

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[554] Los Angeles Record, March 22, 1912.
[555] Los Angeles, Board of Public Service Commissioners, Eleventh Annual Report of…for the Fiscal Year Ending June 30, 1912 (Los Angeles, 1912), pp. 4-5.
[556] Los Angeles Record, September 12, 1912.

Mayor Alexander and the Good Government Organization, which controlled the policies of the Los Angeles city government at that time, were won over to the support of the Graham plan. Following his re-election as mayor, Alexander secured the appointment of four new members to the Public Service Commission, including S.C. Graham, who were committed to the "devotion of the water to the highest use."

The plan, as formulated for the transportation of the surplus water to areas serving 224,700 acres of potential irrigable land through a series of conduits to be financed by municipal bond issues totaling $8,400,000. One conduit was to run from the aqueduct though the Santa Monica Mountains at Franklin Canyon to supply water for the Providencia district, the western areas of the City of Los Angeles and the Cahuenga and Inglewood districts. A branch of this first conduit was to divert 1,650 miner's inches of water north of the Santa Monica Mountains to supply a potential development of 17,400 acres in Glendale area.[557]

A second major conduit was to divert aqueduct water around the Verdugo Mountains through La Cresenta and la Canada valleys, to Pasadena, and east as far as San Dimas to supply a potential development of 89,000 acres of land with 9,000 miner's inches of water. Three smaller conduits would supply about 40,000 acres in the Mission, Fernando and Chatsworth districts of San Fernando Valley.[558]

The Contest for Popular Approval. On September 25, 1912 this plan was approved by the city council for submission to the electorate on the advisory referendum or "straw vote" at the regular state election on November 2, 1912. During the election campaign, J.B. Lippincott, Assistant Chief Engineer of the Los Angeles Aqueduct spoke actively in opposition to the proposal and William Mulholland's opposition was generally known, although he did not

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[557] Los Angeles, Council Records, LXXXIX: 609.
[558] Ibid., p. 610.

actively enter the campaign.[559] On election day the municipal citizenry approved the plan by a majority of nearly two to one.[560]

On January 8, 1913 the city council approved the submission of bond issues to carry out the Graham plan at special municipal election to be held on February 25, 1913, after discarding proposals by Mulholland favoring the supply of surplus waters to areas which would provide their won distribution systems and ultimately become a part of the city by annexation.[561] Two days later both Mulholland and Lippincott publicly declared their opposition to the Graham plan and actively entered the campaign, speaking and writing in opposition to policies of their own governing board and in support of the so-called Mulholland plan, enunciated in the Quinton, Code and Hamlin report.[562]

With increasing opposition, the city council deferred the election to March 25 and later to April 15.[563] Before the election finally occurred the controversy became exceedingly intense. S.C. Graham and F.G. Henderson, president of the Public Service Commission, carried the fight for the Graham plan while Mulholland and Lippincott provided their principal opposition.

Graham charged that the opposition to the bonds gave credence to the Socialists' contentions about the aqueduct "plot".[564] Others asserted that the existing area of the city, San Fernando Valley and the Cahuenga district would never require more than one-half of the aqueduct water.[565] Henderson and Graham plead for the devotion of the surplus waters to the highest economic use in order to realize the greatest good for the greatest number and the greatest profits to the city.

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[559] Los Angeles Express, October 26, 1912.
[560] Los Angeles Tribune, November 3, 1912. Partial returns reported a vote of 42,272 in favor to 23,560 in opposition to the proposition. The election is not recorded in the official election returns at city archives.
[561] Los Angeles Times, January, 8, 1913.
[562] Los Angeles Tribune, January 10, 1913.
[563] Ibid., February 5, 1913.
[564] Los Angeles, Express, February 1, 1913.
[565] Ibid., April 12, 1913.

Mulholland opposed the bonds,

> … for the same reason that I would be opposed to carrying water from Los Angeles to San Diego. Because the district is not contiguous to Los Angeles and it will never become a part of the City.
>
> In putting water there we would be practicing a base deception on the people who will later come there as innocent purchases and from whom it is declared intention of the high liners to take the water away after they have probably made millions of dollars worth of improvements dependent of the water.[566]

During the campaign, the Graham plan had received the support of all of the local newspapers, except the Tribune and the Times which supported Mulholland in his opposition. City officials and civic organizations generally gave their support for the bonds, but a number of individual civic lenders joined the opposition.

On election day the only water bond issue to carry provided for the conduct to supply the western area of the city with a trunk line from the aqueduct through Franklin Canyon. The other bonds for conduits to Chatsworth and to San Dimas were defeated by substantial majorities.[567] With this turn of events, Los Angeles was left without any official policy for the disposition of the Owens River water scheduled to arrive within a few months.

Mayor Rose and the Annexation Commission. The change in the city administration, when Henry H. Rose assumed the office of mayor on July 1, 1913, did not seem to bring any change in official opposition to the annexation policies of the Mulholland plan. Shortly after taking office Mayor Rose declared,

> There is much opposition to the annexation plan, the idea of annexing great stretches of comparatively cheap farm land in the city proper being repugnant to those who know how the city is financed and governed. The annexation campaign in the city, where, of course, it would find its only opposition, would probably be made on the plea that only thus can Los Angeles market her water. But this is a transparent bluff on the part of outside

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[566] Los Angeles Times, April 15, 1913.

[567] Ibid., April 16, 1913. Los Angeles Election Records, Vol. I, p. 182. The official vote on the bonds for the Chatsworth line was 21,460 to 28,290, and the San Dimas line was 15,888 to 34,762.

> districts, for without the water their lands are practically of no value for agriculture of horticultural purposes.[568]

Just following his conversion to full support of the aqueduct and Mulholland's program, Mayor Rose sought the approval of the annexation program. The mayo's new appointees to the Public Service Commission were sympathetic to the Mulholland plan of annexation. On August 29, 1913 a resolution was adopted by the Public Service Commission subject to council approval urging that 1) the surplus aqueduct water be sold only to territory that had already, or would likely become, an integral part of the city; 2) the land owners desiring surplus water provide their own distribution systems constructed under the supervision of water bureau engineers according to city designs and specifications; and 3) the distribution system became the property of the City of Los Angeles, upon annexation. The rate for irrigation water was tentatively set at twelve dollars per acre foot.[569]

Following the adoption of this resolution favoring annexation as a condition to the sale of surplus water by the Public Service Commission, Mayor Rose transmitted a message to the city council urging the council to establish a representative citizen body to be known as the Greater Los Angeles Commission to investigate the problem of surplus disposal. With completion of the aqueduct only about two months away surplus water was "… without doubt the most pressing problem in municipal affairs in Los Angeles…."[570] The mayor anticipated that annexation would be the proper solution to the problem,

> … since no permanent right to water can be acquired by purchasers unless they be inside the city itself, and since very few land owners are desirous of contracting for a temporary supply of water for irrigation….[571]

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[568] Los Angeles Tribune, July 13, 1913.
[569] No text provided in original.
[570] Los Angeles, Council Records, XCIII: 360.
[571] Ibid., pp. 361-62.

The possibility of city-county consolidation was looked upon as the next logical step after the process of annexation had run its course. Mayor Rose recommended that the Greater Los Angeles Commission include nine members designated by the council and nine members to be appointed by the mayor, representative of the City of Los Angeles. In addition he proposed that the mayor be authorized to name two representatives from each of six surrounding districts within the San Fernando Valley, West San Gabriel Valley and the Los Angeles coastal plain.[572]

Instead of following the mayor's suggestion for the Grater Los Angeles Commission, the city council created an Annexation Commission composed of the mayor, Martin F. Betkouski, chairman of the Public Service Committee of the council and seven representative citizens including Miles Gregory, George Dunlap, George Harrison, Ora Monette, Ralph Criswell, Leslie Hewitt and J.A. Anderson.[573]

In substance this commission approved the policies formulated in the resolution of the Public Service Commission with some relatively insignificant modifications. In support of its policy the Annexation Commission argued that only annexation or consolidation would give sufficient permanency in water rights to make it possible for the new territories to finance their own distributing systems.[574]

Serious doubts were raised as to the legal position of the city in following any policy other than annexation in the disposition of surplus water. The California State railroad Commission, following the favorable results of the advisory referendum on the Graham plan, had expressed the opinion that it had jurisdiction to fix raters for water sold to consumers outside the city.[575] The possibility that the doctrine of the Vernon Irrigation Company case, denying

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[572] Ibid., p. 362.
[573] Ibid., p. 542.
[574] Ibid., Vol. XCIV: 140-141.
[575] Los Angeles Tribune, November 3, 1912.

rights of extra-territorial consumers of municipal water, would be reversed, bringing outside regulation and the establishment of adverse water rights, seriously disturbed the commission.

With a vision of the future, the Annexation Commission concluded:

> Annexation and consolidation will give Los Angeles official standing as the metropolis of the Pacific Coast. Greater Los Angeles, co-extensive with the territory receiving aqueduct water, will have a population, assessed valuation, bank clearings, building permits, etc., in excess of any other city on the Pacific Coast. All this has an economic value to which Los Angeles is entitled by reason of the great investment it has made and the risk it has incurred in the Owens River aqueduct enterprise. Wherever the aqueduct water is placed—be it north, south, east or west—there will the greatest development of the future be found, and that development should be a part of, and help constitute the Greater Los Angeles that is to be.[576]

The policy recommended by the Annexation Commission was approved by the city council and the commission was requested to continue in operation to assist in realization of its recommendations. After three years of intense controversy, the way was clear for the accomplishment of the recommendations of Quinton, Code and Hamlin. Except for the acquisition of the Owens River water supply, probably no more important decision was ever made by the City of Los Angeles.

The Great Annexation Movement, 1915-1927. The people of San Fernando Valley immediately formulated plans to meet the necessary requirements to secure aqueduct water for the irrigation of their land. The plan provided for the organization of an irrigation district under the provision of the Shenk Act authorizing the creation of special county water works districts. While the act vested the control of the works and construction with the county board of supervisors, the Los Angeles County Board of Supervisors was agreeable to an informal arrangement with the Los Angeles City Public Service Commission to place the responsibility

[576] Los Angeles, Council Records, XCIV: 141.

for the formulation of plans, specifications and the actual construction of the distribution system with the water bureau and its chief engineer, William Mulholland.[577]

Los Angels County Water District No. 3 with an area of 74,534 acres was formed and bonds were voted for the distribution system following this plan. Construction of the waterworks system did not start until after the annexation proceedings had been completed. All other annexed areas provided the funds for the construction of the water distribution systems with special bond issues authorized by special municipal improvements districts organized for this purpose. The expenditure of the funds and the construction of the water distribution system were administered by the water bureau and the Public Service Commission.[578]

Early in 1915 an area totaling 108,732 acres in San Fernando Valley including County Water District No. 3, approved annexation to Los Angles by an overwhelming majority.[579] At the Los Angeles primary municipal election on May 4, 1915 the annexation of San Fernando and Palms an area of 4,712 acres below Beverly Hills, was submitted to the voters of Los Angeles for approval.

The election was actively contested by S.C. Graham and the supporters of his plan for the sale of surplus water. The Annexation Commission and William Mulholland led the forces favoring annexation which were now supported by various official city bodies, the Los Angeles Chamber of Commerce, the Realty Board, the Hollywood Board of Trade and the Metropolitan newspapers except the Los Angeles Record.[580] At the election the local citizenry approved the annexation of San Fernando Valley by a vote of 37,662 to 24,982 and the annexation of Palms

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[577] Los Angeles Times, December 17, 1913.
[578] D.A. Lane, "Los Angeles City Water Sources," Intake, II (February, 1924), pp. 7-10.
[579] Los Angeles, Election Records, Vol. I, p. 403. The vote was 681 to 25 in favor of annexation.
[580] Los Angeles Times, May 4, 1915.

by 38,829 to 20,845.[581] The city had been more than doubled in area, increasing from 107.62 square miles to 284.81 square miles at one stroke. At the municipal general election a few weeks later the area of Bairdstown immediately cast of the original pueblo boundary was annexed.

The controversy over annexation or the sale of water to areas outside of the city was not finally settled until June, 1916 when two proposals, one to permit the sale of surplus water to the cities of Santa Monica and Sawtelle, and the other to authorize the sale of aqueduct water to mutual water companies, were presented to the citizens of Los Angeles at a special election. Both of these proposals were defeated while the annexation of the Occidental area and the Westgate district were approved by the following votes.[582]

Issue	Yes	No
Occidental Annexation	30,635	21,472
Westgate Annexation	29,103	23,440
Water Sale, Santa Monica and Sawtelle	20,694	30,570
Water Sale, Mutual Water Companies	17,516	31,938

With this confirmation of the annexation policy no serous consideration was again given to propositions for the purchase of water by outside territory. An appeal, cloaked in patriotism, made by Antelope Valley ranchers for surplus water to aid the war-time production of food was rejected by the Public Service Commission on the grounds that annexation was the essential prerequisite to the sale of water.[583] However, it is noteworthy that had the annexation policy required bond issues for its realization the necessary two-thirds majority would not have been available for approval.

During the twelve years from 1915 to 1927 the annexation movement, arising from the availability of surplus aqueduct waters, marked one of the most significant developments in the

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[581] Los Angeles, Election Records, Vol. I, p. 265.
[582] Ibid., p. 378.
[583] Los Angeles Times, June 27, 1917. Los Angeles Record, December 1, 1917. "For City Only," Public Service I (July, 1917), p. 7.

history of Los Angeles. Annexation campaigns were waged in every surrounding community. In some communities defeat for the annexationist merely meant another campaign, with increased vigor and determination. In long established communities both sides fought as though their future survival were at stake. The advocates sought the new water supply as a condition for new growth, while the opposition, fearing the obliteration of their separate corporate existence, fought back as though they were facing extinction.

As a result of this intense spirit of localism most of the surrounding incorporated communities resisted annexation, carefully managing their local water supplies until importations of Colorado River water were made available by the Metropolitan Water District. The only incorporated communities consolidated with Los Angeles during this annexation movement were Sawtelle, Hyde Park, Eagle Rock, Venice Watts and Barnes City.

During the first five years of the annexation movement vast expanses of agricultural lands were brought within the city limits including practically all of San Fernando Valley, Westgate, Palms, West Adams, West Coast, and Bairdstown. In addition several smaller residential areas near Highland Park, including the Occidental, St. Francis and Hill districts, and in the harbor area, including the Fort Macarthur, Peck Harbor View and the Dodson districts, were annexed to secure a stable supply of water for domestic purposes. The war-time expansion in the San Pedro area had created a demand for in excess of the local water supplies. During the five years from 1915 to 1920 the area of the city was increased by 256.75 square miles of new territory increasing the size of the city nearly two and a half times its size when the aqueduct was completed.

Almost one and one-half years elapsed between the annexation of Chatsworth and the annexation of La Bron in February, 1922. This introduced the second phase of the annexation

movement which lasted until 1927. A dry cycle of years with intense droughts from 1923 to 1925 brought a new rush to Los Angeles' spigot.

Although extensive areas of mountain lands, such as the Laurel Canyon and Providencia additions and irrigable areas such as Lankerahim entered the city between 1922 and 1927, the dominant characteristic of this phase for the movement was the annexation of a large number of small communities and unincorporated subdivisions seeking water for domestic use. The five incorporated municipalities to join the city during this annexation movement were consolidated during ht second five-year phase. In contrast to the vast areas of agricultural land annexed before 1920, only 76.77 square miles were annexed between 1922 and 1927.

On the whole, the annexed areas adhered very closely to the original recommendations of the Quinton, Code and Hamlin report. By 1927 all of San Fernando Valley was included within the City of Los Angeles with the exceptions of the cities of San Fernando, Burbank, Glendale, Tujunga and Universal City and some very limited areas on the western fringe of the valley. Most of the so-called Cahuenga district and the Bairdstown district were annexed. Except for the Watts addition little was added to the eastern boundary of the city. In the northeastern area, the city limits were extended to include Eagle Rock, Occidental and Annandale which formed a part of the Glendale district in the original Quinton, Code and Hamlin report. In addition substantial areas were annexed to the city south of Cahuenga district beyond the Baldwin Hills including the West Coast annexation, Angeles Mesa, Hyde Park and the Wagner district.

The significance of Owens River water to the annexation movement was further indicated by the events leading to the conclusion of the movement. In its annual report for the year ending June 30, 1922, the Public Service Commission warned against the tendency to spread over too

great an area for the sole purpose of providing the newly incorporated areas with an adequate water supply. The Commission recommended that,

> … annexation in the future should be confined to territory that will tend to consolidate such regions as will tend to make the City's outline more symmetrical, by correcting the present boundaries into a less ragged outline.[584]

Later in the year William Mulholland reiterated this warning adding that when the existing irregularities in the city's boundaries had been made more symmetrical"… it will be found that there is quite sufficient area within the city to absorb, when fully developed, the present water supply."[585] These warnings only seemed to increase the requests for annexation.

In 1925, the Public Service Commission advised the city council that it was not possible to provide an adequate water supply to the large number of districts seeking to be included within the city limits.[586] Later during the same year W.P. Whitsett, a member of the commission stated in a conference with the city council that it would be,

> … courting disaster to follow the suicidal course of permitting big blocks of the county to annex to Los Angeles until a permanent new water supply is obtained.[587]

In 1927, the end of the annexation movement was marked by action of the Water and Power Commission requesting that no more territory be annexed to the city until a new source of water could be made available.[588] While isolated annexations have been made subsequently, they have been insignificant in comparison to the numerous annexations of the 1915-1927 period.

During the twenty-two years since 1927 only 12.18 square miles of additional territory has been annexed to the City of Los Angeles. Of these recent annexations, the consolidation of

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[584] Los Angeles, Board of Public Service Commissioners, Twenty-First Annual Report of…for the Fiscal Year ending June 30, 1922 (Los Angeles, 1922), p. 11.
[585] Los Angeles Herald, December 18, 1922.
[586] Los Angeles Times, May 16, 1925.
[587] Los Angeles Record, November 21, 1925.
[588] Los Angeles Express, August 2, 1927.

Tujunga with an area of 8.70 square miles represents an isolated parcel in the San Fernando Valley annexations which joined the city after the close of the annexation movement. This great annexation movement came and passed as concomitant of the surplus water made available by the aqueduct from Owens Valley. The territorial characteristics of the City of Los Angels are today largely the product of the municipal policies for disposing this surplus water.

Water and Internal Growth

In managing its water resources the City of Los Angeles has always followed the policy of making these resources immediately available for the growth and development of the community rather than seeking to make a profit from its water and power utilities. After the close of the first full harvest year in San Fernando Valley, the Public Service Commission enunciated this policy in a review of its irrigation operations:

> The irrigation revenue from the Valley for the fiscal year was approximately $200,000.00, an amount hardly sufficient to justify the low rate at which the water was sold. It should be kept in mind, however, that the City, by its low water rates, has placed a great supply of water immediately into use over a large area, and that while there has been revenue to the Department therefrom, the largest good has resulted to the municipality as a whole in supplying the labor and materials of production, and afterwards noting as a clearing house for the disposal of the produce, the wealth going into business houses or returning to the Valley as the necessities of life. [589]

This policy as applied to the distribution of electrical power was given comparable enunciation by E. F. Scattergood when he declared:

> The purpose of the City in itself developing power along the aqueduct, and distributing it within the City, is not only the provision of electric service at low rates for domestic and commercial purposes, but also to encourage industry by providing an abundance of electric power at rates that are both low and stable.[590]

Irrigation. Los Angeles has always applied excess water to the irrigation of crops within the city limits. When the pueblo of Los Angeles was first founded its lands and water were

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[589] Los Angeles, Board of Public Service Commissioners, Seventeenth Annual Report…for the Fiscal Year Ending June 20, 1918 (Los Angeles, 1918), p. 6.
[590] Los Angeles Examiner, April 3, 1926.

primarily devoted to the irrigation of crops. Agriculture continued to be the primary land use within the city until after the arrival of the railroads when subdivisions and urbanization gradually displaced the groves and vineyards.

Prior to the development of the high-line zanjas the total acreage under irrigation within the city limits was about 4,500 acres with an equal area outside the city receiving surplus water from the zanjas. By 1886 the crop lands within the city had increased to 6,997 acres in irrigated crops within 4,240 acres beyond the city limits receiving water from the zanjas. But within two year the ratio was reversed by the influx of people and the subdivision of farms into town lots. Only 2,937 acres remained under irrigation within the city in 1886 while water from the zanjas supplied 8,050 acres outside the city limits.[591]

The Mulholland plan of annexing relatively undeveloped acres and devoting the surplus water of the aqueduct to irrigation was based on the city's earlier experiences with agriculture. Since the duty of water required for irrigation and urban land use developments were approximately the same, it was possible to place the surplus water on the lands for intensive cultivation as a profitable means of utilizing the available water. Agriculture provided an economic basis for additional population and commercial development until subsequent industrialization and urbanization eventually displaced the farms. As the land use patter of the city underwent urbanization, ample water supplies were available for the new commercial and industrial pursuits. In this manner, agriculture has played a most significant role of city-making in Los Angeles.

The new areas brought into the city in the 1915-1927 annexation movement, especially during the first phases were notable largely for their state of undevelopment. The 265.75 square miles of land annexed during the 1915-1920 period added only 12,701 persons to the total

[591] William Hall, Irrigation in California (Sacramento, 1888), Vol. II., pp. 555-56.

population of the City of Los Angeles. While the city had grown from a population of 319,000 in 1910 to an estimated population of 1,192,000 in 1925 only 45,782 of this increase was attributed directly to annexation.[592]

Although extensive development in irrigated farming occurred in many of the annexed areas, only the San Fernando area was developed as an integral irrigation project, supplied with water at a special irrigation rate. The other areas relied largely upon the local underground water resources, made available by the satisfaction of domestic use requirements from the city system, or were supplied with city water by a combined domestic-irrigation rate which was appreciably higher than the irrigation rate. Since these projects were never placed on a systematic basis there is no record available as to the extent of these irrigated crop lands although it is doubtful if they exceed 10,000 acres. As the accompanying land use map indicates, the agricultural developments within the City of Los Angeles are almost entirely confined to San Fernando Valley.

[Map Showing Agriculture Within the city of Los Angeles, California, here]

Irrigation was developed very early by the Mission of San Fernando and later, on some of the ranchos, especially the Feliz rancho. The total extent of irrigation probably never exceeded the 3,000 acres under irrigation ditches in the San Fernando Valley during 1914.[593] Except for this relatively small acreage supplied by local water, the agricultural economy of San Fernando Valley in 1914 was devoted to raising grain by dry farming methods.

Following the annexation of San Fernando Valley the first aqueduct water was sold for irrigation on May 26, 1915. During the 1915 irrigating season approximately 10,000 acres were placed under irrigation with a makeshift distribution system along the main city trunk line which

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[592] Los Angeles Examiner, November 1, 1925.
[593] Los Angeles, Board of Public Service Commissioners, Sixteenth Annual Report…for the Fiscal Year Ending June 30, 1917 (Los Angeles, 1917), p. 33.

traversed the central portion of the San Fernando Valley. At the same time the construction of the permanent distribution system for the Los Angeles County Water Works District No. 3 was undertaken, immediately upon annexation. The distribution system for the entire San Fernando Valley annexation including the Municipal Water District No. 1 was completed in 1917 extending its network of liens over a tributary area of 100,000 acres.[594]

The acreage under irrigation continued to increase as the distribution lines were extended. In 1916, the acreage under irrigation with aqueduct water increased to 18,000 acres and in 1917 to more than 30,000 acres. The total crop acreage in 1917, including second crops amounted to more than 45,000 acres. The crops included 14,500 acres in sugar beets, 12,000 acres in beans, 9,000 acres in potatoes, 5,000 acres in citrus trees, 8,000 acres in deciduous trees, 1,000 acres in alfalfa and 1,000 acres in general truck garden crops.[595]

The exceptionally heavy duty of water for sugar beets, requiring three flooding of six to eight inches in depth during the irrigation season; and the practice of a large number of the farmers during the first year of irrigation, of following the planting of grain as a first crop with a heavy irrigation to prepare the soil for a second crop of beans and potatoes placed an exceptionally heavy demand upon irrigation water. During these periods of peak demand the daily use of irrigation water in San Fernando Valley reached a flow of 17,000 miner's inches, nearly equivalent to the full flow of the aqueduct.[596]

With the great war-time demands for food stuff, San Fernando was in full agricultural production in 1918 with a total crop acreage of 75,000 acres being irrigated by aqueduct water.

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[594] Ibid., p. 34.
[595] Ibid., p. 33.
[596] Ibid., Seventeenth Annual Report, p. 39.

The Public Service Commission estimated the gross crop value for the 1918 irrigation season"… at not less than $7,500,000.00, as against approximately $3,500,000.00 of the year previous.[597]

The demands for the food stuff resulted in an unusually heavy acreage of field crops during the first transitional years of the "reclamation" of San Fernando Valley. The crops for the irrigation season of 1918 and 1919 included about 35,000 acres in beans and 17,000 acres in potatoes and truck garden crops for each year.[598]

The water requirements for these field crops created a very perplexing problem for the municipal water bureau. Their plans had been based on the assumption that tree crops, which required intermittent irrigation over a relatively long irrigating season, would dominate the agricultural economy of the valley. Beans and similar field crops required a limited but intensive irrigation season of about two months. During periods of peak irrigation demand, water in excess of 23,000 miner's inches was delivered for periods of a full week at a time. This type of demand placed loads on both the reservoirs and distributions system in excess of capacity.[599]

With altered post-war demands the bean crop decreased to 21,000 acres and the vegetable crops dropped to 5,500 acres while the acreage in orchards steadily increased and the alfalfa crop jumped to 6,000 acres in 1920.[600] In 1921 the previous season's bean crop was still reported in storage and acreage planted in beans continued to drop. By 1922 the pattern of the agricultural economy in San Fernando began to stabilize in a fairly definite pattern. Table III shows the crop history of land in San Fernando Valley supplied with water by the regular irrigation service, the

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[597] Ibid., p. 6.
[598] Ibid., p. 40.
[599] Ibid., Nineteenth Annual Report… for the Fiscal Year Ending June 30, 1920 (Los Angeles, 1920), p. 10.
[600] Ibid., pp. 20-21.

combination irrigation and domestic service and by private wells.[601] Variations in local rainfall cause some deviations of the acreage under irrigation from the total under cultivation.

In the present state of development of San Fernando Valley, agriculture continues to be the most significant land use. Including non-irrigated crops such as olives and hay the total land area devoted to agriculture was 139.8 square miles in 1943 or eighty-one per cent of the usable lends of the valley. The valley of these crops was estimated at $20,000,000 for 1943.[602] The western portion of the valley continues to remain overwhelmingly agricultural while the area east of Sepulveda Boulevard is rapidly being converted to urban land uses.

TABLE III

SAN FERNANDO VALLEY IRRIGATION

Acreage of Prime Crops
Summer Months

	REGULAR IRRIGATION SERVICE								COMBINATION SERVICE	PRIVATE WELLS
Year	**Alfalfa**	**Citrus**	**Walnuts**	**Deciduous**	**Beans**	**Truck**	**Others**	**Total**	**Total**	**Total**
1922*	6190	7646	4663	9180	7281	9391		44351		2410
1923*	6480	7830	5918	8662	9000	8703	576	47169	959	2410
1924	7493	7312	5110	6412	7678	3339	685	38029	1170	2410*
1925	7561	8421	7760	6486	11485	8972	1510	52135	3136	2410*
1926	5718	8086	5884	4435	11163	9252	1012	45550	3108	2410*
1927	5078	8176	4921	4425	7904	8627	1638	40769	3216	2410*
1928	5550	8302	7483	4828	8515	10285	1259	46222	4204	2410*
1929	6163	8506	7453	4776	9938	9658	1381	47875	4060	1762
1930	5710	8547	6931	3254	9356	10600	1266	45664	5155	1954
1931	5155	9201	6399	2300	8042	11200	1453	43750	4268	2066
1932	4334	9050	6373	2308	2026	13237	2460	39788	2307	2214
1933	4287	9064	5762	2529	4689	10062	3370	39663	2401	2945
1934	4689	9130	6361	2236	4972	10539	3029	40956	2498	2775
1935	5442	9221	6356	2067	4468	11692	1891	41137	2601	2687
1936	5688	9448	6803	2206	6201	11113	1939	43403	3048	2629
1937	5038	9685	6316	1944	7371	10323	1144	41821	2907	2755
1938	5715	9755	5980	1766	4054	8930	1787	37987	3280	2886
1939	5682	9771	6063	1082	1728	9103	2527	35956	3417	2764
1940	5679	9884	5317	844	2301	8489	1775	34289	3525	2461
1941	4935	9868	4580	1554	3200	8958	1201	34296	3628	2311
1942	5055	9788	5135	1129	4289	10410	1651	37457	2746	2318
1943*	5706	9778	6566	2651	8219	12336	1961	47217	4918	2098
1944*	5110	8745	5872	2371	7335	10899	1758	42090	4992	2164

*years were estimated since no data available.

[601] Data supplied by the Hydrographic Division, Department of Water and Power.
[602] Los Angeles, City Planning Commission, Planning For San Fernando Valley (Los Angeles, 1945), p. 3.

While there is some segregation of crops in different parts of the valley the general culture of the valley is diverse. Because of climatic conditions, the citrus groves are located within a radius of several miles from the City of San Fernando and on the western side of the valleys were minor hills give the advantage of air movement as protection from frost. Nearly all of the alfalfa coverage is located in the southern half of the valley, where the soils are deep and moist, making it possible to produce good yields with relatively light irrigation. Deciduous orchards suffered a serious decline in the early 1930's but have maintained greater stability in more recent years. Walnuts and deciduous trees are generally dispersed over the central portions of the valley among extensive field crops. The most important single field crop is lima beans.[603]

In the western and southern portions of the valley, dairy cattle, chickens and rabbits form the basis of a thriving livestock industry, supplying the local Los Angeles markets. Much of the alfalfa raised in the valley is sold to the dairies for stock food while still green.[604]

In the pattern of future developments the Los Angeles City Planning Commission expects agriculture to continue to be a significant land use factor in San Fernando Valley. City plans for the valley, which will accommodate an ultimate population of 900,000, provide for three agricultural zones in the land use plans as shown in the following map. A residential agricultural zone for suburban developments with lots of a minimum of 20,000 square feet will permit general farming, truck gardening, raising poultry and domestic animals in a valley area of sixty-three square miles. An A-2 zone providing for minimum parcels of two acres will permit very

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[603] U.S. Bureau of Agricultural Engineering, Division of irrigation, The Agricultural Situation in San Fernando Valley, California, By Paul A. Ewing (n.p., author, 1939), p. 46.
[604] Loc. cit.

intensive farming over an area of 31.3 square miles, while an A-1 zone totaling 51.5 square miles in area will be reserved for larger scale farming.[605]

[Map of Land-Use Plan, San Fernando Valley, here]

Industry. By spreading water on the soil, Los Angeles provided for its first stage of community development. In part this agricultural foundation provided the economic and communal elasticity to absorb the floods of people attracted by the Mediterranean climate of Southern California. In the resultant urbanization the administration of water and power resources played a significant role by removing the local limitations of water and power, which otherwise would have been an impediment to commercial and industrial development, and by actively promoting the location of new industries to provide for the employment of the immigrant population.

Probably the most serious obstacle to economic growth throughout the eleven western states, except the northwestern coastal area, has been the lack of an adequate water supply. The greatness of Los Angeles lay in the imagination and vigor of the leadership provided by its public officials and citizens to invest the capital of the community in new water supplies always keeping the supply in excess of the immediate future demand.

The significance of an adequate water and power supply to the development of local industry is indicated by the testimony of F.A. Sieberling, president of the Goodyear Tire and Rubber Company, the first major industrial concern to locate a branch plant in Los Angeles:

> When we came to survey the Coast…we found that Los Angeles gave us the cheapest fuel on the Coast. We found that Los Angeles had the cheapest power on the Pacific Coast where used in large quantities. We found that Los Angeles had the only supply of fresh water sufficient for our needs.
>
> When I tell you that we will be pumping, running to capacity, approximately 8,000,000 gallons of water per day, and that the City of San Diego uses a little over a half

[605] Los Angeles, City Planning Commission, op. cit., p. 11.

> of that, I think you will agree with me that San Diego was fortunate when it escaped such a thirsty industry particularly in these dry times.
>
> San Francisco is only a little more fortunate then San Diego in the matter of fresh water. It would have cost us a very large sum in installations to have provided sufficient water for our needs. We have come here, if for no other reason than water.[606]

In addition to providing the necessary water and power supply at a low cost to meet the needs of potential industrial developments, the Department of Water and Power under the leadership of E.F. Scattergood, of the Bureau of Power and Lights, actively promoted the location of industry in Los Angeles. This promotional activity has been motivated partly by the peculiar pattern of economic development of Los Angeles in which the influx of population frequently exceeded the requirements for local employment, necessitating the expansion of industrial and commercial activities to provide an expanding field of economic opportunity to absorb the surplus labor force. Speaking of this situation Scattergood once observed,

> There are many people who will come here because they must come. There are many more who insist upon coming. For these we must find employment that they may be happy and prosperous here, that they may have their homes and families and live lives of contentment.
>
> We are not concerned with making Los Angeles industrially rich and powerful; the end we have in view is to meet the needs of the thousands and hundreds of thousands who are to become our neighbors here.[607]

To attain this objective a campaign to attract new industry to Los Angeles was organized in 1917 through the Business Agents Division of the Bureau of Power and Light in cooperation with the Los Angeles Chamber of Commerce and other civic organizations.[608] The greatest single success in this campaign was the decision of the Goodyear Tire and Rubber Company to locate its plant in Los Angeles in 1919.

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[606] "Water and Power Development Brings Great Enterprise to Los Angeles," Public Service III (August, 1919), p. 1.
[607] Los Angeles Examiner, April 3, 1926.
[608] Burdett Moody, A History of the Los Angeles City Power Development (M.S., 1924), p. 14.

A large number of nationally known commercial and industrial concerns joined the procession to Los Angeles to tap the Southern California and Pacific coast markets. In the rubber industry, the Firestone Tire and Rubber Company the E.F. Goodrich, the U.S. Rubber Company and others followed the Goodyear Tire and Rubber Company to make Los Angeles the second largest rubber producing area in the United States.[609]

The Ford Motor Company and the Willys Overland Motors, Inc., located the first automobile assembly plants in Los Angeles area in 1927 and 1928. The Crane Company, a manufacturer of plumbing fixtures, Owens-Illinois Glass Company, Swift and Company, the Texas Company, Radio Corporation of America, Columbia Recording Corporation, Procter and Gamble Manufacturing Company, Anaconda Wire & Cable Company, Willard Storage Battery Company, Bethlehem Steel Corporation, United States Steel Corporation, Republic Steel Corporation, National Lead Company, the Nehi Beverage Company and many others had located major branch facilities in the Los Angeles area by 1930.[610]

Before they arrival of the Goodyear Tire and Rubber Company, Los Angeles stood twenty-eighth among the manufacturing centers of the United States. By 1929 Los Angeles had risen to ninth place in industrial production, well along the way toward becoming a major industrial center with few resources except climate, people and water.[611]

Even during the early 1930's industrial expansion continued at a somewhat retarded pace with nearly 100 new industries being established annually for a three year period from 1932 to 1933 inclusive. In 1935, 183 new industries with a capital investment of $10,500,000 were

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[609] Los Angeles, Department of Water and Power, F.O.B. Los Angeles (Los Angeles, 1947), p. 34.
[610] Los Angeles Chamber of Commerce, Industrial Department, Nationally Known Industries Operating Branch Plants in Los Angeles County.
[611] "The Undiscovered City," Fortune, XXXIX (June, 1949), p. 80.

established.[612] By 1939 Los Angeles had risen to seventh place as a manufacturing center measured in the dollar value of its industrial products. World War II brought a tremendous expansion in the industrial production, when it rose to a position second only to Detroit as a war-time industrial center. The most significant long-range development of the war-time expansion was the establishment of a new steel producing industry by the Henry J. Kaiser interests.[613]

Instead of the post-war slump which many expected, the Los Angeles area experienced a movement of industrial expansion greater than any previous period. While $325,000,000 was invested in new and enlarged industrial facilities during the war years, about $450,000,000 has been committed to the expansion of the industrial plant of the metropolitan area since the war.[614]

Many other nationally known industrial and commercial concerns placed plants in the Los Angeles area for the first time. The Hexal Drug Company of Boston, the American Potash Company of New York and the Carnation Milk Company of New York, Milwaukee and Seattle moved their headquarters to Los Angeles. As an automotive assembly center, Los Angeles ranks second only to Detroit, outstripping both Flint and Kansas City. Around the automotive assembly plants, a billion-dollar parts supply industry has developed. The clothing apparel and furniture industries are each manufacturing $300,000,000 worth of products annually to place Los Angeles among the leading textile and furniture producers.[615] In the national competition as an industrial center Los Angeles probably ranks fourth after New York and Chicago, which have resumed their traditional peace-time role as the leading industrial centers, and Detroit. In bank

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[612] Los Angeles Chamber of Commerce, Industrial Department, Statistical Record of Los Angeles County Industrial Development.
[613] "The Undiscovered City,"op. cit., p. 80.
[614] Loc. cit.
[615] Ibid., pp. 153-54.

debits and deposits, retail sales and total income payments to individuals, Los Angeles now ranks third among metropolitan areas in the national economy.[616]

The traditional transition in land use patterns has occurred in these recent industrial developments. One section of this new industrial development was described in Fortune magazine as follows:

> Thrust into this truck-farming landscape are acres of new factories, an oil refinery, power lines, railroad spurs, and the startling geometry of a synthetic rubber plant.[617]

The same pattern is occurring in San Fernando Valley. By 1920 agriculture supported a population of 19,592 people. With the boom of the 1920's, extensive subdivisions occurred in San Fernando Valley to provide for an influx of people that had increased the population to 54,268 by 1930.[618] Except for food packing and processing plants supplied by the local agriculture and the extraction of sand gravel from pits in the Tujunga wash, there was very little industry prior to 1930.

With the coming of the war, the manufacture of aircraft at the Lockhead and Vega plants in the City of Burbank provided a substantial source of employment for San Fernando Valley residents and indirectly stimulated a large number of smaller industries manufacturing parts and accessories for airplanes.[619] By 1944 the population of San Fernando Valley has increased to 165,000 people.[620]

As a part of the program of the Industrial Promotion section of the Bureau of Power and Light a number of new industries were encouraged to locate in San Fernando Valley. The two largest new plant locations there are the Chevrolet assembly plant of the General Motor

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[616] Ibid., pp. 80, 82.
[617] Ibid., p. 78.
[618] Los Angeles, City Planning Commission, op. cit., p. 7.
[619] Ibid., p. 3.
[620] Ibid., p. 7.

Corporation and a factory for the Andrew Jergens Company.[621] Even Los Angeles' great reclamation project is on the verge of becoming an important industrial area.

While many factors have contributed to the whole pattern of economic development in the Los Angeles area, the significance of water resources returns when the limits of future development are considered.

> In the last analysis, the only thing that makes Los Angeles County much different from other big industrial centers is the extraordinary number of Americans who keep moving out there. And this is a potent difference.
>
> The ultimate limitation on the population of Southern California is probably water. If Arizona were to win the long war for control of the Colorado River flow, the ceiling on Los Angeles County's population might be about five million, a million more people than now live there. If California gets the disputed water (and its experts on riparian law are supported by a good number of electoral votes), the county could probably handle nine million, and a proportionate growth of industry. Beyond nine millions the talk turns to things like distilled sea water and pipelines to the Columbia River basin.
>
> Up to the limits of the water there is no reason why Los Angeles industry should not continue to grow.[622]

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[621] "Industry for San Fernando Valley," Intake XXII (August, 1945), p. 5.
[622] "The Undiscovered City," op. cit., p. 158.

> ... the field men, after comparing their 100 different proposed routes, did find the most practicable, economical, and safest route over which to build an aqueduct from the river to the coastal plain. A route 242 miles below Boulder Dam and its terminus on the coastal plain at an elevation from which water can be served to all those who will use it.
>
> The white collar men reached their goal, too. Their achievement was the creation of new types of governmental subdivision by which a group of cities, not necessarily contiguous, could be combined for the purpose of financing, building and operating a water supply system. Their creation is the Metropolitan Water District of Southern California … which has financed, and built, and will operate an aqueduct from the Colorado River.
>
> Lynn Davis Smith, 1939

CHAPTER VII

WATER AND THE DEVELOPMENT OF METROPOLITAN GOVERNMENT

Designing A New Political Institution

The Problem. When Los Angeles was struggling to assure an adequate water supply for its expanding population, other municipalities on the Southern California coastal plain were confronted with the same problem. No other city had the comparable advantage of the prior and exclusive right to the flow of a perennial stream nor sufficient capital to import water from distant watersheds.

Before going to the Owens River for additional water, the Los Angeles Water Department conducted an exhaustive investigation of local water supplies. Wile some water could be secured on local streams by capturing the flood discharge and, at least temporarily, by additional drafts upon groundwater supplies, or by the condemnation of local irrigation water supplies for superior domestic use, these alternatives were discarded since they ".. would not only work great injury to the farming interests, but would virtually ruin towns and highly developed communities."[623]

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[623] Los Angeles City, Board of Public Service Commissioners, Complete Report on Construction of the Los Angeles Aqueduct (Los Angeles, 1916), p. 44.

After considering the importance of the development of the surrounding communities to the economic growth and development of Los Angeles, responsible water officials were,

> … led to the conclusion that the right economic policy of the City of Los Angeles was to obtain and deliver a new supply as large as it could possibly obtain and pay for, and to use this water not only for the immediate requirements of the City, but for the upbuiliding of tributary suburban country.[624]

By importing an outside source of water supply, Los Angeles enabled the continued development of surrounding communities. While a few of the neighboring communities succumbed to the inadequacy of their local water supply and annexed to the City of Los Angeles to share the imported water supply, other cities such as Santa Monica, Pasadena, Glendale, Burbank, Beverly Hills and Long Beach rejected annexation as a solution to their local water problem. Pasadena was able to supplement its supply from the Arroyo Seco, wells and by storage of flood waters from the San Gabriel River. Burbank and Glendale were able to make demands upon Los Angeles' importation of water by pumping from the underground supplies of San Fernando Valley. Otherwise the expanding demands for water in these communities had to be supplied by increasing drafts upon the underground storage.

These municipalities were in competition with the wealthiest agricultural development in the United States. Except for the San Fernando Valley, the half million acres of intensively cultivated agriculture in San Bernardino, Riverside, Orange and Los Angeles counties of the South Coastal Basin drew their water supply entirely from local sources, primarily wells. The records of the operation of these wells as indicated in the accompanying chart, reveal a marked decline in the artesian flow and a concomitant increase in pumping requirements.[625]

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[624] Loc. cit.
[625] The Metropolitan Water District of Southern California, History and First Annual Report For the Period Ending June 30, 1938 (Los Angeles, 1939), p. 14.

Similar evidence of the excessive draft upon the underground supplies existed in wells used for municipal purposes. On the site of the Continella Springs which once flowed at the surface, the City of Inglewood drew water from a depth of 150 feet, or from below sea level.[626] At the Copelin wells in Pasadena, the water level fell from a level of 154 feet when the first well was sunk in 1899 to a static water level of 190 feet in 1924, 223 feet in 1926 and 240 feet in 1929.[627] The experience of both of these cities was typical of other municipalities in the South Coastal Basin. When Southern California entered the dry cycle of the early 1920's surrounding communities were in a much more critical condition regarding future water supply compared to the City of Los Angeles.

TABLE IV

GROWTH IN USE OF WELLS IN SAN BERNARDINO, RIVERSIDE, ORANGE AND LOS ANGELES COUNTIES 1889-1930

	1889-90	1909-10	1919-20	1929-30
Artesian Wells				
Flowing wells used for irrigation	1,577	1,596	918	242
Capacity, gpm		275,700	165,000	38,000
Capacity per well, gpm		173	180	157
Pumped Wells				
Used for irrigation		3,494	4,886	5,874
Capacity, gpm		1,631,300	2,459,100	3,438,800
Capacity per well, gpm		466	504	585
H.P. used for pumping		61,000	105,800	179,100
H.P. used per 1,000 gpm		37.4	43.1	52.2
Mean lift, feet			61	77

The Initiative of Los Angeles. While the need existed over the whole metropolitan area of the South Coastal Basin, Los Angeles alone had the resources to assume the initiative for the development of a water supply from the Colorado River, over 300 miles away across high

[626] Ibid., p. 10.
[627] Ibid., pp. 16-17.

mountains and deserts. Its Department of Water and Power served as the instrumentality to inaugurate the preliminary developments until a new organization could be provided to assume the initiative and responsibility for the consummation of the project. The great wealth of Los Angeles, which constituted approximately eighty per cent of the assessed valuation and population in any prospective combination of municipalities seeking Colorado River water, provided the capital reserve to finance the construction of an aqueduct, estimated to cost nearly $225,000,000.[628]

The possibility of transporting water from the Colorado River to the Southern California coastal basin was first conceived by William Mulholland, the Chief Engineer and General Manager of Los Angeles' municipal water system. As a youth who had sailed up the Colorado and as a member of the original party led by Homer Hamlin to investigate the feasibility of power generation in Boulder Canyon, Mulholland had long been familiar with the Colorado River.

While Mulholland had unquestionably conceived the idea of using Colorado River water for domestic purposes to meet the future requirements for Los Angeles early in 1921 when with the Hamlin party, he did not consider it opportune to make a public announcement of his plans until October 23, 1923 when he requested authorization from the Board of Public Service Commissioners to make a preliminary survey to determine the feasibility of the project.[629] The request was approved and the survey party, led by Mulholland, H.A. Van Norman and E. A.

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[628] Boulder Dam Association, Colorado River Development Boulder Canyon Dam and the All-American Canal. Statements by Addison T. Smith of Idaho and Mayor George E. Cryer of Los Angeles (Los Angeles, 1925), p. 12.

[629] Los Angeles Examiner, May 29, 1930. Mulholland was quoted as saying, "For a considerable time before I broached the matter to anyone, I had concluded that Los Angeles must go to the Colorado for its domestic water.

> "The first mention I ever made of it to anyone was to Mathews. The suggestion nearly knocked him over. But I said: Give this your earnest through; it is no idle dream; there is nothing fantastic about it and it has got to come."

Bayley, set out for the Colorado River on October 29, 1923 to make the first reconnaissance of a Colorado River Aqueduct.

This reconnaissance established the feasibility of the project along several alternative routes. To secure more detailed information for the consideration of the several possible routes, field parties were organized to begin the survey of vast desert areas that had never been adequately mapped.[630] These survey groups, operating funds provided from the Department of Public Service's water revenue funds continued during 1924.

As a result of the surveys, it became evident that more extensive work was necessary to gain accurate topographical information over the whole of the area under consideration. However, on the preliminary information available, the City of Los Angeles filed an application on June 28, 1924 to appropriate a maximum of 1,500 cubic feet per second from the surplus waters of the Colorado River at a diversion site somewhere between Parker and Blythe in Riverside County, California.[631]

When the water revenue funds proved inadequate to complete the necessary surveys, a bond issue for $2,000,000 was submitted to the municipal electorate on June 2, 1925. These bonds were approved by a vote of 86,154 to 15,846 or a majority of more than five to one to provide the first formal endorsement of the Colorado River Aqueduct by the citizens of Los Angeles.[632] As soon as these funds were available the work on both the surveying and engineering aspects of the Colorado River Aqueduct project began.

From October 1923 to May 1, 1930 the field work on the Colorado River Aqueduct was performed by the Bureau of Water Works and Supply of the Los Angeles Municipal water system. Over an area of 50,000 square miles, a force averaging approximately 130 men

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[630] "Department is Finishing World's Biggest Survey," Intake VI (September, 1929), p. 2.
[631] Metropolitan Water District of Southern California, op. cit., p. 36.
[632] Los Angeles City, Election Records, II: 471.

surveyed nearly 20,000 square miles of rugged terrain which had never previously been crossed by a surveyor's instrument. Including areas which had to be resurveyed to provide great topographical detail, new maps were prepared for 24,656 square miles of area. The map work alone required an office staff of fifty persons two years to complete.[633] The extent of the work done by the Department of water and Power in preliminary surveys, investigations, engineering and construction is revealed in the following account of expenditures made by the City of Los Angeles on the Colorado River Aqueduct project:[634]

TABLE V

EXPENDITURES BY THE CITY OF LOS ANGELES FOR THE DEVELOPMENT OF THE COLORADO RIVER AQUEDUCT

From 1925 Los Angeles bond funds:	
Rights of way in Riverside County	$ 7,468.85
Buildings and Equipment	$ 98,623.75
Construction infiltration gallery at Blythe	$ 84,229.89
Drilling and proving test walls at Blythe	$ 28,491.04
Field Surveys	$ 958,795.29
Road, Earp to Parker Dam site	$ 193,668.76
Other roads and trails	$ 48,946.47
Water investigations	$ 5,001.50
Terminal storage studies	$ 22,936.27
Relief map and models	$ 27,515.63
Dam site investigations	$ 79,567.64
General engineering expense	$ 424,620.06
Preliminary surveys and investigations paid from the city revenue funds prior to availability of city 1925 bond funds: $125,745.72 Less cash on hand: $1,918.52 Less correction (R/W): 1,95123,825.24 Total cost, exclusive of interest: $2,103,690.39	

Forming a New Agency For Metropolitan Water Supply. Since the need for the imported Colorado River water existed over the entire area of the South Coastal Basin it was necessary to

[633] "Department is Finishing World's Biggest Survey," op. cit., pp. 2-3, 32.
[634] Metropolitan Water District of Southern California, op. cit., p. 55.

provide for the direct participation of all interested communities in the finance, construction, operation and government of the aqueduct project. Special problems were presented by the circumstance that the communities desiring supplementary water did not form contiguous areas, that these communities were located in four different counties,[635] and that Los Angeles had such a disproportionate share of wealth and population as to require special safeguards to protect the interests of the smaller communities if they were to be more than ineffective satellites.

Within a few days after the Public Service Department filed its application for the appropriation of 1,500 cubic feet per second of surplus Colorado River water, attention was turned to the problem of devising a new metropolitan vehicle for the transportation of water. The first proposal came from the Los Angeles Times on July 6, 1924 which suggested in an editorial that the logical solution of this problem would be a joint undertaking by Los Angeles County, San Bernardino County, Riverside County and Orange County, the four counties of the South Coastal Basin and San Diego County.

The most constructive proposal came from the executive committee of the Boulder Dam Association, an organization composed of representatives of various Southern California communities and community organizations leading the campaign for the authorization of the Boulder Canyon dam and related projects for the development of the lower Colorado River. This group suggested that the following principles should be followed in establishing the new metropolitan agency: 1) that a water district similar in organization to an irrigation district be formed, 2) that membership be restricted to municipal corporations, 3) that bonds be authorized as the means to finance the construction of aqueduct and 4) that the problem of consumer distribution of the water supply be reserved for the separate consideration of the member cities.

[635] During the early years of planning the Colorado River Aqueduct and the Metropolitan Water District, San Diego demonstrated no direct interest in the project since plans were formulated for the development of a special aqueduct from the All-American Canal in Imperial Valley across the coastal range to meet its future needs.

In order to secure a positive program of action before the following session of the legislature early in 1925, the executive committee of the Boulder Dam Association proposed that a special committee be established to draft a bill to provide for a metropolitan water district and to submit the drafts to all interested communities for their consideration and suggestion.[636]

Following the initiative and leadership of individual members of the executive committee of the Boulder Dam Association, including W.J. Carr of Pasadena and S.C. Evens of Riverside, a meeting of representatives of various communities potentially interested in the Colorado River water supply was called at Pasadena on September 17, 1924. At this meeting a new organization, the Colorado River Aqueduct Association was formed to provide concerted

> … action by Southern California cities and communities in the direction of promotion and forwarding the construction of the aqueduct which will bring to this Southland the much needed waters of the Colorado River.[637]

Thirty-eight communities were represented at the meeting where H.W. Wadsworth of Pasadena was elected president of the new organization. The executive committee of the newly organized Colorado River Aqueduct Association included S.C. Evans, mayor of Riverside; S.W. McNabb, mayor of San Bernardino; O.B. Gunther, chairman of the Board of Trustees of the City of Orange; James H. Howard, city attorney of Pasadena and W. B. Mathews, special counsel of the Los Angeles Department of Public Service. This committee was charged with the responsibilities to formulate tentative plans for the necessary legislation, to outline the legal procedures necessary to realize the creation of the Colorado River Aqueduct and to describe tentative boundaries for the new district to be served by Colorado River water. [638]

A legal committee was established to draft the proposals agreed upon by the executive committee into a bill for introduction into the state legislature. W.B. Mathews was appointed

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[636] Los Angeles Times, July 27, 1924.
[637] "In Union There Is Strength," Intake I (November, 1924), p. 25.
[638] Loc. cit.

chairman and James H. Howard, secretary of this committee which also included among its members, William Johnston of San Dimas, Chester Coffin of Santa Monica, Ray Morrow of Glendale and W. J. Carr of Pasadena.[639] Mathews and Howard, who served on both the executive and legal committees of the Colorado River Aqueduct Association have been credited with the authorship of the legislation authorizing the creation of metropolitan water districts.

In January, 1925, the Metropolitan Water District bill was introduced into the California legislature by Senators Ralph E. Swing of San Bernardino county and A. B. Johnson of Los Angeles county.[640] In common with other water and power issues which had seriously divided the Republican party, the Metropolitan Water District Bill received the opposition of the conservative wing of the California Republicans. In the Senate this "socialistic" proposal was approved by a vote of twenty-five ayes to nine nos. Strikingly, four of these nine negative votes were cast by representatives from Los Angeles county while two other Los Angeles senators were absent and only one of the seven voted for the proposal.[641]

In the Assembly, the act was defeated by a vote of thirty-two ayes to forty-three noes. Los Angeles county alone provided eleven of the dissenting votes, and only three assemblymen gave their approval while one was absent.[642] An effort to secure the approval of the bill on a motion to reconsider was defeated by substantially the same vote, thirty-three to forty-three.[643]

With this defeat, the Metropolitan Water District bill and the Colorado River development became the principal issue at the Los Angeles municipal election in 1925. A special municipal advisory referendum was submitted to the citizens of Los Angeles to indicate

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[639] "The Metropolitan Water District Bill and the Metropolitan Water District Act," Intake IV (February, 1927), p. 18.
[640] The circumstances of authorship of the Metropolitan Water District bill resulted in the popular designation of the bill by the same name as the bill to authorize the Boulder Canyon project, the Swing-Johnson bill. Ralph E. Swing is the brother of Phil D. Swing.
[641] California, Legislature, Journal of the Senate, 46th sess., (Sacramento, 1925), p. 1545.
[642] Ibid., Journal of the Assembly, 46th sess, (Sacramento, 1925), p. 2343.
[643] Ibid., p. 2437.

their attitude toward the Metropolitan Water District bill. Mayor George E. Cryer, the incumbent, campaigned for re-election on an all-out endorsement of the Metropolitan Water District and all of the other projects on the Colorado River contemplated by the Swing-Johnson bill. The $2,000,000 bond issue for the Colorado River Aqueduct surveys also appeared on the same ballot.[644]

In opposition to these propositions, the conservative political elements of the community, stimulated to increased opposition by the controversy over private versus public hydro-electric power developments, fought an intense campaign led by Benjamin F. Bledsoe as their candidate for mayor.[645] The election was an overwhelming victory for the proponents of the Metropolitan Water District and the Colorado River development. The Metropolitan Water District bill was approved by 85,933 to 12,467 or a majority of city councilmen committed to his Colorado River program.[646] Cryer was re-elected mayor with a majority of city councilmen committed to his Colorado River program.[647]

Before the next session of the California legislature, the Boulder Canyon project and the Colorado River developments had become a cause celebre. Early in 1926 the Los Angeles Republican County Central Committee gave its full endorsement of the Swing-Johnson bill.[648] At the general state election, C.C. Young was elected governor after a campaign in which he made his support of the Colorado River development one of the primary points in his program[649]

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[644] Boulder Dam Association, op. cit., passim.
[645] Los Angeles Times, May 6, 1925.
[646] Los Angeles City, Election Records, II: 516.
[647] Los Angeles Record, June 3, 1925.
[648] Los Angeles Republic County Central Committee, General letter and resolution dated May 25, 1926, urging immediate passage of the Swing-Johnson bill.
[649] Los Angeles Examiner, August 29, 1926.

in opposition to Friend W. Richardson whom some regarded as a "traitor" to California on policies relating to Colorado River.[650]

With the decisive demonstrations of the popularity of the Colorado River projects, little opposition remained to the Metropolitan Water District bill. After the second Metropolitan Water District bill was introduced in the California legislature, it was passed unanimously in the Senate and approved by a vote of sixty-three ayes to two noes in the Assembly. On May 10, 1927 the Metropolitan Water District Act was approved by C.C. Young, Governor of California.

The Metropolitan Water District Act

Purpose and Nature. Under the Metropolitan Water District Act a metropolitan water district may be formed of the territory included within the corporate boundaries of two or more municipalities for the purpose of developing, storing and distributing water for domestic purposes. The constituent municipalities need not be contiguous. Each metropolitan water district, when incorporated under the provisions of the act is established as a "separate and independent political corporate entity" with authority to

> … have and exercise such powers as are…expressly granted, together with such powers are as reasonably implied…and necessary and proper to carry out the objects and purposes of such incorporated districts.[651]

Incorporation Procedure. For a metropolitan water district to incorporate, the legislative body of any municipality must pass an ordinance declaring that the public convenience and necessity requires the establishment of such a district. The ordinance must include 1) the name of the proposed district 2) the names of the cities to be included within the district, and 3) an estimate of the preliminary organizational costs, apportioned among the various prospective member municipalities in proportion to population. A copy of this ordinance is transmitted to

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[650] Ibid., October 14, 1926.
[651] Metropolitan Water District of Southern California, Metropolitan Water District Act (Los Angeles, 1947), p. 2.

the chief executive of each of the enumerated cities. Within sixty days, the legislative body of each of these municipalities may either approve or reject the ordinance without alteration or amendment. Each municipality approving the ordinance must appropriate and transmit its apportioned share of the organizational costs to the city initiating the proceedings.

Within 120 days after originally instituting the proceedings for the incorporation of a metropolitan water district, the initiating city must call an election following forms and procedures prescribed in the act. After the election, the governing board of the initiating city must certify the full proceedings together with the election results to the secretary of state "…separately stating the names of the cities in which a majority of the electors voting upon the proposition shall have voted affirmatively."[652] The total assessed valuation of the approving municipalities must not be less than two-thirds of the assessed valuation proposed in the original ordinance.

If all of the procedures and requirements were met, the secretary of state must issue a certificate of incorporation formally creating the metropolitan water district with all of the rights, privileges and powers provided by law. A statutory limit of three months is established within which any suit or proceeding can be commenced to challenge the validity of the incorporation proceedings.

Corporate Powers. In addition to the nominal corporate powers of perpetual succession, the adoption of a corporate seal and the right to sue or be sued, a metropolitan water district possesses great substantive authority. A district has general powers to acquire, operate and dispose of real or personal property or any works and facilities,

[652] Ibid., p. 5.

> … necessary or convenient for the exercise of its powers, both within and without the district and within and without the State, and to do and perform any and all things necessary or convenient to the full exercise of the powers herein granted.[653]

In the exercise of the power of eminent domain, the district has "…the same rights, powers and privileges as a municipal corporation," with the expressed limitation that this power may not be used to acquire water and water rights already devoted to beneficial use and power plants devoted to public use.[654] This restriction effectively prevents the Metropolitan Water District from entering into competition with established water and power operations.

The district has the authority to borrow money not to exceed fifteen per cent of the assessed valuation of all the taxable property included within the district, and to levy and collect taxes to finance operations and to repay the general obligations provided that the tax for general operations does not exceed five cents for each $100 of assessed valuation. Surplus funds may be invested in public securities and general authority is granted to enable a metropolitan water district to refund its bonded indebtedness.

In the performance of its functions a metropolitan water district has authority:

> … to enter into contract, employ and retain personal services and employ laborers; to create, establish and maintain such office and positions as shall be necessary and convenient for the transaction of the business of the district, and to elect, appoint and employ such officers, attorneys, agents and employees therefore as shall be found by the board of directors to be necessary and convenient.[655]

The metropolitan water district may join with one or more other public corporations in carrying out its functions.

In the operational realm the metropolitan water district is given general authority:

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[653] Loc. cit.
[654] Loc. cit.
[655] Ibid., p. 7.

> To acquire water and water rights within or without the State; to develop, store and transport water; to provide, sell and deliver water at wholesale for municipal and domestic uses and purposes.[656]

Surplus water may be sold to water users outside the metropolitan water district subject to the paramount right of the constituent members.

Water Rights. The preferential right to water for domestic and municipal uses of a member municipality of the metropolitan water district is in

> … the same ratio to all of the water supply of the district as the total accumulation of amounts paid by such city to the district on tax assessments or otherwise, excepting purchase of water, toward the capital cost and operating expense of the districts works shall bear to the total payments received by the district on account of tax assessments and otherwise excepting purchase of water, toward such capital cost and operating expense.[657]

Board of Directors. The exercise of the corporate powers of the metropolitan water district is vested in a board of directors as the general governing agency for the district.[658] Each member municipality may have at least one representative on the board of directors. Each representative is appointed by the chief executive officer subject to confirmation by the legislative body of each member municipality. The representatives serve without compensation. Each representative is entitled to cast one vote for each $10,000,000 of assessed valuation of property taxable for district purposes in the municipality which he represents. Every constituent member is entitled to at least one vote and no one city-member is permitted to have more cotes than the combined votes of the others.

In place of one representative, any member city may signate an additional representative for each $200,000,000 of assessed valuation, but these representatives, "…shall cat the vote to which such city would otherwise be entitled as a unit and as a majority of such representatives present shall determine."

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[656] Loc. cit.
[657] Ibid., p. 9.
[658] Ibid., pp. 10-11.

This voting formula in effect provides a system of dual vetoes in instances of conflict between the dominant city of a metropolitan area and the surrounding satellites. Any one city is prevented from exercising more than fifty per cent of the voting power although assessed valuation or population might be substantially greater. On the other hand the unite rule of voting effectively prevents action on the part of the representatives of the smaller communities contrary to the interests of the principal city.

In exercising its general governing authority, the board of directors is authorized to make and pass ordinances, resolutions and orders necessary for the government and management of the affairs of the district. Ordinances are subject to referendum in the same manner as the legislative acts of a county board of supervisors.

Finance. The Metropolitan Water District Act provides for the issuances of general tax obligation bonds for the acquisition or construction of any public works or improvement or incurring any preliminary expense which requires an expenditure too great to be paid out of the ordinary revenue of the district. The general procedure required for general obligation bonds of cities and municipalities is followed by the Metropolitan Water District Act except that approval by a simple majority of the voters of the district, instead of the usual two-thirds majority, is required.[659] A period of fifty years is allowed for the maturation of bond issue. In case of an emergency in which any part of the works of the district "…has been damaged or demolished by reason of fire, flood earthquake, sabotage, or act of God or the public enemy…"[660] and the cost of replacement exceeds the ordinary annual revenue, the board of directors may authorize a bond issue by a two-thirds vote. A limit of one-half of one per cent of the assessed valuation is placed

[659] Ibid., p. 13.
[660] Ibid., p. 17.

upon the amount of indebtedness which may be incurred on an emergency basis and the bonds are limited to a term of twelve years.

The Metropolitan Water District Act places upon the board of directors, responsibility for testing the validity of each bond issue before the courts.[661] Within ninety days after the final authorization of a bond issue, the board is required to bring legal action in the name of the district in the local county superior court by a proceedings in rem. Under this procedure a general summons is issued and any interested party may enter the proceedings to contest the validity of the bond issue. Either party is entitled to appeal the superior court judgment to the California Supreme Court within thirty days of the initial judgment. After the expiration of ninety days from the final authorization of a bond issue, action to contest the validity of the bond issue is prohibited by the statute.

The board of directors of a metropolitan water district is given power to levy a general property tax upon all of the taxable property in the district to pay the principal and interest on the bonded indebtedness and to meet all other district expenditures not covered by other district revenues. Member municipalities may exercise a choice to pay their share of the district's obligations from funds such as water revenue instead of the general property tax.[662]

Annexation and Withdrawal. Annexation to the metropolitan water district may be accomplished by either joining the district as a constituent member or by annexing to a municipality which is already a member of the metropolitan water district. In either case formal application for the approval of the annexation must be submitted to the board of directors of the metropolitan water district who may either reject the application or fix the terms and conditions

[661] Ibid., pp. 14-15.
[662] Ibid., p. 19.

for annexation. These conditions normally specify the share of the district's past and present financial obligations that the prospective area must assume.

In case of an annexation of territory to a constituent member of the metropolitan water district, this territory may also become a part of the metropolitan water district only upon approval of the board of directors. Before the annexation of the territory to a constituent member can be made, the terms and conditions for admission to the metropolitan water district must be made known before the final authorization for the annexation. Evidence of such notice must be included in the certification of the proceedings to the board of directors. Unless the board of directors of metropolitan water district give their consent,

> … the annexation of such territory to, or the consolidation of such territory with, any such municipality shall not authorize or entitle such municipality or such territory to demand or receive any water from such metropolitan water district for use in such territory…[663]

Otherwise nothing in the act can,

> … prevent the annexation of territory to, or the consolidation of territory with, any such municipality for its local purpose s only and without annexing such territory to such metropolitan water district, and such local annexation or consolidation may occur without requesting or obtaining the consent thereto of the board of directors of such metropolitan water district.[664]

An area joining the district as a constituent member must submit the proposal to join the metropolitan water district upon the terms and conditions specified by the board of directors to its citizenry for approval at an election. A majority of the votes must give their approval. Upon filing a certification of election returns by the board of directors with the secretary of state, the annexed municipality attains full membership in the metropolitan water district.

In order to avoid the problem of maintaining a complex distribution system to supply a number of small individual communities, the Metropolitan Water District Act has been amended

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[663] Ibid., p. 29.
[664] Loc. cit.

so that the words "municipality" and "city" as used in the act may include municipal water districts, municipal utility districts, public utility districts, county water districts, and county water authorities. Several smaller communities organized into one of these districts may become a member of the metropolitan water district by the annexation of the special municipal, public utility or county districts.

To withdraw from a metropolitan water district, the law requires the governing board of the municipality to submit the proposition of withdrawal to its citizenry at an election. If a majority of the voters approve withdrawal from the district, the results are certified by the board of directors to the secretary of state and that area is excluded from the metropolitan water district,

> … provided, however, that the property within the said municipality as such municipality shall exist at the time of such exclusion shall continue taxable for the purpose of paying the bonded and other indebtedness of such metropolitan water district outstanding or contracted for, at the time of such exclusion and until such bonded or other indebtedness shall have been satisfied.[665]

The Metropolitan Water District of Southern California

Incorporation. On February 15, 1928, the board of directors of the City of Pasadena adopted an ordinance declaring that public necessity and convenience required the organization of a metropolitan water district to be known as the Metropolitan Water District of Southern California. The ordinance proposed to include Arcadia, Beverly Hills, Burbank, Covina, Culver City, Glendale, Glendora, Los Angeles, Pasadena, San Marino, Santa Monica and Whittier in Los Angeles County; Anaheim, Fullerton, Orange and Santa Ana in Orange County; Colton Redlands, Ontario and San Bernardino in San Bernardino County; and Riverside in Riverside County.[666]

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[665] Ibid., p. 34.
[666] Metropolitan Water District of Southern California, History and First Annual Report, p. 39.

To test the constitutionality of the Metropolitan Water District Act, the city clerk of Pasadena refused to certify the action of the board f directors of the City of Pasadena to the other municipalities proposed to be included in the new district. In action seeking a write of mandamus to compel the city clerk to perform the functions required by law in incorporate a metropolitan water district, the City of Pasadena won a favorable verdict from the California Supreme Court upholding the validity of the new statute.[667]

As soon as doubts of the constitutionality of the statute were removed, the City of Pasadena proceeded with the necessary action to incorporate the Metropolitan Water District of Southern California. Special elections for the approval of the incorporation of the Metropolitan Water District were called in Beverly Hills, Burbank, Glendale, Glendora, Los Angeles, Pasadena, Santa Monica, San Marino San Bernardino, Colton Anaheim, Orange and Santa Ana. Except for two of the smallest communities, Glendora and Orange, the organization of a metropolitan water district to transport the Colorado River water to the coastal plain was approved.

Following the certification of the full incorporation proceedings to the California secretary of state, the Metropolitan Water District of Southern California was formally incorporated to begin its institutional existence on December 6, 1928,[668] two weeks prior to the approval of the Boulder Canyon Project Act by President Coolidge.

Organization. On December 29, 1928 the first meeting of the newly appointed Board of Directors of the Metropolitan Water District of Southern California was held in Pasadena at the call of Clayton R. Taylor, chairman of the board of directors of the City of Pasadena.[669] At this first meeting, the cities of Anaheim, Beverly Hills, Burbank, Colton, Glendale, Los Angeles,

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[667] City of Pasadena v. Bessie Chamberlain, 204 Cal. 653 (1928).
[668] Metropolitan Water District of Southern California, History and First Annual Report, p. 327.
[669] Ibid., p. 10.

Pasadena, San Bernardino, San Marino Santa Ana and Santa Monica were each represented by one director.

At a subsequent meeting on February 9, 1925, the permanent organization of the district was established with the election of W.F. Whitest, also a member of the Board of Water and Power Commissioners of the City of Los Angeles, as the chairman of the Board of Directors. Franklin F. Thomas of Pasadena was elected vice-chairman.[670] These two men remained in their positions of leadership on the Board of Directors until the resignation of W.P. Whitest in 1947.

In the establishment of its administrative organization the Metropolitan Water District of Southern California went through an incubation process in the Department of Water and Power of the City of Los Angeles. The Los Angeles representatives on the Board of Directors, W. P. Whitest, John H. Haynes and John R. Richards, who exercised one-half of the voting power in the Metropolitan Water District, also served as members of the Board of Water and Power Commissioners until February, 1930, when Mayor Porter insisted upon a separation of personnel on the two governing boards.[671] The first permanent headquarters of the Metropolitan Water District was established in the offices of the Los Angeles Department of Water and Power at 222 South Hill Street in Los Angeles.

When the Board of Water and Power Commissioners were considering the unification of the Department of Water and Power under a single general managership, H.A. Van Norman recommended the appointment of F.E. Weymouth to head the water system. Weymouth, as the chief engineer of the United States bureau of Reclamation, Under Commissioner Arthur P. Davis, had achieved a national reputation as the leading authority on the Colorado River.

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[670] Loc. cit.
[671] "Changes Made in Two Boards," Intake VII (March, 1930) p. 8.

In his new capacity, Weymouth assumed charge of the surveys and investigations of the Colorado River Aqueduct being conducted by the Department of Water and Power. On July 1, 1929, Weymouth was made chief engineer of the Metropolitan Water District while continuing to serve with the Department of Water and Power. It was not until after May 1, 1930, when funds became available from the District's first tax levy, that engineering and organization work was transferred from the Los Angeles Department of Water and Power to the Metropolitan Water District.

During this preliminary stage of organization and during the subsequent months of the formative period of the Metropolitan Water District, personnel was frequently loaned or shared by the Department of Water and Power. Don J. Kinsey, publicity agent of the Department of Water and Power, and his immediate staff were given leaves of absence to help the Metropolitan Water District conduct its campaign for the approval of the bond issue for the construction of the aqueduct. After the campaign was successfully concluded, Kinsey remained with the Metropolitan Water District as Assistant to the General Manager in charge of public relations and personnel matters. W. B. Mathews, who had devoted nearly a life-time of work to the legal affairs of the Department of Water and Power, at first shared his time with the Metropolitan Water District and later devoted his full energy as its general counsel.

Another source of key personnel in forming the administrative structure of the Metropolitan Water District was the United Sates Bureau of Reclamation. Weymouth, as a former chief engineer of the Bureau, was able to recruit some exceptionally capable individuals of long experience and association with the Colorado River. Julian Hinds was employed from the Reclamation Service to become Assistant Chief Engineer and later the General Manager and Chief Engineer. C.C. Elder who had charge of the hydrographic operations of the Bureau of

Reclamation at their regional office in Denver, Colorado, was employed as the hydrographic engineer for the Metropolitan Water District.

Primarily from these two sources, the Metropolitan Water District of Southern California was able to form the vital core around which they could gradually build an administrative organization competent to solve the problems and to construct and operate one of the greatest water works in the world.

Water and Power Rights. In the Boulder Dam Project Act, the Secretary of Interior was required to enter into contracts for the sale of electrical energy at a price sufficient to assure the payment of all capital expenditures within a period of fifty years. The first applications made to the Secretary of Interior for power generated at the Boulder Canyon project amounted to 322 per cent of the amount of the power available.[672]

After lengthy negotiations among the perspective users and with the Secretary of Interior, a contract was entered into on April 26, 1930, by which the Metropolitan Water District was allocated thirty-six per cent of the firm power produced at Hoover Dam and given first call upon all unused firm power and all unused secondary power up to their total requirements for pumping water and operating the Colorado River aqueduct.[673] Additional power was later secured at the Parker Dam, constructed by the Bureau of Reclamation with funds provided by the Metropolitan Water District. Two of the four generating units with a total capacity of 100,000 kilowatts belong to the Metropolitan Water District.[674]

By 1942, the Metropolitan Water District had arranged the sale of all of its surplus energy, principally to the Los Angeles Department of Water and Power and to the Southern

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[672] Metropolitan Water District of Southern California, History and First Annual Report, p. 45.
[673] Loc. cit.
[674] Metropolitan Water District of Southern California, Eighth Annual Report for the Fiscal Year July 1, 1945 to June 30, 1946 (Los Angeles, 1946), p. 19.

California Edison Company while still retaining prior right to firm power from Hoover and Parke dams sufficient to pump 750,000 acres feet of water annually.[675]

While the Metropolitan Water District had an established right to surplus waters of the Colorado River to be made available by the conservation of the flood discharge in the reservoir behind Hoover Dam as the successor to the original filling of the City of Los Angeles in 1924, it was necessary to perfect this right by an agreement among the various California users of Colorado River water and by a contract with the United States Government for the storage and delivery of the water in connection with its Boulder Canyon project. On June 21, 1930, the various Colorado River water users entered into the so-called Seven-Party Water Agreement rights.[676] This agreement was incorporated as a part of the contract between the Metropolitan Water District and the federal government. The first three priorities for a total delivery of 3,850,000 acre feet were made to the Palo Verde Irrigation District, the Yuma project of the United States Bureau of Reclamation for lands located in California and the Imperial Irrigation District for lands in Imperial and Coachella valleys.

Following these priorities, the agreement provided

> Section 4—A fourth priority to the Metropolitan Water District of Southern California and /or the City of Los Angeles for beneficial consumptive use, by themselves and / others, on the coastal plain of Southern California, 550,000 acre feet of water per annum.
>
> Section 5—A fifth priority (a) to the Metropolitan Water District of Southern California, 550,000 acre feet of water per annum and (b) to the City of San Diego and /or County of San Diego, for beneficial consumptive use, 112,000 acre feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.[677]

Under the terms of this agreement, the fourth priority granted to the Metropolitan Water District is within the 4,400,000 acre feet provision of the California Limitation Act. The balance

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[675] Ibid., p. 16.
[676] Metropolitan Water District of Southern California, History and First Annual Report, p. 48, ff.
[677] Ibid., pp. 50-51.

of the District's water rights under the fifth priority are claims to surplus waters of the Colorado River Compact. Since the San Diego Water Authority has become a member of the Metropolitan Water District, its total claim of firm and surplus waters aggregate 1,212,000 acre feet of water annually or slightly more than 1,650 cubic feet per second.

With both the water rights to meet the future needs of the communities on the coastal plain and the power to convey the water across the intervening mountains provided for by contracts with the Department of Interior, the officers of the Metropolitan Water District thought that they had perfected the firmest type of water right that could be secured on the Colorado River as an interstate and international stream.[678] Upon the basis of these contracts, the Colorado River aqueduct and its related works were constructed.

Finance. Following the acceptance of the Parker route as recommended by F. E. Weymouth, the Chief Engineer, and approved by a special board of consulting engineers, the Board of Directors of the Metropolitan Water District of Southern California was confronted with the task of financing the mammoth aqueduct which was estimated to cost $283,536,000 with all of its appurtenant works and distribution system. Items aggregating a total estimated expenditure of $64,692,000 were to be deferred leaving a net estimated construction cost of $218,884,000.[679]

In anticipation of the need to secure the approval of the electorate of the entire Metropolitan Water District, a new type of citizens' organization, known as the citizens' Colorado River Water Committee, was created in the summer of 1931.[680] Following an intensive campaign conducted by Don J. Kinsey and his staff, a bond issue for $220,000,000 was approved

[678] No source provided in original.
[679] Metropolitan Water District of Southern California, History and First Annual Report, p. 111.
[680] Boulder Dam Association, File No. 410.

by votes of the district on September 29, 1931 by a vote of 224,477 to 46,338, a majority of nearly five to one.[681]

Within ninety days after the approval of the bond issue, the Metropolitan Water District instituted proceedings in rem to determine the validity of the bonds. J.H. Burney, a tax payer, appeared to contest their validity. In June 1931, the California Supreme Court upheld the bond issue.[682]

However, in 1932, the collapse of the securities market made it impossible to sell the large issue of Metropolitan Water District bonds on the open market for a reasonable rate of interest. Instead, District officials turned to Federal government to sell the bonds. In January, 1932, the Reconstruction Finance Corporation had been created to provide loans to banks, insurance companies and railroads. When the Emergency Relief and Construction Act was being considered early in 1932 to authorize the newly created Reconstruction Finance Corporation to make loans to help finance the self-liquidating public works project, F.E. Weymouth and W.B. Mathews sought to have the legislation sufficiently inclusive to permit the federal government to purchase the long-term bonds of public corporations engaged in self-liquidating public works such as the Metropolitan Water District.[683]

After the successful enacting of these provisions into federal legislation, the Metropolitan Water District made formal application for a loan on September 2, 1932. Following a thorough investigation of the engineering, legal and economic phases of the Colorado River Aqueduct and the Metropolitan Water District, the Reconstruction Finance Corporation agreed to bid on an issue of the District's bonds authorized in 1931 for a total of $40,000,000 at five per cent interest

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[681] Los Angeles City, Election Records, III:11-21.
[682] Metropolitan Water District of Southern California v. J.H. Burney, 215 Cal 582 (1932).
[683] James H. Howard, "Financing , the Problem of Securing Funds for the Construction of the Colorado River Aqueduct", in the Metropolitan Water District of Southern California, The Great Aqueduct (Los Angeles, 1941), p. 13.

with a fifty year maturation period.[684] With these funds the Metropolitan Water District was able to begin the actual construction of the Colorado River Aqueduct.

After the change of national administrations, early in 1933 the authority of the Reconstruction Finance Corporation, to make loans to local self-liquidating public works project was suspended and the Public Works Administration was established to secure the immediate expenditure of large sums of money on current projects. In considering the Metropolitan Water District's new applications for loans, the Public Works Administration was unwilling to make any commitment on a construction program that would extend over a period of years. However, a $2,000,000 loan and grant was authorized for the immediate construction of coffer dams and diversion tunnels at Parker Dam. Upon the completion of the $2,000,000 expenditure, $600,000 was returned to the district as a Public Work Administration grant.[685]

In 1934, the lending program of the Reconstruction Finance Corporation was re-established and the purchase of an additional $15,000,000 of Metropolitan Water District bonds was authorized to carry the construction work through the fiscal year of 1934-1935. Successive loans by the Reconstruction Finance Corporation raised its total commitment for the purchase of Metropolitan Water District bonds to $207,000,000 on May 14, 1937. Of this total commitment the sale of only $184,684,000 in bonds to the Reconstruction Finance Corporation was required to complete the construction program to put the aqueduct into partial operation to meet the present needs of the district.[686] After 1938, the Reconstruction Finance Corporation bond

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[684] Metropolitan Water District of Southern California, History and First Annual Report, pp. 113-14.
[685] Ibid., pp. 116-117.
[686] Metropolitan Water District of Southern California, Tenth Annual Report for the Fiscal Year, July 1, 1947 to June 30, 1948 (Los Angeles, 1948), p. 87.

purchases were refunded to provide for a rate of interest averaging slightly less then four per cent in contrast with the original terms which provided for a five per cent interest rate.[687]

After the Reconstruction Finance Corporation transactions, no additional loans were secured until March 1, 1948 when $4,000,000 of the 1931 bond issue was sold on the open market at an interest rate of 2.75 per cent.[688] These funds were used to expand the water softening and filtration plant.

Reconstruction Finance Corporation financing has been exceptionally advantageous to the Metropolitan Water District as James H. Howard has indicated.

> Construction costs were much lower by reason of the fact that the program was commenced in 1932. Had the District been compelled to accept whatever interest rate the general market of the time might have offered, or had it been compelled to defer its operations until the market had become stabilized, the cost of the aqueduct would have been far greater. The combination of circumstances and the co-operation of the E.F.C. have worked greatly to the advantage of the taxpaying public of the District and the prospective users of Colorado River water.[689]

Current operation expenses and the payment of obligations on the bonded indebtedness for the Metropolitan Water District has been met largely by taxation. Since 1941, the sale of water has produced a revenue which has increased from $126,242.90 to $1,366,156.44.[690] But with increasing requirements to service the bonded indebtedness, the amount collected by taxes in 1947-48 fiscal year totaled$12,946,308.04. The taxes collected from each of the constituent members are shown in the following chart.[691]

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[687] Loc. cit.
[688] Loc. cit.
[689] James H. Howard, op. cit., p. 13.
[690] Metropolitan Water District of Southern California, Tenth Annual Report. p. 92.
[691] Ibid., p. 90.

TABLE VI

TAXES COLLECTED BY THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Anaheim	$ 51,839.19
Beverly Hills	373,927.21
Burbank	441,137.20
Compton	87,937.83
Fullerton	92,706.14
Glendale	391,397.65
Long Beach	975,790.95
Los Angeles	7,922,724.83
Pasadena	430,309.91
San Marino	91,897.63
Santa Ana	149,276.68
Santa Monica	328,222.56
Torrance	119,930.79
Coastal Municipal Water District	112,357.31
San Diego County Water Authority	1,376,852.16
Total	$12,946,308.04

As the utilization of Colorado River water increases a greater burden of the costs will be placed upon the sale of water. Eventually the Metropolitan Water District of Southern California should be able to meet all expenditures from current or anticipated revenues.

During most of the construction period when large scale financial operations were required, the administration of the fiscal affairs of the district were closely supervised by the Board of Directors representing the City of Los Angeles, held the office of controller. G. H. Toll, a prominent banker and a member of Los Angeles' first Board of Water Commissioners created to administer the newly acquired water works system in 1902, was appointed treasurer of the Metropolitan Water District. Both men reported directly to the Board of Directors independent of the general manger and chief engineer.

After the heavy financial responsibilities of the construction period were passed, both Pontius and Toll left their positions to men who had previously served with them. Ira R. Pontius,

disbursing clerk succeeded C.H. Toll as treasurer and J. M. Tuney, assistant controller succeeded D. W. Pontius as controller. Both positions continue to report directly to the Board of Directors.

Personnel. After the initial period of building the administrative organization of the Metropolitan Water District of Southern California had been completed, the Board of Directors established a merit system of employment by an ordinance adopted on August 2, 1931.[692] The personnel were divided into two groups: the classified service including those employed as a part of the permanent staff and the unclassified service, those employed as the construction or operational program might require. The classified service was organized under a personnel officer responsible to the general manger and chief engineer and the unclassified service was administered by the labor employment officer responsible to the assistant to the general manager.

In the establishment of recruitment policies for the operation of its merit system, the Board of Directors established bona fide residence as a prerequisite for employment. All applicants were required to submit to medical examination. Preference was given to ex-service men. No more than one member from a household could be employed by the Metropolitan Water District.[693]

In order to carry out its policies in personnel administration, all aqueduct construction contractors were required to adhere to the rules and regulations of the Board of Directors of the Metropolitan Water District. All contractors were required to employ only such persons as had been certified through the District's labor employment office. To avoid making this requirement a serious limitation upon the contractors, the Labor Employment Office followed the practice of issuing to each applicant meeting the standards required for employment, a small identification card certifying him for employment by any contractor at field headquarters as well as recruitment

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[692] Metropolitan Water District of Southern California, History and First Annual Report, p. 302.
[693] Ibid., pp. 304-05.

through the Labor Employment Offices located in Los Angeles and each other community included with the Metropolitan Water District.[694]

For persons employed in the district's classified service, personnel ratings were made on a prescribed scale for each of the four different general classifications based upon education, experience, character and personality, and physical condition. To be eligible for appointment, an applicant must receive a rating of not less than sixty on education and experience combined and not less than sixty on references and an average rating of not less than seventy-five for all qualifications. [695]

Since the termination of the construction program, the principal problem of personnel administration has been the contraction of field and office forces to meet the more limited requirements of current operations. The war-time fluidity of employment substantially ameliorated the problem to reduce the personnel rolls. The district's personnel office has been required to meet a heavy demand by former employees for references and credentials for new positions.

Annexations. When the Metropolitan Water District was first formed, it included eleven cities located in three different counties. Seven of these, Beverly Hills, Burbank, Glendale, Los Angeles, Pasadena, San Marino and Santa Monica were located in Los Angeles County. The cities of Colton and San Bernardino were in San Bernardino County while Anaheim and Satan Ana were in Orange County.[696]

Before the $220,000,000 bond issue was submitted for approval several shifts occurred in the membership of the Metropolitan Water District. San Bernardino and Colton withdrew

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[694] Loc. cit.
[695] N.P. Jamieson, "Employment Methods Used in Construction of the Aqueduct," in Metropolitan Water District of Southern California, The Great Aqueduct, p. 28.
[696] Metropolitan Water District of Southern California, History and First Annual Report, p. 313.

since the route of the aqueduct did not pass through Cajon Pass to make possible a gravity flow into their distribution systems. However, four new communities were annexed early in 1931 including Compton, Long Beach and Torrance in Los Angeles County and Fullerton in Orange County.[697]

No new annexations occurred until 1942 when a group of communities and irrigation districts including the City of Laguna Beach, South Coast County Water District, Newport Heights and Newport Mesa Irrigation districts and some incorporated lands in the vicinity of Newport Beach annexed to the Metropolitan Water District.[698] Subsequently the cities of Bren and Newport Beach, and the unincorporated areas of the Fairview Farms and Irvine's Subdivision were annexed to both the Coastal Municipal Water District and the Metropolitan Water District.[699]

This annexation was the first instance in which a special water district rather than an incorporated city became a party of the Metropolitan Water District. Since most of these resort ad agricultural communities extending from Newport Beach to Dana Point had previously been organized as the Laguna Beach County Water District, it was simpler to provide service connections between the Metropolitan Water District feeder lines and the local distribution system than to provide for numerous small communities.

On December 27, 1946, the most important single addition to the Metropolitan Water District occurred with the annexation of the San Diego County Water Authority with a special agreement to merge the water rights of the City of San Diego with that of the Metropolitan Water District. Included within the San Diego Water Authority were the cities of Chula Vista, National

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[697] Ibid., p. 314.
[698] Metropolitan Water District of Southern California, Fourth Annual Report for the Fiscal Year July1, 1941 to June 30, 1942 (Los Angeles, 1942), p. 41.
[699] Metropolitan Water District of Southern California, Tenth Annual Report, p. 75.

City, Oceanside, El Cajon, La Mesa and San Diego and the areas of the Fallbrook Public Utility District, Lakeside Irrigation District, Lemon Grove and Spring Valley Irrigation District, Santa Fe Irrigation District and the San Dieguito Irrigation District.[700]

The San Diego aqueduct, which joins the Colorado River aqueduct at the west portal of the San Jacinto tunnel with the City of San Diego, was constructed to avert a disastrous water famine at the largest United States naval base on the Pacific coast. When Colorado River water flowed into the San Diego municipal water system only a two-day supply remained in the city's reservoirs. Since its completion, the San Diego aqueduct with a capacity of eighty-five cubic feet per second has been operated to capacity to make the San Diego County Water Authority the largest single user of Colorado River water on the Southern California coastal plain.

The most recent annexation to the Metropolitan Water District occurred on July 23, 1948 when the West basin Municipal Water District was admitted. Five incorporated cities including El Segundo, Manhattan Beach, Hermosa Beach, Redondo Beach and Palos Verdos Estates comprise the area of the West Basin Municipal Water District.[701] The City of Cardena was later annexed to both the West Basin Municipal Water District and the Metropolitan Water District.[702]

The present membership of the Metropolitan Water District is shown in the following chart, except for the area of Cardena. Including the constituent components of the special water districts annexed in recent year, the Metropolitan Water District includes twenty-eight incorporated cities as well as several special areas organized as public utility districts and irrigation districts.[703]

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[700] "San Diego Celebrates Arrival of New Water," Colorado River Aqueduct News, XIV (December, 1947), p. 4.
[701] The Metropolitan Water District of Southern California, Tenth Annual Report, p. 74.
[702] Downtown Shopping News, January 6, 1949.
[703] Metropolitan Water District of Southern California, Tenth Annual Report, p. 4.

TABLE VII

AREA, POPULATION AND ASSESSED VALUATION
OF METROPOLITAN WATER DISTRICT AREAS

		Population			
	Area Square Miles	**US Census 1900**	**US Census 1940**	**Estimated 1948**	**Assessed Valuation 1948-49**
Anaheim	4.31	1,456	11,031	13,500	$ 18,266,051.00
Beverly Hills	5.03	*	26,923	29,500	$ 113,850,850.00
Burbank	16.73	*	34,337	76,500	$ 109,692,965.00
Coastal Municipal Water District	19.16	*	9,000	25,500	$ 31,958,020.00
Compton	6.34	*	16,198	39,000	$ 29,417,090.00
Fullerton	16.7	*	10,442	13,500	$ 33,831,220.00
Glendale	20.19	*	82,582	103,000	$ 114,795,135.00
Long Beach	34.65	2,252	164,271	267,000	$ 319,086,465.00
Los Angeles	455.27	102,479	1,504,277	1,988,000	$ 2,306,818,400.00
Pasadena	21.18	9,117	81,864	109,500	$ 136,685,055.00
San Diego County Water Authority	152.02	22,506	246,000	476,500	$ 338,886,890.00
San Marino	3.72	*	8,175	12,000	$ 27,510,935.00
Santa Ana	10.74	4,933	31,921	44,000	$ 50,905,290.00
Santa Monica	8.1	3,057	53,500	75,000	$ 95,839,175.00
Torrance	18.88	*	9,950	17,000	$ 40,007,350.00
West Basin Municipal Water District	63	900	69,500	142,500	$ 115,530,370.00
Total	554.02	146,700	2,359,871	3,432,000	$ 3,083,081,225.00

*Annexation in effect July 23, 1948. Not included in Metropolitan Water District taxes of 1948-49.

Problems: Present and Future

Relations with Los Angeles. The need for the importation of additional supplies of water from the Colorado River for the municipalities on the coastal plain of Southern California was the stimulus for the creation of a special agency of metropolitan government, the Metropolitan Water District of Southern California, to serve the common needs of a water consuming area. Los Angeles, as the center of this metropolitan community, provided the principal source of initiative and financial resources to make an aqueduct from the Colorado River possible. Without the active participation of Los Angeles, the Colorado River aqueduct and the Metropolitan Water District could never have been more than a fanciful dream.

The special problem created by the relationship of Los Angeles to the other constituent members of the Metropolitan Water District was recognized in the complicated formulas to determine the representation and voting power on the Board of Directors. Since no single member of a metropolitan water district could cast more than fifty per cent of the votes regardless of the size of its population or assessed valuation, in effect a system of double vetoes was established. Los Angeles with its fifty per cent voting power could defeat any proposition which it opposed. In turn, the other members of the Metropolitan Water District could unite to resist any attempt by Los Angeles to impose its will. Since a two-thirds vote is required on several different forms of action by the Board of Directors, the role of the smaller communities in the government of the District is very substantial.

However, the veto power of the Los Angeles members of the Board of Directors is made nearly absolute by authorizing each member community to cast its votes as a unit as determined by a majority of its representatives. The assent of a majority of the Los Angeles delegation must be secured before any action may be taken by the Metropolitan Water District.

Recently this unit rule has become the center of significant difference of opinion. Los Angeles is largely dependent upon the Colorado River water supplied by the Metropolitan Water District to meet its future needs. Since the Arizona-California controversy may adversely affect the total supply of water available to the Metropolitan Water District a majority of the Los Angeles members of the Board of Directors had voted to prevent the annexation of a number of municipalities in the Pomona area of eastern Los Angeles County and the adjoining Ontario-Upland area in western San Bernardino County, until the future quantity of the Colorado River water supply can be determined.

As a result of this action, Assemblyman Ernest R. Geddes of Pomona introduced a bill in the 1949 session of the California legislature to modify the unit voting provision of the present Metropolitan Water District Act and to require each director to vote as an individual on any proposal for the annexation of new areas to the Metropolitan Water District.[704]

The proposal was reported out of the Assembly Committee on Municipal and County Government with a favorable "do pass" recommendation. However, it failed to pass the Assembly as a result of the united opposition presented by all of the representatives of the various communities included within the Metropolitan Water District.[705]

While the Geddes bill does not appear very significant on the surface, the reaction to it by the Southern California communities is indicative of the delicate balance existing between Los Angeles and the other members of the Metropolitan Water District and the vital importance of the Metropolitan Water District of the future pattern of development in Southern California.

The Future of Metropolitan Government. The policies of the Metropolitan Water District will unquestionably be as important to the future development of a metropolitan community and

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[704] California, Legislature, Assembly Bill 1275.
[705] Los Angeles Daily News, April 29, 1949 and May 4, 1949.

the formation of metropolitan institutions as the disposal of the surplus Owens Valley water was in the development and growth of Los Angeles.

Regardless of whether the policies pursued properly contemplate the consequences of their impact upon the future pattern of metropolitan developments, their influence will be overwhelming. This has been recognized by Samuel S. Harris in the following statement of the two extreme alternatives that confront the Metropolitan Water District of Southern California.

> Should no limits be placed on annexations to the District within the 2,200 square miles of the four counties or the 2,525 square miles of the coastal area of the five counties, including San Diego County, in spite of present uncertainties of available yield in spite of present uncertainties of available yield of the Colorado River Aqueduct, there will not be sufficient water for the fullest urban, agricultural and industrial development of the 2,525 square miles? Or should the utmost caution be exercised and the future area of the District be confined to a limited area representing that area which could grow in population and industry without limit within the lowest estimate of future available water supply. Those areas which are able to command adequate water resources will be the center of future development.[706]

While the problem of the adequacy of Colorado River water supply poses important questions of policy, it also presents interesting potentials for the future development of the metropolitan community. To mobilize the political resources of the area in support of its position in the Colorado River controversy, the Metropolitan Water District has organized a new citizen movement, known as the Colorado River Association. Don J. Kinsey, assistant to the general manager of the Metropolitan Water District is the main source of leadership within the Colorado River Association which he serves in the capacity of general manager.

Thus far the Colorado River Association follows the traditional pattern of the usual "camouflage" organization created for the sole purpose of exerting pressure upon policy forming agencies of government. A mailing list, a letterhead with an executive committee of prominent

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[706] Samuel B. Morris, "The Water Problem," Proceedings of the Institute of Economics and Finance, Fifth Conference (Los Angeles: Occidental College, 1948), p. 88.

civic leaders and a hand-picked group of officers to issue prepared news releases and sign communications are the basic elements of the organization.

But the circumstance that the Metropolitan Water District has found it necessary to create a citizen organization to build support for the accomplishment of its political objectives, creates the possibility that a new community of interest might be established which identifies itself with the interests of the metropolitan community rather than the narrower identification of the Metropolitan Water District as simply the means of satisfying the particular needs of the individual community members. Since no general community of interest has been identifiable with the Metropolitan Water District other than the official channels of the constituent communities, individual persons have been appointed to the Board of Directors to represent a city which the same individual would be politically unacceptable to serve in a comparable position within the political structure of that city's own internal administration.[707] In effect a political appointment to the Metropolitan Water District removes the public dignitary from the public view. In the course of time a citizen organization created as a tool to attain the political objectives of the Metropolitan Water District might become the agency of a new community of interest to fill this void.

When the Metropolitan Water District of Southern California was first established, Franklin P. Thomas made the following important observation about metropolitan water distribution,

[707] e.g. Joseph Johnson, who resigned from the Los Angeles Board of Water and Power Commissioners under pressure, is the present chairman of the Board of Directors of the Metropolitan Water District.

> So long as water development is made by small units on a competitive basis, water conservation will not be accomplished when and where it will do the greatest good, nor will water production be done where greatest economy and use will be achieved.[708]

These possibilities have not been generally realized since the Metropolitan Water District has served as the water supplier of individual communities rather than an agency of metropolitan water distribution. To supply each constituent member with supplementary water supplies, the Metropolitan Water District has been required to establish extensive feeder lines which would not have been necessary had a unified water distribution system been established.[709]

If water is to be available, "…where the greatest economy and use will be achieved," unrestricted development of some areas by heavy water consuming industries while neighboring communities suffer from water shortages seem incongruous. Furthermore, by apportioning water rights in the Metropolitan Water District on the basis of assessed valuation, the most highly developed communities have a claim to the lion's share of the water. Yet the desired areas for future development may be relatively undeveloped with little assessed valuation and consequently little water for expansion. The exercise of general police powers, the control of community planning and the allocation of water according to use priorities are prerequisite to the distribution of water to realize its highest utilization.

In the realm of water production, once the existing supplies of fresh water are exhausted, the reclamation of sewage will require unified development over the whole metropolitan area, if the operation is to be conducted on an economical basis. Sewage discharged by communities at a higher elevation should be reclaimed for utilization at lower contours, eliminating the necessity for expensive pumping operations. Likewise an entirely new problem of water rights is created

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[708] Franklin Thomas, "Metropolitan Water Distribution in the Los Angeles Area," in C.A. Dykstra, ed., "Colorado River Development and Related Problems," The Annals of the American Academy of Political and Social Science, CXLVIII (March, 1930), p. 11.

[709] W.W. Hurlbutt and D.A. Lane, Brief Outline of Water Supply for the Various Cities and Advantages of a Unified Water System in the Southern California Metropolitan Area (MS, 1934), 25 pp.

by the utilization of reclaimed sewage effluent especially where more than one corporate community may become involved. By vesting these rights in a metropolitan wide agency, endless litigation and controversy might be avoided.

If the Metropolitan Water District of Southern California possesses adequate political leadership to advance into the frontier of metropolitan developments, it can serve as an important vehicle for a new metropolitan society forming on the coastal plain of Southern California. Water can be as significant as a tool in the institutionalization of a metropolitan community as it has been in the development of the City of Los Angeles.

> In an effort to solve the many novel problems that have arisen over the use of water, the legislature has enacted numerous laws, and the courts have interpreted them in such a way as to lead to somewhat of an impasse between the courts and those who desire a more adequate use of this very valuable element of life. It Is a very live question, therefore, how we may get more good from the water we have, and how we may secure still more water from a distance.
>
> Carl A. Davis, 1930

CHAPTER VIII

THE STATE OF CALIFORNIA AND THE DEVELOPMENT OF LOS ANGELES WATER RESOURCES

The control of both water resources and local units of government is within the reserved powers of the states under the American system of government. Consequently the government of the state of California is the primary source of authority in establishing the basic laws of water rights and water administration as well as the general source of power and control in the government of Los Angeles, as of municipal corporation organized under the constitution and laws of California.

California's Control and Development of Water Resources

Sources of California Water Law. California drew its basic principles of water law from two widely different sources, the customs and practices of the pioneer gold miners and the common law of England.

When large quantities of water became essential to mining operations with the introduction of sluicing and similar methods of mining, the miners applied the basic principle regulations mining rights to the acquisition of water rights where the supply was inadequate to meet the needs. The basic principle established by these miners,

> … hold the natural resources free to all, the first possessor being protected; the rule first come first served was applied by common acceptance. The right to mine, first of all in importance, was protected in the first possessor of the mining ground, and that has grown

> into the system of mining law which we have today. All rights are declared upon the basis of priority of discovery, location and appropriation. [710]

This principle as applied to water rights has become the foundation for the law of prior appropriation.

On the other hand, the principle of riparian right as developed by the common law of England established the right of any landowner situated on the bank (ripa) of a stream to use of the water which flowed past his land provided that the flow continued unimpaired in quality and undiminished in quantity subject only to the reasonable requirements of other riparian owners. The riparian principle was incorporated into California water law when the state legislature in 1850 enacted a law which provided:

> The Common Law of England, so far as it is not repugnant to, or inconsistent with, the Constitution of the United Sates of the Constitution or law of the State of California, shall be the rule of decision in all the courts of this State.[711]

During the first two decades of the American period, the principle of prior appropriation was generally relied upon the claim water rights since most of the claims arose from mining and some agricultural enterprise conducted upon the public domain. In early litigation arising in California courts, the principle of exclusive rights by prior appropriations of water on the public lands was fully recognized and accepted.[712] The right was firmly established when the federal government in the lode mining law of 1866 provided:

> Whenever, by priority of possession, rights to use water for mining, agricultural, manufacturing or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and decisions of the court, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purpose of herein specified is acknowledged and confirmed…[713]

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[710] Samuel C. Wiel, Water Rights in the Western Station (3rd ed.; San Francisco: Bancroft-Whitney Company, 1911), Vol. I, pp. 72-73.
[711] California, Legislature, Complied Laws of the State of California, 1850-53 (Benecia: S. Garfielde, 1953), p. 186.
[712] Wiel, op. cit. p. 77. Matthew W. Irwin v. Robert Phillips, 5 Cal 140 (1855).
[713] Ibid., pp. 107-08.

Theoretically the doctrine of prior appropriation had not challenged the precepts of the riparian doctrine as long as the appropriative right was exercised upon the public domain. The United Sates government as the possessor of the lands enjoyed the privileges of the riparian owner. In turn the federal government as the riparian proprietor could permit the use of water upon public lands according to the principle of prior appropriations.

The shift of emphasis from mining to agriculture together with the conversion of the public domain to private ownership as a result of substantial grants of land to the railroads and to individual settlers by the Homestead Act presented a new crisis. The alternatives of generally extending the principle of prior appropriation to apply to private land holdings or restricting its application to public lands and applying the doctrine of riparian rights to private lands were available to the courts.[714]

The California Law of Riparian Rights. In 1885, the whole problem of the applicability of appropriative or riparian rights to private land tributary to a water course was raised in the famous case of Lux v. Haggin. The California Supreme Court held that, "the doctrine of 'appropriation' so-called, is not the doctrine of the common-law,"[715] as required by the act of the legislature to govern the decisions of the courts of California.

> By the common law the right of the riparian proprietor to the flow of the stream is inseparably annexed to the soil, and passes with it, not as an easement or appurtenance, but as a part and parcel of it. The right in each extends to the natural and usual flow of all the water, unless where the quantity has been diminished as a consequence of the reasonable application of it by other riparian owners…[716]

While the principle of prior appropriation continued to be applied to water rights arising on the public domain, the passage of the bulk of the agricultural lands into private lands meant

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[714] In contrast to the alternative followed by California in the application of riparian rights to private lands, either states led by Colorado and Wyoming placed exclusive reliance upon the principle of prior appropriation on the assumption that climate conditions could not justify the acceptance of the riparian principle.
[715] Charles Lux v. James B. Haggin, 69 Cal 255, 387 (1886).
[716] Ibid., p. 390.

the general application of the riparian principle of water law to the vast majority of water users in the state of California.

Borrowed from "rainy, foggy England," the riparian system of water law posed serious problems for semi-arid California to secure the fullest utilization of its limited water resources.[717] Under the riparian doctrine lands not adjacent to a stream have no right to divert water except by adverse use and appropriation subject to the paramount right of the riparian owners. Obviously, extensive irrigation developments could not occur on lands riparian to flowing streams.

While the riparian doctrine enunciated the right of riparian owners to make reasonable diversions of water for irrigation upon riparian lands subject to reasonable use of other riparian owners no comparable standard of reasonableness was imposed upon the riparian right correlative to a non-riparian appropriator. This doctrine was clearly enunciated by Mr. Justice Sloss of the California Supreme Court in the case of Miller and Lux v. Madera Canal and Irrigation Company where he held that:

> The argument that the method of irrigation by plaintiff, i.e. that of having the annual increased flow of the river spread over its land, was not a reasonable use of the water, can have no weight in this case. The doctrine that a riparian owner is limited to a reasonable use of the water applies only as between different riparian proprietors. As against an appropriator who seeks to divert water to nonriparian lands, the riparian owner is entitled to restrain any diversion which will deprive him of the customary flow of water which is or may be beneficial to his land. He is not limited by any measure of reasonableness.[718]

In a state with a long dry summer climate, where the bulk of the natural water crop is discharged in seasonal floods or freshets, the establishment of a vested property right in riparian owners to the use of this water as a part of the natural, regular flow of a stream without any standard of reasonableness created an exceedingly serious obstacle to the systematic

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[717] U.S. Department of Agriculture, Report of Irrigation Investigation in California, Bulletin No. 100, by Elwood Mead (Washington: Government Printing Office, 1901), pp. 42-48. Mead as a leading proponent of appropriative rights gives a critical evaluation of riparian rights.
[718] 155 Cal 59, 64 (1909). Underlining added.

conservation and the fullest utilization of the waters of the state. The recognition of a riparian right to the use of flood waters to replenish underground water basins, to fertilize the land by the disposition of the silt, to irrigate meadows and grasslands by the capture of flood waters within depressions or sloughs on the flood plain or to leach slats from the soil of natural marshes, effectively prevented other potential water users from storing flood waters in reservoirs for the irrigation of non-riparian lands or for domestic consumption in municipalities.

Early Plans for Water Development. While the California courts were enunciating their doctrine of water law, either political forces in the sate were stimulating an interest in comprehensive planning and development of the state's water resources. As early as 1878 funds were appropriated to initiate an investigation "… to provide a system of irrigation, promote rapid drainage and improve navigation on the Sacramento and San Joaquin Rivers."[719] No positive results came from these investigations by the state engineer, William Hammond Hall, except to stimulate the minds of others to think in terms of a comprehensive water plan for the development of the state's water resources. As a part of his conclusions, Hall recommended the establishment of the principle of prior appropriation as a basis for California water law.[720]

In 1901 Elwood Mead, then a professor at the University of California submitted a comprehensive report on irrigation in California and recommended extensive legislation based upon the features of the "Wyoming System" of water law and administration which Professor Mead had formulated as a consultant to the Wyoming constitutional convention in 1889.[721] These proposals which included principle of prior appropriation were incorporated into a

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[719] Quoted in U.S. Bureau of Agricultural Economics, History of Legislation and Policy Formation of the Central Valley Project, by Mary Montgomery and Marion Clawson (Berkeley, 1948), p. 10.
[720] Wiel, op. cit., p. 149.
[721] U.S. Department of Agriculture, Report of Irrigation Investigation in California, op. cit.

legislative proposal for the enactment of a general water code prepared by John D. Works, but without any positive results.[722]

The California Water Commission. Beginning in 1911 several legislative proposals were enacted which were finally integrated into a single statute providing for the establishment of the State Water Commission in 1913.[723] In this act, the legislature sought to establish an administrative agency to supervise the granting of new appropriative water rights, to adjudicate existing water rights subject to court review, to distribute water to those entitled to its use and to conduct general investigations of water supply and utilization. In addition a frontal attach was made upon the wastage of water arising under the riparian system of water law. An attempt was made to define all "unappropriated waters" and a ten-year limit following the passage of the act was placed upon any claims to water by a riparian right but not needed upon riparian lands for any useful or beneficial purpose. Riparian users were also limited to a standard of reasonableness as against the interest of an appropriator.

The Reaction of the Courts. However, the courts continued to follow the path of their established doctrine of riparian water law. Notwithstanding the legislative attempt to establish a standard of reasonableness upon the riparian owner in relation to appropriative users, the California Supreme Court held in Fall River Valley Irrigation District v. Mt. Shasta Power Corporation, that:

> A riparian right is a vest property right inhering in and a part and parcel of the abutting land…not gained by use or lost by disuse—a right (qualified only by the correlative rights of other riparian proprietors) to use the entire ordinary and normal flow of the stream for all lawful riparian uses and also to have all such flow come down to the land undiminished other than by the lawful uses by upper riparian proprietors or by the rights of those who have otherwise obtained a superior claim to the use of a portion of the stream; and this right to use the water of a stream entitled to the same respect and protection at the hands of the law as any other vest property right.

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[722] Wiel, op. cit., p. 149
[723] California, Legislature, Statutes of California, 1913. 40th sess. (Sacramento, 1913), p. 1012 ff.

> While the legislature has the power to modify or abrogate a rule of the common law, no such change can affect the previously vested rights of property owners.[724]

The continued enunciation of these principles of water law finally approached a crisis with the decision of the California Supreme Court in Herminghaus v. Southern California Edison Company. Amelia Herminghaus, a lower riparian owner sought to enjoin the Southern California Edison Company from storing water during months of heavy run-off for the generation of electricity. As a riparian owner, Herminghaus claimed the benefit of the full natural flow of the river since the heavy spring and summer run-off overflowed onto the land and into sloughs to provide a natural system of irrigation.

In a dissenting opinion, Mr. Justice Shenk revealed the vital problem of the case when he observed:

> In order to have the beneficial use of less than one per cent of the maximum flow of the San Joaquin River on their riparian lands the plaintiffs are contending for the right to use the balance in such a way that, so far as they are concerned, over ninety-nine per cent of that flow is wasted. This is a highly unreasonable use or method of the use of water.[725]

However, the majority of the court in a four to three decision upheld the traditional right of the riparian owner:

> It is argued that unless the appropriators are permitted to divert and store for future use, water which would otherwise run into the sea and be wasted, there will be a failure to make the most beneficial use of the natural resources of the state and that riparian owners should not be permitted to obstruct the development of these resources. It may be that, if nonriparian owners are permitted to intercept the winter flow of streams, in order to irrigate nonriparian lands, or to develop power, the water so taken will permit the cultivation of more land and benefit a greater number of people than will be served if the flow continues in its accustomed course. But the riparian owners have a right to have the stream flow past their land in its usual course, and this right, so far as it is of regular occurrence and beneficial to their land, is, as we have frequently said, a right of property, " a parcel of the land itself." Neither a court nor the legislature has the right to say that because such water may be more beneficially used by other it may be freely taken by them.[726]

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[724] 202 Cal 56, 65 (1927).
[725] 200 Cal 81, 123 (1926).
[726] Ibid., p. 101.

Comprehensive Planning for Water Developments. While the courts were pursuing their course culminating in the Herminghaus and Fall River decisions, the attention of the legislature and other elements in the state was being turned to the formulation of a comprehensive plan for the fullest utilization of the state's water resources. In 1919 Robert G. Marshall submitted a plan for the systematic development of the waters of the Central Valley of California to bring about the irrigation of 12,000,00 acres and the generation and distribution of hydro-electric power through a statewide water and Power Commission. The Marshall plan was carried to the electorate as an initiative proposal at three different elections.[727] Although these proposals were defeated after exceedingly bitter campaigns which included the highly organized opposition of the privately owned electrical utilities, other actions were taken by the legislature to stimulate further consideration of the comprehensive development of the state's water resources, especially in the Central Valley.

In 1921, after defeating a bill incorporating the Marshall plan, the legislature appropriated $200,000 for a thorough investigation of the water resources of California.[728] On the basis of these investigations, the State Engineer was instructed to prepare a comprehensive plan for the complete development and utilization of all waters in the state and to report his recommendations to the following legislative session. In 1923, the legislature failed to provide any additional funds, but contributions from the Los Angeles and San Francisco chambers of commerce made at the urgent request of farmers in the southern San Joaquin Valley enabled the State Engineer to continue the water investigations.[729] In 1925 a further appropriation of $150,000 was made by the legislature. The plan that was developed as a result of these studies was presented to the

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[727] Arthur D. Angel, Political and Administrative Aspects of the Central Valley Project of California (unpublished Ph.D. thesis, University of California, 1944) pp. 39-41.
[728] California, Department of Public Works, Division of Engineering and Irrigation, Biennial Report, November 1, 1928 (Sacramento, 1929), pp. 55-59.
[729] Loc. cit.

legislature in 1927 as Summary Report on the Water Resources of California Bulletin No. 12, Division of Engineering and Irrigation, Department of Public Works.

It was in this milieu of political discussion and water planning that the California Supreme Court continued the enunciation of the rigid doctrine of riparian rights. Immediately following the Herminghaus decision a political furor was created in the legislature and among the political forces of the state, which culminated in the submission of a constitutional amendment to the voters of the state of California for their approval. This constitutional amendment adopted at the following general election on November 6, 1925 provided:

> It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the Sate be put to beneficial use to the fullest extent of which they are capable, and that the waste of unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, ad such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method diversion of water. Riparian rights in a stream of water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made adaptable, in view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of the stream to which his land is riparian under reasonable methods of diversion and use, or of depriving any appropriator of water to which he is lawfully entitled.[730]

The New "Reasonable Use" Doctrine. Following the adoption of the "reasonable use" amendment to the California constitution, the Supreme Court altered its position to impose a standard of reasonableness upon riparian users as correlated to appropriation users. In Chow v. City of Santa Barbara. Mr. Justice Shenk now speaking for the court held that the new

[730] California, Legislature, Assembly, Constitution of the State of California (Sacramento, 1941), article XIV, section 3, p. 208.

amendment was not in violation of article I, section 14 of the California constitution which provides that private property may not be taken without just compensation, when he observed:

> There is a well recognized and established distinction between a "taking" or "damaging" for public use and the regulation of the use and enjoyment of a property right for the public benefit. The former falls within the sphere of eminent domain, and the latter within the sphere of the police power. That the constitutional amendment now under consideration is a legitimate exercise of the police power of the state cannot be questioned. It is the highest and most solemn expression of the people of the state in behalf of the general welfare. The present and future well-being and prosperity of the state depend upon the conversation of its life-giving waters.[731]

Later in Peabody v. City of Vallejo, the vested right theory or the right of riparian owner to all the waters of the stream, without regard to reasonableness of use as against an appropriator was declared to be subject to such limitation by the "reasonable use" amendment that: "… the old doctrine declared in Miller v. Madere Canal and Irrigation Company, … is no longer the law of the state.[732]

Such assorted rights of riparian owners to have the full flow of a stream to overflow the lands for the purpose of depositing silt, to remove the saline content from the soil, or to irrigate the flood plains and replenish underground waters were held to be an unreasonable use as contemplated by the state constitution. [733]

California and the Central Valley Project. With this modification of the riparian doctrine, the way was cleared for the fuller utilization of the water resources of the state by depriving riparian owners of the benefits of the overflow waters and the concomitant wasting of water into the ocean. Storage reservoirs could be constructed and appropriations made upon the conserved water to provide for the development of non-riparian lands on a systematic basis. Integrated

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[731] Gin S. Chow v. City of Santa Barbara, 217 Cal 673, 701 (1933).
[732] George J. Peabody v. City of Vallejo, 2 Cal(2d) 35, 368 (1935).
[733] Ibid., p. 369.

water works projects could be developed by private or public agencies without the excessive burden of compensating riparian owners for unreasonable uses.

Following the adoption of the constitutional amendment and the preparation of additional engineering investigation, the legislature adopted the Central Valley Project Act in 1933, providing for the development of the major portion of the state water plan. The act authorized the issuance of $170,000,000 in revenue bonds for the construction of 1) the Shasta Dam on the Sacramento River, 2) the San Joaquin Pumping System to transport water from the lower Sacramento in the San Joaquin delta, southerly to Fresno Slough for the irrigation of lands in the northwestern portion of San Joaquin Valley, 3) Friant dam on the San Joaquin River with canals diverting water as far south as Bakersfield for the irrigation of lands in eastern and southern San Joaquin Valley.[734]

Instead of utilizing the revenue bonds authorized by the Central Valley Project Act for the development of the Central Valley Project as a state venture in water resources administration, the California Water Project Authority turned to the United States government to secure federal financing and construction. This effort was so successful that by 1939, the United States Secretary of Interior was able to state, "The Central Valley Project is a federal undertaking to be administered in accordance with the Reclamation law."[735]

Following nearly a half-century of effort to provide for the comprehensive development of the state's water resources, California state authorities had abdicated to federal administration and control of its most important water shed system.

The shortcomings of this action were recently described by C.A. Griffith, chairman of the California Water Resources Board:

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[734] U.S. Bureau of Agricultural Economics, op. cit., pp. 46-47.
[735] Ibid., p. 96.

> At first it was hoped that the interest of these federal agencies in California's water problems would relieve the state of much of its responsibility in that connection.
>
> Unfortunately, those hopes did not materialize. Piecemeal planning at the federal level neither solved our problems nor pleased the people of our state. In fact, it only further complicated an already complex and confusing situation.
>
> We have made costly mistakes by taking half measure. In the light of history we are convinced that our basic planning must be done by our own state engineer's staff, men who know our basic requirements, our California water laws, and have a clear understanding of our water rights.[736]

California Water Law and the Los Angeles Water Supply Problem

The Pueblo Right. Los Angeles, by the fortunate circumstance of the pueblo water right, was exempt from the restrictions of the riparian doctrine of water law as formulated by the California Supreme Court. This peculiar species of water right, described in detail in an earlier chapter,[737] placed the right of the City of Los Angeles superior to any riparian owner whenever the water was needed by municipal consumers. As a result, the City of Los Angeles was able to develop the full water resources of the Los Angeles River systematically without being deterred by the inroads of upper and lower riparians who might have demanded rights to a natural flow by their lands subject only to the reasonable use of other riparian owners.

Except for the "pueblo" cities, a riparian right can not accrue to a municipality form the lands within its corporate limits since a water right was a property right vested in each parcel of land.[738] To secure a riparian water right, a city must purchase title tin fee simple to the water bearing lands and provide for the just compensation of all other users deprived of their full use of existing water rights. All of these problems were obviated by the pueblo right vested in the City of Los Angeles by its Spanish founders.

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[736] Los Angeles Daily News, December 2, 1949.
[737] Supra, Chapter II.
[738] City of San Bernardino v. City of Riverside, 186 Cal 7, 24-25 (1921). Samuel C. Wield "Political Water rights," California Law Review, X (January, 1922), 111-19.

Riparian Law and Water Rights in Owens Valley. When Los Angeles went beyond the bounds of the Los Angeles River basin to import water from the Owens River, it was necessary to operate under the general provisions of California water law. By acquiring all of the private land with water rights along the lower portions of the Owens River and by appropriating the full surplus flow, Los Angeles had eliminated the adverse claims of riparian owners on the Owens River below the point of diversion.

However, the Natural Soda Products Company which extracted chemical products from the saline waters of Owens Lake brought suit to enjoin the City of Los Angeles from diverting water from Owens Lake claiming that damages to its operations would result by the alteration of the water levels of the lake. This litigation was settled when the company gave a quit claim deed to its riparian rights for a consideration of $15,000.[739]

Many of the later actions in Owens Valley, by the City of Los Angeles can be properly interrupted only in view of requirements of the water law of the state of California. Any expansion of the agriculture in Owens Valley by irrigation with water supplied to riparian lands from the numerous creeks or my pumping from the underground supply automatically vested water rights prior to the lower riparian and appropriative rights of the City of Los Angeles. For this reason, Los Angeles pursued policies which would limit the expansion of the irrigated agriculture in Owens Valley. The attempts to negotiate an agreement for the allocation of water between the local users and the city had as their objective stabilization of future water requirements.

Without the agreement of all riparian users, any attempt to construct a dam at Long Valley to conserve the heavy spring and summer run-off during years of a wet cycle could have been enjoined as depriving riparian owners of beneficial uses arising from their right to the full

[739] Los Angeles Examiner, August 11, 1915.

natural flow of the stream, subject only to the reasonable use of other riparian owners. Since the city was exporting the water from the watershed, it stood as an appropriator in relation to riparian users in Owens Valley.

Power of Condemnation. As one other phase of its efforts to establish an integrated plan of development of the Owens Valley water resources, Los Angeles was confronted with obstacles in acquiring one section of school lands which had passed into private ownership along the course of the Owens River gorge. While the drop in elevation for the nearly twenty miles length of the gorge is 2,200 feet. Without control of this section of land, Los Angeles could gain neither the fullest utilization of the power potentials of the Owens gorge nor regulate the flow of water from its reservoirs. Los Angeles had control of the only adequate reservoir site in Long Valley.

Negotiations were opened with the Mono Power Company to acquire its holdings and water rights in the section sixteen lands, but the discussions were stalemated by disagreement over the value of the lands and water right. The negotiations were suddenly terminated when the Mono Power Company sold its interests in the Owens River gorge to the Southern Sierra Power Company. In ad action by the City o f Los Angeles to condemn water rights and right of way across the section sixteen lands, the United States Circuit Court of Appeal denied the city's right to condemn the property of the Southern Sierra Power Company in view of a statutory qualification upon the power of condemnation which provided that,

> … property appropriated to the use of any county, city and county, incorporated city of town or municipal water district may not be taken by any other county, city and county, incorporated city or town or municipal water district, while such property is so appropriated and used for the public purposes for which it has been so appropriated.[740]

[740] Quoted in Mono Power Company v. City of Los Angeles, 284 Fed 784, 792 (1922).

Interpreting this section of the law, written to protect the interests of the watershed area in San Francisco's Hetch-Hetaby project, the court held that:

> …it was the purpose of the Legislature to provide that property of a private corporation, as well as property of a municipal corporation, appropriated to the public use in one county, may not be appropriated to a public use by any other county…, while such property is so appropriated and used.[741]

With this decision another legal barrier was erected to prevent the fullest development of the power potential of Owens gorge and the further conservation and development of the water resources in Owens Valley and Mono Basin agrees.

Water Right Litigation in Owens Valley. Before the purchase program was undertaken, the rights of the various users to the water of Bishop creek was established by A.E. Chandler acting as a referee for the United States District Court which adjudicated the controversy in 1921.[742]

During the people of the land purchase program negotiations were plagued by litigation or the threat of litigation involving the extraction of ground water. With respect to the water rights of the owners of land overlying underground water, the courts have held that,

> With respect to the other parties who take for use on land outside the watershed of the basin, it is now established…that no one, not even the owner of overlying land, has the right to take water out of the watershed for any purpose, if such taking will deprive of water any lands within the basin…[743]

Since the lowering of the water table of an underground basin might deprive owners of overlying land of vested rights in the rate of artesian flow, the depth of pumping, or subirrigation, the legal position of an appropriator exporting water from an underground basin was subject to serious

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[741] Ibid., p. 795.
[742] Hillside Water Company v. William B. Trickery, District Court of the United States In and For the Southern District of California of the Northern Division, San Francisco, No. B-61.
[743] San Bernardino v. Riverside, 186 Cal 7, 15 (1921)

hazards unless a prescriptive right could be established by unchallenged adverse use for a period of more than five years.

During the 1920's, each action brought to enjoin the pumping operation of the City of Los Angeles by overlying lands owners was tried and an injunction was issued. But, in each case Los Angeles purchased the affected property, causing the judgment to be vacated.[744] In City of Los Angeles v. Los Angeles-Inyo Farms Co., the action to enjoin pumping operations was converted into an eminent domain proceedings when negotiation failed to reach a purchase agreement, but these proceedings were later abandoned.[745]

In 1931, the Hillside Water Company, a subsidiary of the Southern Sierra Power Company brought an action to enjoin Los Angeles from pumping in the Bishop-Big Pine Basin or the Bishop cone, an area of 95,000 acres. During the course of the trial, the City of Los Angeles acquired the 6,600 acres of land and the water rights of the Hillside Water Company, but interveners and plaintiffs in fifteen other suits, which had been consolidated for trial, continued the action. The owners of the 640 acres of land still affected, including land owned by the town of Bishop and the Bishop school districts, claimed damages resulting from a lower water table which diminished the extend of subirrigation and increased the amount of surface irrigation, and that increased use of the colder Bishop Creek water had retarded plant growth causing the land to produce smaller crops.

In the opinion of the California Supreme Court on an appeal from an injunction granted by the trial court, Mr. Justice Shenk observed:

> … The present injunctive order requires that the underground water table be maintained in its natural state uninfluenced by the pumping operations of the defendants by means of its Warm Springs and Bishop groups of wells. This in effect prevents the beneficial utilization of water beneath ninety-eight per cent of the area in the Bishop cone in order

[744] W.A. Chalfant, The Story of Inyo (rev. ed; n.p., 1933), pp. 382-84, 398, 400, 403.
[745] 134 Cal App 268 (1933).

> that the water table beneath two per cent of this area be maintained in its natural condition. The Constitution now requires these waters "be put to beneficial use to the fullest extend of which they are capable, and that the waste or unreasonable uses or unreasonable method of use of water be prevented."…the judgment herein must be made to conform to the new state policy in whatever respect it may be in contravention thereof.[746]

However, in remanding the action to the trial court for further proceedings consistent with this statement of policy the court pointed out that:

> … the right of an overlying land owner to the percolating water beneath his lands is analogous to the riparian right, has not been changed and has been recognized in the subsequent cases declaring the new law. There under these respondents have had and still have the right to the use of the underground waters in the Bishop cone as a supporting underground water supply available to and for the benefit of their farming operations. It is readily seen that the use of this underground supply as an undersupport for irrigation or other surface uses would minimize the requirements of surface and crop conditions. And it may not be rightly said that such use is not beneficial use of the underground water.[747]

When Los Angeles failed to convert the action into a condemnation proceedings, the trial court issued a new order that the city be,

> … enjoined, prohibited, and restrained from in any manner whatsoever pumping, extracting, taking or transporting out of the Bishop cone area any subterranean waters from beneath said area.…[748]

However, Los Angeles may have the injunction removed when it chooses to institute condemnation proceedings to acquire the adverse water rights.

Considering the nature of the California system of water law, it is doubtful if Los Angeles could have pursued any other policy than the acquisition of substantially al of the land and water rights in Owens Valley. The rapidly growing demands of the City of Los Angeles and the expansion of agriculture in Owens Valley were the circumstances for an inevitable conflict over water supply. Since local users riparian to streams possessed a prior claim to Los Angeles,

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[746] Hillside Water Company v. City of Los Angeles, 10 Cal (2d) 677, 685-86 (1938).
[747] Ibid., p. 686.
[748] Hillside Water Company v. City of Los Angeles, In the Superior Court of the State of California In and For the County of Inyo, No. 3073.

purchase of these private lands was the only way in which Los Angeles could permanently protect its water supply. To be able to utilize the underground waters to balance the short water crop during periods of low precipitation the adverse claim of any owner of land overlying subterranean water had to be eliminated. This required the ownership of all overlying lands. Even with the control of ninety-eight per cent of the land in the Bishop cone, the City of Los Angeles will have to condemn the adverse property rights of the owners of the other two per cent to be able to utilize that underground supply.

The recent controversy over making the public domain available for re-entry and settlement raises the old spectre of an expansion in agricultural land uses with prior claim being vested in the new settlers to water supplies as against the City of Los Angeles. To obviate such a possibility, Los Angeles has attempted to secure the adoption of the Poulsen bill which will obligate the federal government to a contractual arrangement reserving certain water rights in perpetuity, thus preventing their acquisition by any adverse water users.[749]

New Problems: Flood Control v. Maximum Utilization. While California water law has been one of the most significant factors in determining Los Angeles' basic polices relating to its water supply areas in Owens Valley and Mono Basin, new actions by the California legislature and judiciary impose serious, if not contradictory requirements upon Los Angeles as a water appropriator.

During a long series of dry years, Los Angeles had appropriated the complete flow of the Owens River causing Owens Lake to become dry. Chemical plants which extracted various chemical and by-products from the saline deposits of the lake made improvements locating new plants on the bed of the lake on the assumption that the complete diversion of the water would continue. Early in 1937, during a heavy flood, the flood gates of the diversion works were

[749] Supra, pp. 280-81.

opened permitting 50,000 acre feet of water to discharge into the lake. As a result, the Natural Soda Products Company brought suit against the City of Los Angeles for damages caused by the flooding of its works located on the lake bed and an injunction to prevent the city from permitting flood waters to flow into the lake. The company was awarded $153,578.85 in damages by the trial court. On appeal, the California Supreme Court confirmed the lower courts decision holding that,

> … one who makes substantial expenditures in reliance on long-continued diversion of water by another ha the right to have the diversion continued if his investment would otherwise be destroyed.
>
> A change in the flow of a stream that appears to be permanent usually leads to costly adjustments by those interested, as they come to regard the artificial condition as permanent. It is therefore reasonable that they should receive as much protection as if the condition were natural.[750]

In this case the court went beyond the established doctrine that an upper appropriator may not alter the regimen of his appropriation to the injury of a downstream proprietor and established the principle that the upstream appropriator has a duty to dispose of surplus flood water, for which he has no beneficial use, so as to cause no injury to the downstream proprietor.[751]

This new principle of law has a number of serious implications for water users and the fuller utilization of water resources. At least by implication the decision,

> … nullifies the fundamental doctrine of appropriative rights, which limits the amount of water which appropriators may divert to the amount which they can devote to a reasonable and beneficial use.[752]

Instead a positive obligation is placed upon the upper appropriator to dump and waste waters not needed for beneficial use. These dumping operations in turn may cause other

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[750] Natural Soda Products Company v. City of Los Angeles 23 Cal (2d) 193, 197 (1943). Underlining added.
[751] C.T. Waldo, Effect of Owens Lake Litigation on Water Appropriation in California (MS, 1946), pp.5-6.
[752] Samuel B. Morris, "Water and Power Problems of California Municipalities," in California, Governor, California Water Conference. 1945 (Sacramento, 1945), pp. 357-58.

damages in the dumping area since these areas are apt to be subject to excessive water run-off at the same time.

The decision also clearly places upon an upper appropriator the obligation of operations upstream storage works to provide flood control protection against damage from abnormal natural flow to downstream proprietors who have located within the natural flood channels during the years of a dry cycle. The requirement of flood control is basically incompatible with an appropriator's primary purpose of storing as much water as he will need for future consumptive use. Flood control operations require the maintenance of empty storage capacity within a reservoir to capture excessive run-off during the flood stage.

In addition to the obligation for flood control established by the courts in the Natural Soda Products Company case, the legislation in 1945 imposed upon the City of Los Angeles the obligation of making any surplus water available for beneficial use in the Owens Valley-Mono Basin watershed area when it enacted a statute providing that:

> It is hereby declared to be the established policy of this State that the right of a municipality to acquire and hold rights to the use of water should be protected to the fullest extent necessary for existing and future uses, but that <u>no municipalities shall acquire or hold any right to waste water, or to use water for other than municipal purposes</u> or to prevent the appropriation and application of water in excess of its reasonable and existing needs to useful purposes by others subject to the rights of the municipality to apply such water to municipal cases as and when necessity therefore exists.[753]

Will the wasting of flood waters be incompatible with the legislative requirement to prevent the waste of surplus water?

<u>California and the Colorado River.</u> Since the problems of the Colorado River water supply primarily involve interstate and federal problems, California as one of the Colorado River Board of California, to represent the interests of its Colorado River water users in inter-state and

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[753] California, Legislature, <u>Statutes of California,</u> 1945, 55th sess. (Sacramento, 1945), p. 2520. Underlining added.

federal negotiations.[754] While officially declared to be an agency of state government, the Colorado River Board of California is composed of a representative from the City of San Diego, the Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, the Metropolitan Water District of Southern California and the Department of Water and Power of the City of Los Angeles. The governing board of each of these local governmental agencies nominated not less than two persons among whom the Governor chooses and appoint one as a member of the Colorado River Board of California.

The Colorado River Board of California in turn selects from among its members a chairman who is ex-officio, the Colorado River Commissioner. Subject to the general policies and directions of the Board, the Commissioner is authorized to exercise on behalf of the state of California, the rights and powers granted to the state by section sixteen of the Boulder Canyon Project Act. In addition to this general authority, gathering data regarding the claims of all states to the Colorado River and perfecting California's claims,

> The commissioner shall confer with representatives of other States in the Colorado River basin, representatives of the United States, and others concerning problems and measures relating to the development of the Colorado River System, and the protection of the interests therein of the Sate and the United States, and shall negotiate respecting such problems and measures discuss the same and formulate and recommend to the Governor and the Legislature measure, agreements and legislation deemed for the benefit of the State and the United States.[755]

Finances for the operation of the Colorado River Board of California are provided from a special Colorado River Fund created by contributions from various water user groups, whether or not they are directly represented on the Board. The Board is exempt from the normal requirements of state law controlling the internal administration and operation of a state agency.

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[754] California, Water Code (Sacramento, 1945), pp. 180-90.
[755] Ibid., p. 189.

With this rather ingenious political device, California is able to provide for the official representation of the local interests involved in interstate and federal negotiations which call for the formal representation of the state as a political entity.

The State of California and the Operation of Los Angeles' Water and Power Utilities

Home Rule. The general government for the administration and operation of the water and power system in Los Angeles had been provided within the framework of a home rule charter adopted pursuant to provisions of the constitution of California permitting cities of more than 3,500 inhabitants to frame a charter for their own government.[756] The water department was originally provided for by an amendment in 1903 to the charter of 1889, the first home rule charter. This amendment was later revised and amended in 1911 to provide for the Department of Public Service. In 1925, a new home rule charter was adopted, providing for the government of the present Department of Water and Power. The California constitution authorizing the establishment of the home rule charter provides that:

> … the municipality governed thereunder may make and enforce all laws and regulations in respect to municipal affairs subject only to the restriction and limitation provided in their several charters and in respect to other matters they shall be subject to general laws.[757]

The pattern of state and local relationships in the operation of the water and power systems depends largely upon the judicial interpretations of what is a municipal affair and what is a matter of general concern, subject to state law. In addition the state judiciary has exerted an important influence upon municipal operations by the power of interpreting the scope and meaning of home rule charter provisions even where the activity is clearly established as a municipal affair.

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[756] California, Legislature, Assembly, Constitution of the State of California, article XI, section 8, pp. 157-61.
[757] Ibid., p. 161.

The operation of both the water and power utilities has repeatedly been held to be a municipal affair subject to the provisions of the Los Angeles municipal charter.[758] In the area of municipal affairs the courts have held that:

> The powers of the City of Los Angeles are not derived from the legislature, but from a freeholders' charter directly provided for by the constitution. That is to say, the people of the state through the constitution authorize the people of the city to regulate its affairs by a charter to be formed by a board of freeholders and voted upon by the people of the city and approved by a resolution of the legislature.[759]

While approval of the state legislature is required by the California constitution before a charter can become effective, its discretion is limited. In Mesmer v. Board of Public Service Commissioners, the court has held that:

> The electors through their board of freeholders, determine upon the provisions of the law under which they propose to be governed; the legislature merely asserts, when its approval is given, that the municipality may be so governed.
>
> … the legislature does not, when it approves by a resolution, a charter, exercise law-making power….Municipalities are given the power to draft charters the provisions of which, in so far as they refer to municipal affairs, are superior to the general state laws. The legislature cannot enact any law which will repeal or change such provisions.[760]

Proprietory Freedom. As a proprietory, as distinguished from a governmental function, the courts have been inclined to allow the Department of Water and Power and its predecessors in interest broad discretion to act within the limits imposed by the Los Angeles city charter.

When the authority of the Board of Public Service Commissioners to buy a lot and contract for the construction of an office building was challenged in a taxpayer suit, the court overruled the objection with the following conclusion:

> The commission having charge of the city water department as created by the charter, constitutes an agency of the municipal government, but one possessed of independent functions; it is a legal entity. It serves as the managing and directing power of the utility

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[758] Los Angeles Gas and Electric Corporation v. City of Los Angeles, 188 Cal 307, 317 (1922). Joseph Mesmer v. Board of Public Service Commissioners, 23 Cal App 578, 582 (1913). Edward F. Wehrle v. Board of Water and Power Commissioners, 211 Cal 70, 73 (1930).
[759] Los Angeles Gas and Electric Corp v. City of Los Angeles, 188 Cal 307, 317 (1922).
[760] 23 Cal App 578, 581-82m (1913).

> which it has in charge and its sphere of action is free from interference by the legislative body. It possessed the power and the sole power to authorize the expenditure of money derived from the sale of water, as its discretion may suggest, including the power to purchase additional lands and water rights and other property necessary to the maintenance of the utility.[761]

When the Department of Water and Power was purchasing the town properties in Owens Valley, the authority of the Department to make the purchase of town properties and to attach percentage adjustment to the appraised value of the property was attacked in a taxpayer suit seeking to enjoin the department from consummating the proposed purchases. The California Supreme Court sustained the broad powers of the department "…to determine whether or not it is needful that the City of Los Angeles acquire water rights appurtenant to the lands it is intending to purchase…."[762]

On the question of the percentage increases above the appraised value, the court said:

> We think that the question of the price the city should play for the lots of land and for the accompanying water rights, in the light of the needs of the city and the available water supply secured by the purchase and all other facts in connection therewith, is a question which must be left entirely to the disposition and judgment of the board. [763]

The proprietory nature of the Department of Water and Power was the basis of a striking opinion denying a citizen, W.C. Mushet, the right to inspect the departments' accounts, records, papers and documents. In the case of a municipal electric utility, the court held that:

> … we are convinced that the books and papers in question are not public documents, as the term is used in the sections of the code now under review. The appellants, it is true, are by the charter of Los Angeles made officers of the municipality; but the books and papers which respondent seeks to examine are not made official documents merely because they are kept under the direction of city officials.[764]

Considering the semi-private nature of the accounts and records of the Department of Water and Power as a municipal utility the court held that a citizen of Los Angeles had the right to inspect

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[761] Ibid., p. 582.
[762] Wehrle v. Board of Water and Power Commissioners, 211 Cal 70, 72 (1930).
[763] Ibid., p. 73.
[764] W.C. Nushet v. Department of Public Service, 35 Cal App 630, 635 (1917).

books and papers only to the same extent as a stockholder of an ordinary corporation.[765] In dismissing the instant case the court found that:

> The allegation of the answer show that the Los Angeles Gas and Electric Corporation is the party beneficially interested in this action, in that they show that Mushet desired to examine the records of appellants in a search for information for that corporation and not for himself. If the corporation is entitled to examine the records it can, of course, do so through Mushet as its agent; but whether Mushet, as its agent, may make the examination cannot be determined at his suit, but only at the suit of the principal, the corporation itself.[766]

In the area of debt administration, the California courts have been exceptionally liberal in construing the powers of the Department of Water and Power. The constitution of California specifically provides that no county, city, town township, board of education or school district may incur any indebtedness or liability in any manner or for any purpose exceeding in any one year the revenue of that year, without the approval of two-thirds of the qualified electors.[767]

In the early case of Mesmer v. Board of Public Service Commissioners, the applicability of the constitutional provision to the operations of the municipal water system was first questioned when the authority of the department to purchase a building lot for a sum exceeding the annual revenue, was challenged in the courts. The court held that the provision of the constitution was not applicable to a home rule city:

> The prohibition in this section provided does not extend to a board of commissioners exercising functions under the charter of a city, such as appears here. Furthermore, the money used and proposed to be used in the purchase of the lot of ground and the erection of the building was not taken from the ordinary revenue of the city, and to that extent it may be said that the city's credit was not involved in the incurring of the indebtedness. [768]

Under the city charter of 1925, the Board of Water and Power Commissioners were authorized to create an indebtedness in case of an emergency for a period not to exceed five

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[765] Ibid., p. 631.
[766] Ibid., pp. 632-33.
[767] California, Legislature, Assembly, Constitution of the State of California, article XI, section 18, pp. 177-79.
[768] 23 Cal App 578, 583 (1913)

years and to be payable only out of the water or power revenue funds. Following the St. Francis Dam disaster, a bond issue of $250,000 was authorized by the Board of Water and Power Commissioners under this charter provision. The action was challenged in a taxpayer suit as a violation of the state constitutional requirement. In upholding the validity of these revenue bonds, the court found:

> The present Department of Water and Power, under the city charter, appears to have all of the powers of its predecessor boards and certain additional powers, including the power, upon the determination that an emergency exists, to issue its short-term notes under section 224. As so constituted and empowered it is, like its predecessors, independent of the city council except as to certain limitations which do not destroy its identity as an independent body. Also it must be said that the indebtedness of the board and the obligations of the department are not those of the city itself, as contemplated by the constitutional provision.[769]

A later charter amendment authorizing loans from either the state or federal government, secured only by revenue bonds was approved by the California Supreme Court with the same reasoning I a test suit brought during the negotiations for the $22,800,000 Reconstruction Finance Corporation loan in 1933.[770] The revenue bond charter amendment of 1947 has not been challenged in the courts.

The Expenditure of the Funds for Political Purposes. During the campaign to secure the approval of the proposed $35,000,000 bond issue in 1923 to provide funds for the construction of transmission lines to the Boulder Canyon dam and to make improvements in the municipal electric distribution, the Public Service Commission spent power funds aggregating $12,415.15 for election campaign purposes including the printing of cards, banners, windshield stickers, auto banner, labels, circulars, handbills, dodgers and postcards, and advertising in newspapers.

The expenditures were approved by the city attorney in replay to a query concerning their validity from the city auditor. In approving the expenditures the city attorney said:

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[769] Sophie H. Shelton v. City of Los Angeles, 206 Cal 544, 549 (1929)
[770] Department of Water and Power v. James P. Vroman, 218 Cal 206 (1933).

> It seems clear to me that under the charter provision giving the Board power to make necessary expenditures for "extending" the business of said department pertaining to electric power, when considered in connection with the duty which the city assumes when it undertakes to supply its inhabitants with light, it is entirely reasonable and proper expenditure of funds for the Board to make such expenditures as it may reasonably consider necessary for the purpose of giving the voters who are to decide upon a bond issue in connection with that department all of the information which such Board has available and which it feels the voters should have the benefit of in making their decisions upon such bond issues.[771]

However, the California Supreme Court took a different view of the matter in a taxpayers suit to compel repayment of the funds into the city treasury. While admitting,

> That the power of a city of a proprietory character are given a more liberal construction than those which are strictly governmental in character is settled beyond controversy….[772]

the court nevertheless held that:

> It would be unreasonable and unwarranted…to hold that a city or one of its governmental boards authorized to maintain, conduct, and extend a public utility, could use the funds with which it is entrusted for the purpose of conducting said public utility, for an entirely different and distinct purpose—that of carrying on a campaign for the purpose of influencing the voters of said city in favor of a bond issue.[773]

While the Department of Water and Power felt impelled to secure the amendment of the city charter to advertise and promote the sale of its products, no question apparently was ever raised about the expenditure of water and power funds for contributions to the Boulder Dam Association and similar organizations to conduct campaigns to influence voters on questions of state and federal legislation or for the representation of the department's interest in the state and national capitals.

Civil Service Requirements. Only in the interpretation of the civil service provisions of the city charter, have the courts tended to place rigid requirements upon the operation of the

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[771] Letter from Jess E. Stephens, city attorney, to John E. Meyers, city auditor, dated July 28, 1924, Boulder Dam Association, file no. 43.
[772] W.W. Hines v. R.F. Del Valle, 201 Cal 273, 285 (1927).
[773] Ibid., p. 296.

Department of Water and Power. Since these operate generally for the city government of Los Angeles, they are orientated more toward the general government character of municipal administration than the specific proprietary nature of the Department of Water and Power.

The only important case effecting the Department of Water and Power in the administration of civil service regulation involved the dismissal of an employee, Zerah H. La Prade. The city charter provides that no person in the classified service may be discharged except for cause. Upon petition of the discharged person, the officer or board having the power of appointment is required to make an investigation and decide either to sustain the dismissal or reinstate the individual. In La Prade v. Department of Water and Power, the court interpreted these general provisions to mean that:

> In any proceeding of this nature evidence must be adduced to sustain the charges. It is not incumbent on the employee to proceed. The burden does not rest upon him to refute the charges made. If no evidence is adduced sustaining the discharge the board must find that the discharge was not justified.
>
> Administrative tribunals exercising quasi judicial powers which are required to make a determination after a hearing cannot act on their own information. Nothing may be treated as evidence which has not been introduced as such, inasmuch as a hearing required that the party be apprised of the evidence against him in order that he may refute, test and explain it. And the action of such tribunals based upon the report of an investigator, assuming it is competent evidence when forming the basis for the tribunals determination is a denial of a hearing, unless it is introduced into evidence and the accused is given an opportunity to cross-examine the maker thereof and refute it.[774]

In effect the court has made a charter provision requiring an investigation and decision into a requirement for a formal trial in order to dismiss a member of the classified civil service. With charter provisions which are already very restrictive, the insistence of the courts on a strict interpretation or requirement beyond the provisions of the charter such as in the La Prade case have tended to compound the problems of personnel administration.

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[774] 27 Cal (2d) 47, 51-52 (1945).

Extra-Territorial Operations. When Los Angeles first went to Owens Valley, the charter already provided for the acquisition of lands and water rights outside the city limits which enabled the city to purchase the Eaton holdings. However, no authority existed for conduct of the various operations necessary for the construction of an aqueduct by force account. To authorize these operations, the California legislature enacted a statue providing that:

> Any incorporated city, town or municipal in this state is hereby authorized to construct, equip, use, maintain and operate any works, roads, railroad, tramway, power plant, telephone or telegraph line or other necessary works or structures , within or without such city, town or municipal corporation is located for the preparation, manufacture, handling or transporting of any materials or supplies required in the construction or completion of such city, town or municipal corporation of any public work, improvement or utility, and for the purpose of constructing, equipping, using, maintaining or operating any such works, road, railroad, tramway, power plant, telephone or telegraph line, or other necessary works or structure, such city town or municipal corporation is hereby authorized to lease or acquire, by purchase, condemnation or otherwise, and hold and use any land, right of way, water, water right, quarry, gravel bed or other mineral deposits, or any other necessary property, within or without such city, town or municipal corporation or the county wherein such city, town or municipal corporation is located.[775]

With this nearly unlimited power for extra-territorial operations, Los Angeles was granted ample power for the construction and operation of the Los Angeles Aqueduct. The only limitation upon the powers granted in the act was the reservation that the act should be not construed as enlarging any limits prescribed by state law or municipal charter upon taxation, the expenditure of public funds, or the creation of indebtedness by the municipality.

In order to preserve the tax base for local units of government in Owens Valley, following the land and water right purchases by Los Angeles, the California legislature submitted a constitutional amendment for popular approval at the joint request of the City of Los Angeles and Inyo County to remove the regular tax exemption on municipally owned property from the lands which had previously appeared on the tax rolls as private property.[776] By the terms of this

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[775] California, Legislature, Statutes of California, 1907, 37th sess. (Sacramento, 1907), pp. 597-98.
[776] California, Legislature, Assembly, Constitution of the State of California, article XIII, section 1, pp. 190-91.

amendment Los Angeles has become the principal taxpayer in Inyo and Mono counties. An attempt by the assessor of Mono County to tax the "patent rights" on lands conveyed to the City of Los Angeles by the federal government was set aside by the courts since, "there existed no such thing, entity or right to receive a patent."[777]

In 1925, the legislature intervened directly in the land purchase and reparations controversy by the enactment of a statute creating a liability on the part of a municipal corporation or other water supplier who enters upon any watershed,

> … for all damages suffered or sustained by them or any of them, either directly or indirectly because of injury, damage, destruction or decrease in value of any such property, business trade, profession or occupation resulting from or caused by the taking of any such lands or waters, or by the taking, diverting or transporting of water from such watershed to and for use by or in any such municipal corporation.[778]

Liability for all past damages was also established provided the claims were made within a two-year period following the passage of the act.

This statute formed the basis of much of the agitation in the intense conflicts between Owens Valley and the City of Los Angeles from 1925 until the failure of Watterson's banks in 1927. After Governor C.C. Young's intervention into the controversy, an agreement was reached to test the constitutionality of the statute in the courts. However, the attorneys for the reparations associations permitted the two-year limit to expire before starting any action. No damages were ever paid under the provisions of this statute.

During the towns purchase program, the California Senate passed a resolution sponsored by Senator Joe Riley, a member of the Johnson-Riley pool in Bishop, creating a special Senate committee to investigate the water situation in Inyo and Mono counties. The findings of the report were generally critical of Los Angeles' relations with Owens Valley, but no

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[777] City of Los Angeles v. Board of Supervisors of the County of Mono 108 Cal App 655, 666 (1930).
[778] California, Legislature, Statutes of California, 1925, 46th sess. (Sacramento, 1925), p. 251.

recommendations were made for state interventions. Rather the committee suggested that Los Angeles buy all of the water rights and land in Owens Valley, properly compensate owners of business property for good will and business losses, and that the city compromise the difference in prices.[779]

In 1945, the legislature again intervened to enact two statutes, one to establish the basic sale and leasing policies for the administration of city lands in Owens Valley and another to deny the city the right to waste water or to use water for other than municipal purposes.[780] Beyond these occasional restrictions the Department of Water and Power has enjoyed extensive freedom in its operations in Owens Valley.

Problems of State-Local Relations in the Development of Los Angeles' Water Resources

The broad latitudes and substantial independence of action permitted the operation of a water and power utility as a municipal affair in California under a home rule charter, has enabled Los Angeles to assume the initiative and leadership in developing the available water resources to meet its needs and remove the barrier to its future growth and development. The development of local water resources by Los Angeles through powers enjoyed by the Department of Water and Power stands in marked contrast to the years of controversy and, finally, abdication in the development of the Central Valley Project by the agencies of state government.

In the areas of government beyond the realm of municipal affairs, the need for integrated state policies and the relations between water consuming and water producing areas, present serious problems of state and local relations.

In the area of water law, California has been governed by two masters, the judiciary and the legislature. Throughout much of the history of the state, these two instrumentalities of state

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[779] California, Legislature, Senate, Special Investigating Committee, Report on Water Situation in Inyo and Mono Counties (Sacramento, 1931), 10 pp.
[780] Supra, pp. 276-78.

government have pursued divergent policies relating to water rights and the development of water resources. IT was not until 1935, after the adoption of the "reasonable use" amendment, that the California Supreme Court conceded that,

> … it is readily apparent that it is for this court, which has largely created the water law of this state without constitutional direction, to cause the law to conform to the state policy now commanded by our fundamental law.[781]

The possibility of being required to serve two different masters pursing divergent policies was again raised for Los Angeles when the California Supreme Court held the city responsible for the prevention of flood damages to a downstream proprietor located on the bed of a natural watercourse and the legislature denied a municipality the right to waste water or to use water for other than municipal purposes. These actions present possibilities of serious controversy with different interests in the water supply area.

In regard to the problem of relations between water consuming and water supply areas, the legislature has declared that:

> … there are communities in this state in which a considerable portion of the agricultural lands and of the improved commercial and business sites thereof are properties...owned by local government agencies located in distant parts of the State. Those circumstances give rise to the relationship, inter-relationship and interests between the inhabitants of such communities and the local governmental agencies thereof and the owners of such properties which call forth and required the exercise of the police power inherent in the state as sovereign, for the reconciliation of the respective rights, duties, powers and privileges….[782]

While this legislative declaration is an excellent statement of the problem in generalities, only piece meal approaches have been made to resolve this important problem of state and local government. There has been no recognition on the part of the state that the policy of municipal ownership of the lands of the watershed area are a by-product of the state's own water law. No attempt has been made to protect a municipality which has acquired the full water rights of a

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[781] Peabody v. City of Vallejo, 2 Cal (2d) 351, 365 (1935).
[782] California, Legislature, Statues of California, 1945, 55th sess., p. 2520.

watershed from future competition for water supplies which might arise from opening federal lands to entry. No comprehensive view of the whole problem has ever been taken by state officials to approach some general solution.

> For ten years the Federal Government at Washington has been working unremittingly in its endeavors to organize this enterprise that looked to the utilization of Colorado River floods. It found that the undertaking called for a government organization that was quite new in our experience. We have long been accustomed to handling problems that related to county, state and nation. Here was one that was bigger than the state, which, in fact, affected seven states. Yet it was less than national for, outside of this Southwest region, interest in it was largely academic. It was, in fact, a regional problem. It has been handled as a regional problem, administered by the seven interested states. This new principle of a regional problem, regionally administered, has had its first dramatic demonstration.
>
> Ray Lyman Wilbur, 1930

CHAPTER IX

WATER FOR LOS ANGELES AS A PROBLEM OF FEDERALISM

The United States government is directly concerned with various phases of water administration through its role as proprietor of the various federal public lands which from te bulk of the lands in the upper watershed areas of the western drainage systems and through its control of interstate and navigable streams. In both of these capacities, the federal government has been an important factor in the development of Los Angeles water supply. In Owens Valley, the cooperation of the federal government was necessary to secure the various rights of way and grants of land for the construction of the water supply and aqueduct system. On the Colorado River, the federal government, as the responsible authority for an interstate navigable stream, serves as the final arbitrator of the rights and interests of the various states and water users as reflected in the past and future developments on the river.

The Federal Government, Owens Valley and Municipal Ownership

When the City of Los Angeles first became interested in the development of the Owens River water supply, two sources of competition existed for the exploitation of Owens River water on comprehensive basis. Following the passage of the Reclamation Act in 1902, the

federal government initiated investigations of the feasibility of a federal reclamation project in Owens Valley, withdrew certain public lands and filed upon the surplus waters of Owens River to establish an appropriative right for the development of a potential reclamation project. On the other hand, Fred Eaton, who first conceived the possibility of transporting Owens River Water to Los Angeles, was interested in combining with the City of Los Angeles to develop a joint project to meet the future needs of the city and to have the surplus water available for sale to vacant lands outside the city limits. According to this plan, Eaton would supply the necessary land and water rights and the City of Los Angeles would construct an aqueduct with a capacity of 20,000 miner's inches, for which the city would receive 10,000 miner's inches of water for its future domestic needs and the Eaton interests would secure the surplus water above the city's quota and the right to the hydro-electric power development along the aqueduct.[783]

However, the regional and national representatives of the Reclamation Service and other federal agencies such as the Geological Survey and the Forest Service were unwilling to accede to the interests of the City of Los Angeles unless the Owens Valley aqueduct were developed exclusively as a municipally owned and operated water supply system. With this understanding, tentative approval was given to the project by J.B. Lippincott, regional representative and F.H. Hewell, chief engineer of the Reclamation Service early in 1905.[784]

In 1906, when Congress was considering a bill to grant the necessary rights of way over federal land and to permit the sale of public land necessary for the consummation of the project to the City of Los Angeles, an amendment was proposed to prohibit Los Angeles from using the water for irrigation purposes. At the request of W.B. Mathews and William Mulholland,

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[783] Los Angeles City, Los Angeles Aqueduct, First Annual Report of the Chief Engineer of the Los Angeles Aqueduct to the Board of Public Works (Los Angeles, 1907), p. 17.
[784] Los Angeles Times, July 29, 1905.

representing the City of Los Angeles and Senator Frank. P. Flint of California, a conference was called at the White House to consider the problem raised by the proposed amendment.

As a result of this conference, President Theodore Roosevelt drafted a memorandum reporting the sense of the meeting:

> Messra, Walcott and Pinchot state that there is no objection to permitting Los Angeles to use the water for irrigating purposes so far as there is a surplus age after the City's drinking, washing, fire and other needs have been met. They feel that no monopoly in an offensive sense is created by municipal ownership of the water as to deprive the City of Los Angeles of the right to use the water for irrigation would mean that for many years no use whatever could be made by it of the surplus water beyond that required for drinking and similar purposes.[785]

After dismissing the opposition of the private power companies because of their pecuniary interests and the opposition of the Owens Valley farmers as contrary to the "infinitely greater interest" to be served by transporting the water to Los Angeles, President Roosevelt enunciated the following plan of action:

> Under the circumstances, I decide, in accordance with the recommendation of the Director of the Geological Survey and the Chief of the Forestry Service, that the bill be approved, with the prohibition against the use of water by the municipality for irrigation struck out. I request, however, that there be put in the bill a prohibition against the City of Los Angeles ever selling or letting to any corporation or individual except a municipality, the right for that corporation or the individual itself to sell or sublet the water given to its or him by the City for irrigation purposes.[786]

This basic policy was approved by Congress in an act authorizing the sale of lands and the granting of rights of way across public land for Los Angeles to contrast the Owens Valley aqueduct with the qualification that:

> … the City of Los Angeles is prohibited from ever selling or letting to any corporation or individual, except a municipality, the right for such corporation or individual to sell or sublet the water sold and given to it or him by the city.[787]

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[785] Los Angeles City, Department of Public Service, Complete Report on Construction of the Los Angeles Aqueduct (Los Angeles, 1916), p. 68.
[786] Loc. cit.
[787] U.S. Statutes at Large, XXXIV (1906), 803.

The significance of this type of provision in federal grants of land and rights of way over public land was demonstrated in an effort to make a similar provision applicable to the distribution and sale of electrical energy in a bill to secure right of way through forest reserve in the Owens Gorge area for water and power developments. In arguing for the requirement of municipal ownership and the prohibition of sale to corporations and individuals for the redistribution of hydro-electric power, Mayor Fredrick T. Woodman stated:

> This special bill removes the possibility of the private power corporation purchasing city power for resale. It strengthens the idea of municipal ownership and control and the idea that you shall not sell city power for resale except to outside municipalities.
>
> It is merely an addition to the city charter. In wiping out the provision that city power may be sold to private companies for resale, if approved by a two-thirds vote of the people, the pending bill kills any chance there may be of having the municipal power handles and controlled by private companies.[788]

While the municipal ownership provision was not written into the amendment adopted in 1919, granting rights of way for the Owens Gorge development, a comparable provision has been inserted into such acts as a standard practice in more recent years. The most recent right of way grant to the City of Los Angeles made by Congress provides:

> That, whenever the land granted herein shall cease to be used for the purposes for which it is granted, the estate for the grantee or of its assignees shall terminate and revest in the United States. That any grant hereunder shall not be assigned to any private individual, association of such individuals or a private corporation.[789]

While Los Angeles has sought the inclusion of a requirement of municipal ownership as a condition of the grant of privileges upon the public lands of the United States as a factor to reinforce the policy of municipal ownership of its water and power utilities during the years of controversy over the extension of the municipal power system, a similar provision applicable to San Francisco's Hetch Hetchy project resulted in legal action in which the courts were called upon to determine whether such a provision was an unconstitutional invasion of the rights of

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[788] Los Angeles Examiner, May 29, 1918.
[789] U.S. Statutes at Large, XLIX (1936), 1894.

state of California as an attempt to legislate on a municipal affair within the reserved powers of the state. The United States Supreme Court held:

> … Congress say constitutionally limit the disposition of the public domain to a manner consistent with its views of public policy. And the policy to govern such public lands may, if Congress chooses, be one designed to avoid monopoly and to bring about a widespread distribution of benefits. The statutory requirement that Hetch-Hetcy power be publicity distributed does not represent an exercise of a general control over public policy of a State but instead only an exercise of the complete power which Congress has over particular property entrusted to it.[790]

In the exercise of its general power "…to dispose of and make all needful Rules and Regulations respecting the Territory and other Property belonging to the United States,"[791] the federal government has a significant source of power to influence the development of water resources upon the federal lands. Since the principal watershed areas in the west are owned by the federal government, the policies established by Congress, such as the requirement of municipal ownership, have had an important influence upon water resources administration by local agencies of government. But the influence of the federal government in the development of the water resources on interstate, navigable streams such as the Colorado River has been substantially greater than its influence on the development of non-navigable, intrastate streams within the federal lands.

Early Developments on the Colorado River

As the only major stream in the most arid region of the United States, the competition for the water supply of the Colorado River has been intense. In each of the Colorado River basin states he future potential of growth and development are largely contingent upon the portion of the Colorado River that will be available to the particular state or area. No other river in America is so vitally important to the subsistence of the people nurtured by its water.

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[790] United States v. City and County of San Francisco, 310 U.S. 16, 30 (1939).
[791] Loc. cit., quoted from U.S. Constitution, Article IV Sec.3.

The Physical Problem. The physical circumstances of the Colorado River have tended to complicate the problems of public policies relating to its development. For a relatively large watershed of 242,000 square miles, the Colorado River produces a relatively small quantity of water. In comparison the Columbia River with a watershed area of 259,000 square miles produces approximately 160,000,000 acre-feet of water annually, nearly ten times the quantity of the Colorado River.[792]

The physiographic characteristics of the Colorado River basin has produced an uneven pattern of development through the watershed area as a whole.[793] Of the three great physiographic provinces of the river, the upper mountain country, the canyon country, and the lower desert plains, the canyon country or the vast middle course of the river is almost entirely precluded from development by irrigation or similar consumptive uses since the river flows several hundred feet below the surface of the surrounding plateau through narrow chaams. To utilize the water in this area would require exceptionally high dams and either extended tunnels or large pumping operations to place the water upon the land at a relatively great cost.

While the numerous mountain valleys of the upper reaches of the Colorado River watershed are susceptible to irrigation and other domestic and industrial developments, the relatively high elevation, frequently in excess of 5,000 feet, the short growing season and the limited area of the mountain valleys have caused a relatively slow development of the water resources even though this region of the watershed is the sources of the bulk of the water crop.

Contrary to the adverse situation in the other two provinces of the Colorado basin, the desert plains and valleys along the lower reaches of the river provided excellent conditions for

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[792] U.S. Bureau of Reclamation, The Columbia River—A Comprehensive Departmental Report on the Development of Water Resources of the Columbia River Basin for Review Prior to Submission to the Congress (Washington: Government Printing Office, 1947), pp. 16-18.

[793] U.S. Geological Survey, Colorado River and Its Utilization, Water Supply Paper 395 by E.C. La Rue (Washington: Government Printing Office, 1916), pp. 12-16. Supra, pp. 28-35.

intensive development. The high temperatures and long growing seasons permitted the cultivation of a great variety of crops nearly the year around. Only relatively small expenditures were required for diversion works to turn the river upon the land. Yet this desert area contributes practically no water to the flow of the Colorado River.

Early Development. The principal developments of the lower Colorado River basin occurred in three areas, the Palo Verde Valley, the Imperial Valley and the Yuma project.[794] The Palo Verde Valley in California was first developed for irrigation by Thomas H. Blythe sometime after his arrival in 1856. In an irrigable area of 79,000 acres, the Palo Verde Valley had 45,000 acres of its land under irrigation by 1927.

A much larger irrigation development occurred in the Salton Sea Basin area known as Imperial Valley. Since Imperial Valley is below sea level and consequently below the level of the Colorado River channel, it was possible to divert water from the main stream of the river below the Mexican border through an old course of the river known as the Alamo River, to irrigate the lands on the southern slope of the basin. Following the first diversions occurring in 1902, Imperial Valley was able to place 400,000 acres under irrigation before the construction of Hoover Dam. In addition 300,000 acres in Mexico were irrigated from the Imperial Valley diversion system as a part of an agreement between the Imperial Valley Irrigation District and the Mexican government authorizing the diversion below the international border.

The Yuma project was developed along the lower Colorado River on both the Arizona and California sides of the river near Yuma, Arizona. As the first major federal reclamation

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[794] U.S. Bureau of Reclamation, The Colorado River, A Comprehensive Report on the Development of the Water Resources of the Colorado River Basin for Irrigation, Power Production and other Beneficial uses in Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming (Washington: Government Printing Office, 1946), p. 56. E.B. Debler, "Memorandum on Water Rights on Low Colorado River, "in Ray Lyman Wilbur and Northcutt Ely, The Hoover Dam Documents, House Document No. 717, 80th Cong., 2d sess. (Washington: Government Printing Office, 1948). Pp. 5-7.

project developed after the passage of the Reclamation Act of 1902, the Yuma project involved a total area of 69,000 irrigable acres, of which 50,000 acres were located in Arizona. The Salt River project in the Gila River basin was also developed as one of the early reclamation projects in the lower Colorado River watershed.[795]

In the upper basin a number of smaller irrigation ventures were developed by early Mormon settlers in Utah and southwestern Wyoming and by settlers in the early mining communities who gradually turned their attentions to agriculture in western Colorado. Except for the Grand Valley Canal, none of the upper basin projects involved any extensive area of development until the Bureau of Reclamation undertook the Strawberry Valley project in Utah and the Uncompahgre and Grand Valley projects in Colorado.[796] These latter projects were subsequent in time of development to the Palo Verde and Imperial Valley projects in the lower basin.

Demands for the Control of the Colorado

Floods, Drought and Silt. Almost from the beginning of the major water works developments in the lower basin, the vagaries of the untamed Colorado threatened the existence of those seeking sustenance from its water. In 1905, when the Imperial Valley development was firmly established, the Colorado River shifted its channel, pouring the full flow of the stream into the Alamo River or Imperial canal and flowing into the Salton Sea. For sixteen months, the Colorado poured its entire flow into the Imperial Valley, securing a deep channel, destroying homes and farms, inundating approximately 30,000 acres of arable lands, submerging many miles of railroad tracks and enlarging the Salton Sea to a depth of seventy-six feet and an area of

[795] Wilbur and Ely, op. cit., pp. 139-142.
[796] U.S. Bureau of Reclamation, op. cit., p. 56.

488 square miles, before the break was finally closed in February, 1907.[797] The river might have continued to flow into the basin until the entire basin area including Imperial Valley became submerged. While this threat was averted by turning the river back into its channel leading to the Gulf of California, the threat of a new break remained as long as the flood waters of the Colorado were uncontrolled.

To prevent further flood damage, an extensive system of levees was established along the lower river principally to protect the delta lands lying below the level of the river channel and the farming communities in the Blythe and Yuma areas. While this program involved an expenditure of many millions of dollars the levees were ineffective. The silt deposited in the river bed required the constant raising of the height of the levees, which merely enhanced the potential flood dangers.[798] Serious flood threats to the levee system occurred in 1914, 1918, 1919 and 1925.[799] The floods could be eliminated only by controlling the quantity of the stream discharge.

Although the floods of the spring and early summer present difficult problems to the water users on the lower Colorado, the inadequacy of the flow during the late summer in dry years was equally serious. In 1924, the minimum flow of the river dropped to 1,200 cubic feet per second during a time when the annual diversions into the Alamo River for the irrigation of Mexican and Imperial Valley lands was approaching 3,000,000 acre-feet of water or nearly three times the minimum flows.[800] The period of minimum flow usually represented the period of peak demands for irrigators.

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[797] Wilbur and Ely, op. cit., pp. 3-4.
[798] U.S. Bureau of Reclamation, op. cit., p. 50.
[799] Wilbur and Ely, op. cit., p. 4.
[800] U.S. Bureau of Reclamation, op. cit., p. 58.

After 1915, the Imperial irrigation district diverted the full flow of the Colorado River during the period of low flow by a temporary sand and brush weir.[801] Obviously the only solution to the problem of water shortage in the late summer months was to store the spring floods in upstream reserve for release to meet later demands of irrigation.

Another source creating demands for the control of the Colorado was the silt problem.[802] In addition to aggravating the flood problem, the heavy load of silt carried by the river choked the irrigation ditches and impaired the efficiency of various water works. The Imperial irrigation district was spending nearly $500,000 annually to remove silt from its canal system during the 1920's. Farmers were spending in addition an estimated $1,000,000 to repair damages caused by the silt on individual farms.[803]

Each of these circumstances combined to accentuate the demand for up-stream storage facilities to control the seasonal variations in the river flow and to permit the river to deposit its silt load before flowing onto the lower rive plains. As a result of persistent pressure from Imperial Valley, the United States Congress in May, 1920 adopted the Kincaid Act directing the Secretary of Interior to make an investigation of Imperial Valley and to report on its condition and the possible expansion of irrigation developments.[804]

The Problem of Water Rights. The water problems of the lower Colorado River presented serious implications to the upper Colorado River basin. The fact that the diversion for beneficial use into Imperial Valley equaled or exceeded the flow of the river meant that Imperial Valley irrigators might institute legal proceedings to prevent subsequent upstream appropriators from diverting a flow which would adversely affect the interests of their established

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[801] Debler, op. cit., p. 7.
[802] U.S. Bureau of Reclamation, op. cit., p. 163.
[803] Ibid., p. 58.
[804] "The Kincaid Act" in Wilbur and Ely, Op. cit., appendix 102, pp. A7-8. For a general description of legislative proposals preliminary to the Colorado River Compact see Wilbur and Ely, op. cit., pp. 13-16.

appropriations. While the water resources of the Colorado could be expanded by the development of storage reservoirs, the upper basin states were fearful that any such development would merely permit the lower basin to develop further depriving the upper basin of valuable water rights which they would require a longer time to perfect. The lower basin reservoirs and related power developments might constitute in themselves beneficial use adverse to the interests of the upper basin states.

Since the law of water rights was almost exclusively a problem developed by each individual state, there was little precedent or consideration of what policies might be pursed to permit the systematic development of both the upper and lower basins of the Colorado River as an interstate stream.

In Kansas v. Colorado, the first case to involve litigation between two states claiming the waters of an interstate stream, the United States Supreme Court held that the powers of the state governments to deal with water were limited only by the superior power of the federal government to provide for the regulation and control of navigable streams as specifically provided in the enumerated powers in the United States Constitution.[805] On the question of the application of riparian or appropriative water right to an interstate stream, the court held:

> It (the state) may determine for itself whether the common law rule in respect to riparian rights or that doctrine which obtains in the arid regions of the West of the appropriation of waters for the purposes of irrigation shall control. Congress cannot enforce either rule upon any State.[806]

Although the action was dismissed until Kansas could demonstrate a material increase in the depletion of the Arkansas River by Colorado water users, the United States Supreme Court recognized the application of the following principle as the means of settling a dispute between a state following the riparian doctrine and another using the law of prior appropriation:

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[805] 206 U.S. 46, 86 (1906).
[806] Ibid., p. 96.

> As Kansas thus recognizes the right of appropriating the waters of a stream for the purposes of irrigation, subject to the condition of an equitable division between the riparian proprietors, she cannot complain if the same rule is administered between herself and a sister State. And this is especially true when the waters are except fro domestic purposes, practically useful only for purposes of irrigation.[807]

During the period of preliminary negotiations among the states of the Colorado River watershed another law suit between Wyoming and Colorado was pending in the United States Supreme Court to determine the relative rights of appropriators in each of the two states to waters of the Laramie River. Since both states adhered to the principle of prior appropriation the court held:

> The cardinal rule of the doctrine is that priority of appropriation gives superiority of right. Each of these States applies and enforces this rule in her own territory, and it is the one to which intending appropriators naturally would turn for guidance. The principle on which it proceeds is not less applicable to interstate streams and controversies than to others.[808]

The precedent of these two cases provided little comfort to the upper basin states seeking to reserve certain portions of the Colorado River water for their future development without the threat of adverse competition from the lower basin states. The application of the principle of prior appropriation between states meant unrestricted competition on the basis of first come, first served. While the principle of equitable apportionment might seem to serve the purposes of the undeveloped states better, the reluctance of the court to adjudicate the water rights of a stream according to this principle, until "material depletion" could be demonstrated as the basis for substantial injury, offered little opportunity for settlement by adjudication.

The Colorado River Compact

The League of the Southwest. In this complex situation an organization, known as the League of the Southwest, became the center of negotiations and deliberations to seek a solution to the problem of the Colorado River development. Organized at San Diego, California, in 1917,

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[807] Ibid., p. 104.
[808] Wyoming v. Colorado, 259 U.S. 419, 470 (1921).

the League of the Southwest claimed to represent 3,000 different civic organizations in the eight states of Arizona, California, Colorado, Nevada, New Mexico, Oklahoma, Texas and Utah with the objective,

> … to foster closer social and commercial relations, to link the Southwest in a spirit of brotherhood and to promote civic, commercial and social interests of the territory.[809]

On January 18, 1919, a meeting of the League of the Southwest was convened in Slat Lake City at the call of Governor W.J. Spry of Utah to consider the problems of Colorado River development. The governors of Arizona, California, Colorado, Nevada, New Mexico, Oklahoma, Texas and Utah were represented at this meeting. Subsequently Wyoming was substituted for Oklahoma. At a meeting in April, 1920, the League adopted a resolution favoring development of the Colorado River by the Reclamation Service and recommended immediate investigation of the Boulder Canyon reservoir site.[810]

At a meeting of the league in Denver, Colorado during August, 1920, the problems posed by the construction of large storage reservoirs n the lower canyons of the Colorado were discussed in view of the conflicting interests of the upper and lower basin states. A proposal by Delph E. Carpenter, that the treaty-making powers of the states be utilized to arrive at an interstates compact to govern the allocation of water on the Colorado River was considered and adopted in the form of a resolution which provided:

> That it is the same sense of this Congress that the present and future rights of the several States whose territory is in whole or in part included within the drainage area of the Colorado River, and the right of the United States, to the use and the benefit of the waters of said stream and its tributaries, should be settled and determined by compact or agreement between said States and the United States, with the consent of Congress, and that the legislatures of said States be requested to authorize the appointment of a commissioner for each of said States for the purpose of entering into such compact or

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[809] Los Angeles Express, November 25, 1921.
[810] Wilbur and Ely, op. cit., pp. 17-20. See also Reuel L. Olson, The Colorado River Compact (Los Angeles: author, 1926, 527 pp. U.S. National Resources Committee, Regional Factors in National Planning and Development (Washington: Government Printing Office, 1935), pp. 53-70.

> agreement for subsequent ratification and approval by the legislature of each of said States and the Congress of the United States.[811]

Compact Negotiations. During the 1921 sessions of their legislatures, each of the seven Colorado River basin states enacted legislation authorizing the appointment of commissioners and the negotiation of a compact for the allocation of the water of the Colorado River. On May 19, 1921, the governors of the seven states met at Denver and adopted a resolution directing Governor Campbell of Arizona to present their request to Congress for the enactment of legislation to authorize the negotiations of a compact and the appointment of a federal commissioner. The necessary federal legislation was enacted in August, 1921 and in December, 1921, President Harding appointed Herbert C. Hoover as the federal representative on the Colorado River Commission.

The Colorado River Commission met at Washington, D.C. in January 1922 to organize its work. In addition to the federal representative Herbert C. Hoover, who was elected permanent chairman, the commission was composed of W.B. Norviel, Arizona; W.F. McClure, California, Delph E. Carpenter, Colorado; J.H. Serugham, Nevada; Stephen B. Davis, Jr., New Mexico; R.E. Caldwell, Utah; and Frank C. Emerson, Wyoming.

Following the preliminary executive sessions of the commission, the Fall-Davis report was submitted to Congress on the problems of the control and development of the lower Colorado River. At a series of public hearings held by the commission during March and April, 1922, the Fall Davis report served as the point of departure for the "…full expression of views which had become rather characteristic of Colorado River meetings."[812]

During the public hearings and business meetings, it had become apparent that an attempt to allocate water to each of the several basin states would be a difficult if not impossible task. To

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[811] Ibid., p. 18.
[812] Ibid., p. 21.

break the deadlock which appeared imminent, Commissioner Hoover proposed that the vital issue concerning the legal rights between the upper and lower basin states be resolved by a division of water between the upper basin and the lower basin and tat the states within each basin determine their share by separate compacts. On this basis the Colorado River Compact was adopted by the Colorado River Commission on November 24, 1922 at Santa Fe, New Mexico.[813]

The Colorado River Compact. According to the Colorado River Compact, five major objectives were established: 1) to provide for the equitable division and apportionment of the use of the water of the Colorado River; 2) to establish the relative importance of different beneficial uses of water; 3) to promote interstate comity; 4) to remove causes of present and future controversies and 5) to secure the expeditious agricultural and industrial development of the Colorado River basin through the control and development of its water resources.[814]

The first major purpose of the Colorado River Compact to apportion the water of the Colorado River is accomplished by article III which provides for an equal allocation of 7,500,000 acre-feet of water per annum to each the upper and lower basin. In addition to this allocation, this controversial III b section provides:

> In addition to the apportionment in paragraph (a), the Lowe Basin is hereby given the rights to increase its beneficial consumptive use of such waters by one million acre-feet per annum.[815]

To compensate for the annual variations in the flow of the Colorado River, the upper basin states were permitted annual variations in the discharge at Lee Ferry, the dividing point between the two basins, provided the stream may not be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years.

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[813] Ibid., pp. 22-23.
[814] "The Colorado River Compact," in Wilbur and Ely, op. cit., Appendix 203, p. A18.
[815] Ibid., p. A19.

A special reservation is made for any right to use of Colorado River water established by Mexico. This claim had first priority to surplus water and if the surplus water were insufficient, the burden would be borne equally by the two basins. Further apportionment of surplus waters is provided for after October 1, 1963, if and when either basin had reached its total beneficial consumptive use of the established allocations.

The second objective of the Colorado River Compact was realized by making navigation subservient to other uses for domestic, agricultural and power purposes, "inasmuch as the Colorado River has ceased to be navigable for commerce.…"[816] The use of water for domestic and agricultural purposes was made superior to power generation but equal to each other. The term "domestic use" was defined to include the use of water for municipal, industrial and commercial purposes.

To promote interstate comity and to remove the causes of present and future controversies, the Colorado River Compact provided for the cooperation of the chief official of each signatory states charged with the administration of water rights, the director of the United States Reclamation Service, and the director of the United States Geological Survey to perform the following functions in ex-officio capacity:

a) To promote the systematic determination and coordination of the facts as to flow, appropriation, consumption, and use of water in the Colorado River Basin, and the interchange of available information in such matters
b) To secure the ascertainment and publication of the annual flow of the Colorado River at Lee Ferry
c) To perform such other duties as may be assigned by mutual consent of the signatories from time to time.[817]

In case of a controversy arising between two or more of the signatory states on questions relating to rights under the compact or prospective development of the Colorado River

[816] Ibid., p. A20.
[817] Loc. cit.

> … the Governors of the States affected, upon the request of one of them, shall forthwith appoint Commissioners with power to consider and adjust such claim or controversy, subject to ratification by the Legislature of the States so affected.[818]

The accomplishment of the final objective of the compact to secure the expeditions agricultural and industrial development of the Colorado River basin through the development of the water resources of the Colorado River is not specifically provided for except that the general agreement reached in the compact formed the basin upon which future sections by the Congress and the administrative agencies of the federal government could be taken to realize the control and development of the Colorado River.

During the 1923 sessions of the various basin states legislatures, the Colorado River Compact was unconditionally approved by all of the states except Arizona. The lower house of the Arizona legislature failed to pass a resolution calling for unconditional ratification by a tie vote of twenty-two to twenty-two after the Arizona Senate had refused to concur in certain reservations requiring the payment of five dollars per house power to Arizona for use of Colorado River water for hydro-electric generation purposes, limited Mexico to 2,000,000 acre-feet per year and excluding the Gila River system from the provisions of the Colorado River Compact.[819]

The Struggle for the Development of the Colorado River

While progress was being made in the negotiations of the Colorado River Compact as a means of amicably settling the differences between the upper basin stats and the lower basin states over the future apportionment of the water of the Colorado River, the political pressures of the lower basin for positive measures seeking to control the flow of the river was manifesting

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[818] Ibid., p. A21.
[819] Wilbur and Ely, op. cit., p. 35.

itself in an increasingly definite program of action. The failure of Arizona to ratify the compact did not alter the demands for the control and development of the water resources of the river.

Plans for Action. Immediately after the passage of the Kincaid Act in January, 1920, the Bureau of Reclamation began an intensive series of investigations of the lower Colorado. Going beyond the immediate confines of Imperial Valley, the investigators turned their attention to the development of adequate storage reservoirs in the lower canyons of the Colorado River. Early in 1921 detailed surveys were made of Boulder and black canyons to select an adequate dam site to permit the creation of a capacious reservoir to provide for the control of the river.[820]

Homer Hamlin, a city engineer for the City of Los Angeles, had first conceived the possibility of a multiple purpose damn in the Boulder and Black canyon area to be financed by the sale of hydro-electric power. When Hamlin was commissioned to assist in the investigation of the feasibility of the Boulder Canyon reservoir he informed the administrative officials of the Department of Public Service of the great power potentials that awaited development. E. F. Scattergood, William Mulholland and H.A. Van Norman accompanied Hamlin on his survey of Boulder and Black canyons in 1921.[821]

The plan to finance the Boulder Canyon project by encouraging the participation of other units of government to underwrite the cost of the dam in exchange for power privileges was apparently formulated by Arthur P. Davis of the Reclamation Service from suggestions made by William Mulholland and E.F. Scattergood.[822] Mulholland had proposed that the benefiting

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[820] Ibid., pp. 8-12.
[821] U.S. Congress, House of Representatives, Committee on Irrigation and Reclamation, Hearings on H.R. 2903, A Bill to Provide for the Protection and Development of the Lower Colorado River Basin, 68th Cong., 1st sess. (Washington: Government Printing Office, 1924), p. 136.
[822] Los Angeles Herald-Express. July 11, 1940.

communities contribute pro rata to the cost of the construction of a dam in Boulder Canyon by the Reclamation Service.[823]

When the Fall-Davis report on The Problem of Imperial Valley and Vicinity was formally submitted to Congress, it included the following recommendations.

3. It is recommended that through suitable legislation the United States undertake the construction with Government funds of a reservoir at or near Boulder Canyon on the lower Colorado River to be reimbursed by the revenues from leasing the power privileges incident thereto.
4. It is recommended that any State interested in this development shall have the right at its election to contribute an equitable part of the cost of the construction an equitable part of the cost of the construction of the reservoir and receive for its contribution a proportionate share of power at cost to be determined by the Secretary of Interior.
5. It is recommended that the Secretary of the Interior be empowered after full hearing of all concerned to allot the various applicants their due proportion of the power privileges and to allocate the cost and benefits of a high-line canal.[824]

Public v. Private Power. While the power potentials of a Boulder Canyon dam site provided the means to finance a project for the multiple purpose control of the Colorado River, the contest over this power potential seemed at times to dwarf the other aspects of river control and development. The conflict broke into an open struggle between those favoring private development as opposed to development by public agencies even before the Fall-Davis report has been submitted to Congress.

As soon as the feasibility of a multiple purpose project including the generation of hydro-electric power was established by preliminary surveys, the struggle between the private utilities and the Los Angeles Bureau of Power and Light turned to the Colorado River and the Boulder Canyon project. Early in June, 1921, the Southern California Edison Company Applied to the Arizona Water Commission for a permit to undertake the first phase of an $800,000,000 plan of development of the Colorado River including the construction of a 500 foot dam at Glenn

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[823] Los Angeles Examiner, June 30, 1921.
[824] "Extracts from the Fall-Davis Report," Wilbur and Ely, op. cit., Appendix 103, p. A9.

Canyon.[825] In July, the City of Los Angeles and the Board of Public Service Commissioners filed a similar application for the construction of a dam in Boulder Canyon and permission to use water stored there for power purposes.[826]

The first open contest between the contending power groups occurred at the meeting of the League of the Southwest at Riverside, California on December 8-10, 1921. The deliberations of the three-day meeting were so preoccupied with the contentions of private electric utility and municipal ownership groups who descended upon the meeting to present their positions that the representatives of the six states, other than California, issued a statement expressed the view that the meeting had degenerated into a fight between the interests of Southern California on the question of Boulder Canyon dam.[827] The League of the Southwest, which had contributed greatly to the formation of the Colorado River Compact, was not able to withstand the onslaught of the contending power groups. After the Riverside meeting, the league failed to meet again thus ending a brief and interesting chapter in an attempt to build a regional approach to the development of the resources of the Southwest.

Following this preliminary skirmish, the struggle for the development of the Boulder Canyon project began to develop in all of its ramifications. This first Swing-Johnson bill to authorize the construction of the All-American Canal into Imperial Valley and a dam at or near Boulder Canyon was introduced into Congress on April 25, 1922.[828] John W. Kemp of the Los Angeles Public Power League and Mayor John L. Bacon of San Diego as the chairman of the southern section of the League of California Municipalities organized the first campaign seeking

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[825] Los Angeles, Examiner, June 3, 1921.
[826] Ibid., July 20, 1921.
[827] Los Angeles Times, December 11, 1921.
[828] Wilbur and Ely, op. cit., p. 38.

to delay the granting of a permit by the Federal Power commission to the Southern California Edison Company to build a hydro-electric plant on the Colorado River.[829]

In 1923, while the various Colorado Basin states were considering the ratification of the Colorado River Compact, the foundations were being established for a prolonged struggle over the Swing-Johnson bill. The Los Angeles Department of Public Service rebuke attempts of the Edison Company to arrange a compromise for joint development of the power potentials of the lower Colorado River. The opponents of public power directed their support to a proposal for a low dam at Boulder Canyon which would be adequate for flood protection for Imperial Valley but inadequate for power generation purposes.[830]

To marshall the political support of Southern California for the Swing-Johnson bill, a Boulder Dam Association was organized on May 10, 1923 at a meeting called by Mayo John L. Bacon of San Diego acting through the southern section of the League of California Municipalities.[831] Composed entirely of public corporations and civic organizations, the Boulder Dam Association maintained a permanent headquarter staff and special representation in Washington, D.C.

Mayor S.C. Evans of Riverside, California served as the executive director of the association with Burdett, Moody business agent of the Los Angeles Department of Public Service, devoting his principal efforts to the campaign as the secretary-treasurer of the Boulder Dam Association. The finances of the Boulder Dam Association came from the contribution of individual members. The most substantial support from any single member of the association came from the Los Angeles Department of Water and Power.

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[829] Los Angeles Herald, March 23, 1922.
[830] Supra, pp. 141-44.
[831] Brief History of Boulder Dam Association (unsigned MS) in Boulder Dam Association File No. 40.

With the decision of the Los Angeles Department of Public Service to go to the Colorado River as the source of domestic water supply for Los Angeles and other cities on the Southern California coastal plain, still another factor was introduced into the campaign for the Boulder Canyon project. The significance of water supply upon the campaign for the passage of the Swing-Johnson bill was described by William Mulholland:

> I think it is impossible to exaggerate the effect of the domestic water supply idea on the Boulder Dam campaign. The power argument appealed to many individuals and interests, but not to all, by any means. But when they came to know the facts, when they saw that the project of the population curve into the not very distant future was going to take the city up to the point where the water supply could not take care of any more people, then they all-or practically al-save the light.[832]

The Six-State Compact. With the mounting pressure for the development of the lower Colorado River, the problem of protecting the interests of the upper basin states became more pressing with the continued refusal of Arizona to ratify the Colorado River Compact.

Sometime before 1925, Delph E. Carpenter of Colorado conceived of the plan of ratifying the Colorado Compact as a six-state agreement.[833] If California agreed to the six state compact proposal, the compact would be reinforced by the principle of equitable apportionment enunciated in Kansas v. Colorado since California adhered to the riparian doctrine in contrast to the other basin states. The existence of a federal power reserve along the entire route of the Colorado River canyon in Arizona would tend to restrict any adverse action that the state of Arizona might take to impede the development of the river.

According to this plan Colorado, Nevada, New Mexico, Utah and Wyoming approved the compact as a six-state agreement specifically waiving the requirement of seven-state adherence as provided for in article XI of the Colorado River Compact. However, California passed a

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[832] Los Angeles Examiner, May 29, 1930.
[833] Wilbur and Ely, op. cit., p. 36.

substitute resolution, known as the Finney resolution, which declared that California's ratification would not become effective until,

> The Congress of the United States has duly authorized and directed the construction by the United States of a dam in the main stream of the Colorado river, at or below Boulder canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water.[834]

Subsequently, Utah repealed its resolution ratifying the six-state compact.

Late in 1925, the third Swing-Johnson bill was introduced into Congress specifically authorizing a reservoir with a capacity of more than 20,000,000 acre-feet and an appropriation of $125,000,000. While this bill was favorably reported out of the committees of both houses of Congress, it is prevented from coming to a vote by a filibuster led by Arizona representatives.[835]

The mounting pressure for the Swing-Johnson bill, by the increasingly unified interests of southern California was reinforced by national interests awakening to the importance of the development of the river resources in the west. A long national campaign for the Boulder Canyon project in the Hearst newspapers organized campaigns conducted through national organizations, such as the American legion, and Los Angeles' numerous state societies served to broaden the scope of the appeal.[836] Finally in December, 1928 both houses of Congress enacted the Swing-Johnson bill which was approved by President Coolidge on December 21, 1928 to become known as the Boulder Canyon Project Act.

The Boulder Canyon Project Act. The major features of the Boulder Canyon Project Act included 1) an authorization and appreciation for the construction of a dam in Boulder or Black

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[834] California, "Assembly Joint Resolution No. 15—Relating to the Colorado River Compact between the states of California, Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming," in Wilbur and Ely, op. cit., Appendix 221, pp. 147-48.
[835] Congressional Record, 69th Cong, 2d sess., pp. 4396-4453, 4495-4463.
[836] Boulder Dam Association Files, passim.

canyons, 2) an authorization and appropriation for the construction of the All-American Canal and related works, and 3) the ratification of the Colorado River Compact.[837]

Both the act itself and the appropriations authorized by the act depended upon the fulfillment of certain conditions before they could become effective. The act required that either the seven states of the Colorado River basin must ratify the Colorado River Compact or if the seven states failed to ratify in six months., then six states including California must ratify the compact as a six-state agreement provided that:

> … the State of California by act of its legislature, shall agree irrevocably and unconditionally with the United States and for the benefit of the Stats of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming, as an express covenant and in the consideration of the passage of this Act, that the aggregate annual consumptive use (diversion less returns to the river) of water of and from the Colorado River for use in the state of California, including all uses under contracts made under the provisions of this Act and all water necessary for the supply of any rights which may not exist, shall not exceed four million four hundred thousand acre feed of waters apportioned to the lower basin States by paragraph (A) of Article III of the Colorado River Compact, plus not more than one-half of any excess or surplus waters unapportioned by said Compact, such uses always to be subject to the terms of said Compact.[838]

After making a seven or six-state compact a condition to its operation, the Boulder Canyon Project Act makes the Colorado River Compact controlling in regard to the rights and interests of the United States or those claiming under the United States. All patents, grants, contracts, concessions, leases, permits, licenses, rights-of-way or other privileges which the United States may authorize for the use of waters of the Colorado River and its tributaries are likewise qualified by the conditions of the Compact.

Before the appropriations authorized by the act could be used for the construction of the dam, power plants or any other related work, the secretary of Interior was required to make provision by contract for revenues adequate to repay all expenses of operation and maintenance

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[837] "Boulder Canyon Project Act," in Wilbur and Ely, op. cit., Appendix 401, pp. A213-25.
[838] Ibid., Section 4(a), pp. A215-16.

and the repayment of the federal investment with interest within fifty years from the date of completion of the works. Similar contracts were required as a condition for the appropriation to provide for the construction of the All-American Canal.

In addition to the general provisions of the act relating to the Boulder Canyon dam, the All-American Canal and the Colorado River Compact, the Act authorizes the Secretary of Interior to investigate and report on the feasibility of other projects and to formulate a "…comprehensive scheme of control and the improvements and utilization of the water of the Colorado River and its tributaries."[839] To permit participation of the states in the comprehensive planning and development of the Colorado, the Boulder Canyon Project Act provided:

> In the furtherance of any comprehensive plan formulated hereafter for the control, improvement, and utilization of the resources of the Colorado River system and to the end that the project authorized by this act may constitute and be administered as a unit in much control; improvement, and utilization, any commission or commissioner duly authorized under the laws of any ratifying State in that behalf shall have the right to act in an advisory capacity to aid in the cooperation with the Secretary of Interior in the exercise of any authority under the provisions of sections 4, 5, and 14 of this Act, and shall have at all times access to records of all Federal agencies empowered to act under said sections, and shall be entitled to have copies of said records on request.[840]

Congress also gave its consent for the Colorado River basin states to negotiate and enter into compacts and agreements for a comprehensive plan of development on the Colorado River consistent with the provisions of the Colorado River Compact and the Boulder Canyon Project Act, and for the purpose of constructing and operating the necessary works, the states might authorize by compact, "… the creation of interstate commissions and/or the creation of corporations, authorities, or other instrumentalities."[841]

During the 1929 sessions of their state legislatures both California and Utah unconditionally ratified the six-state agreement. The solicitor of the Department of Interior held

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[839] Ibid., p. A224.
[840] Loc. cit.
[841] Ibid., p. A225.

that Colorado, Nevada, New Mexico and Wyoming need not re-enact ratification of the six-state Compact. To meet the conditions imposed by Congress, California enacted the limitation act which provided:

> … in the consideration of the passage of the said "Boulder Canyon project act" that the aggregate annual consumptive use (diversions loess returns to the river) of water of and from Colorado River for use in the State of California including all uses under contracts made under the provisions of said "Boulder canyon project act," and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin states by paragraph "a" of article three of the said Colorado river compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact.[842]

Operation of the Boulder Canyon Project

Power Contracts. Once the conditions for the declaration of the effectiveness of the Boulder Canyon Project Act had been met, it was necessary for the Secretary of Interior to negotiate water and power contracts to serve as the financial base for the construction and operations of the various works authorized by Congress. Congress authorized the creation of Colorado River Dam fund with $165,000,000 available when provisions had been made for its repayment. The power revenue features of the Hoover Dam were distinct from the irrigation revenue feathers of the All-American Canal system. The entire investment in Hoover Dam and appurtenant works was made reimbursable over a fifty-year period. $25,000,000 was allocated to flood control to be repaid from 62.5 per cent of the surplus revenues during the amortization period. Payments of 18.75 per cent of the surplus revenues to each of the states of Arizona and Nevada constituted a provision in lieu of taxes.[843]

According to there general requirements of the law, the Secretary of Interior, after prolonged negotiations and hearings, entered into contracts with the City of Los Angeles through

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[842] "The California 'Limitation Act'," in Wilbur and Ely, op. cit., pp. A231-32.
[843] Wilbur and Ely, op. cit., pp. 45-57.

its Department of Water and Power and the Southern California Edison Company to separately lease the power generating facilities with the obligation to generate electricity at cost for the other allottees, of which the Metropolitan Water District of Southern California was the major one. Contracts were also executed with the Los Angeles Gas and Electric Corporation, the Southern Sierra Power Company, the cities of Pasadena, Burbank and Glendale. The California contractors were obligated to take 100 per cent of the firm energy, with the reservation that thirty-six per cent of the power must be available for the future demands of the states of Arizona and Nevada.[844] Similar contracts were later executed with these two states.

Having met the conditions necessary for the appropriation of funds, the first installment of funds for the construction of Hoover Dam was approved by the United Stats Congress over Arizona's opposition on July 3, 1930. Preliminary work on the Boulder Canyon project was immediately undertaken under the supervision of the Bureau of Reclamation. A contract was awarded for the construction of the Hoover Dam on April 20, 1931 and the dam and power plant were completed and turned over to the Secretary of Interior on March 1, 1926. The first power generated by Colorado River at Hoover Dam was transmitted to Los Angeles on October 10, 1936.

In 1937, the power allottees requested a review of the power rates provided by the 1930 contracts because of the indefiniteness of some of the provisions of the original act and altered economic and political conditions. Improvements in the generation of power by steam had reduced the competitive value of Hoover Dam energy. In other projects the United States government had advanced funds at lower rates of interest and exempted certain expenditures allotted to flood control, recreation, wild life and other miscellaneous uses as nonreimburseable expenditures.

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[844] Ibid., pp. 68-69.

After two years of negotiations to resolve the different interests of each of the Colorado River basin states an agreement was reached which was approved by Congress in the Boulder Canyon Project Adjustment Act.[845] Under the provision of this act, the amortization period was definitely established as June 1, 1937. Interest rates were reduced from four to three pre cent and the $25,000,000 allocated to flood control was deferred until after May 31, 1987 without interest charges. Instead of a fixed percentage or surplus revenue, a payment of $300,000 each to the states of Nevada and Arizona in lieu of taxes was provided. In addition a separate Colorado River development fund was established to which $500,000 would be transferred annually from the Colorado River fund. The operating leaseholder contracts held by the City of Los Angeles and the Southern California Edison Company were converted to agency operating contracts.

Water Contracts. The operation and consequently the performance of two of the primary contracting agencies, the Metropolitan Water District of Southern California and the Imperial Irrigation District, was dependent upon the assurance of a supply of water with adequate storage and delivery contracts. The solution of the water-contract problem of these two agencies was an essential requisite to the revenue requirements of both Hoover Dam and the All-American Canal.

With the failure of renewed attempts to secure an allocation of water between the lower basin states, the Secretary of Interior found it necessary to negotiate water contracts using the suggested pattern of water allocations provided in Section 4 (a) of the Boulder Canyon Project Act. By the application of the formula of Section 4 (a) of the Boulder Canyon Act to the 7,5000,000 acre-feet allocated to the lower basin by Article III (a) of the Colorado River Compact, the allocation to each state would be California, 4,400,000 acre-feet, Arizona, 2,800,000 acre-feet and Nevada, 300,000 acre-feet per annum. On the assumption that 10,500,000 acre-feet of water would be available annually at Hoover Dam, the one-million acre-

[845] "Boulder Canyon Project Adjustment Act," in Wilbur and Ely, op. cit., Appendix 801, pp. 801, pp. A265-272.

feet permitted for the use of the lower basin and the surplus waters were assumed to be available equally to Arizona and California since Nevada had never claimed more than 300,000 acre-feet per annum.[846]

On the basis of these assumptions, a preliminary agreement was entered into on February 21, 1930 which was later modified to contract for the storage and delivery of water from Hoover Dam on the basis of the following priorities.[847]

TABLE VIII

CALIFORNIA WATER PRIORITIES

Priority No.	**Agency and description**	**Annual quantity in acre-feet**
1.	Palo Verdi irrigation district	3,850,000
2.	Yuma project (California division)	
3.	(a) Imperial irrigation district (b) Palo Verde irrigation district	
4.	Metropolitan Water District	550,000
5.	(a) Metropolitan Water District (b) City and/or county San Diego	550,000 112,000
6.	(a) Imperial irrigation district (b) Palo Verde irrigation district	300,000
	Total	5,362,000

Administrative Organization and Operation. Beyond the complex of the Compact and formal contracts which in themselves have been interesting experiments in federal relations the pattern of administrative organization and operation in the Colorado River basin form a striking combination of efforts by federal, state and local governments.

The primary operating responsibility for the Colorado River works including the Boulder Canyon Project has been placed with the Bureau of Reclamation. Most of the preliminary

[846] Wilbur and Ely, op. cit., pp. 106-110.
[847] Ibid., p. 108.

surveys, the design of Hoover Dam and the related works, the supervision of the construction of private contractors, the installation of electrical generating equipment and subsequent management and operations of the Boulder Canyon project have been performed by the Bureau of Reclamation. Several other federal agencies such as the United State Geological Survey, the National Park Service, the Forest Service, the Bureau of Land Management, the Office of Indian Affairs and the Fish and Wildlife Service, and the Federal power Commission, are directly or indirectly involved in some phase of water resource in the Colorado River basin but do not exercise direct operating responsibility for the major water works on the river or its tributaries. [848]

A special administrative arrangement has been created for the operation of the electrical generating facilities at Hoover Dam. An official of the Bureau of Reclamation known as the director of power has general charge and supervision of the power operations but the actual responsibility for operation of the generating plant in Hoover Dam is placed in the Department of Water and Power of the City of Los Angeles and the Southern California Edison Company.[849] These two organizations acting independently of each other serve as the agents of the federal government in their operations at Hoover Dam. The Operating Division of the Department of Water and Power's Power System generates power for all of the public agencies including Los Angeles, Burbank, Glendale, Pasadena, the Metropolitan Water District of Southern California and for the states of Arizona and Nevada. The southern California Edison Company operates the power generators allocated for the several private electrical utilities which purchase hydro-electric power from Hoover Dam.

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[848] U.S. Bureau of Reclamation, op. cit., p. 221-275.
[849] "Federal Reclamation Bureau Directs Boulder Operations," Intake, XXII (July, 1945), p. 14.

The Los Angeles Department of Water and power maintains an areal division in the charge of a division superintendent at Boulder City, Nevada to direct its responsibilities as an operating agent of the federal government. Nearly 125 men are permanently employed by the City of Los Angeles to carry on its operational responsibilities at Boulder City.[850]

In addition to providing their own special system of power generation, the power allottees of the federal government at Hoover Dam have assumed full responsibility and control of the construction and operation of the power transmission facilities to transport the electrical energy to the power consuming areas. The Power System of the Los Angels Department of water and Power constructed and operates its own power transmission system to transmit power for its own local markets and for the neighboring municipalities of Burbank, Glendale and Pasadena. The metropolitan Water District of Southern California maintains its own transmission lines to serve the needs of its pumping plants. The privately owned power utilities maintain a separate transmission system.

Substantially the same relationship exists between the Bureau of Reclamation as the principal federal agency of water administration on the Colorado River and the Metropolitan Water District of Southern California in the area of municipal water supply. The Colorado River Aqueduct was constructed and is operated by the Metropolitan Water District to transmit the Colorado River water to its member cities on the coastal plain for distribution to their consumers. However, Parker Dam was constructed by the Bureau of Reclamation under contract with funds supplied by the Metropolitan Water District. The Bureau of Reclamation continues as the responsible operating agency at Parker Dam with contractual provisions regulating the

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[850] Loc. cit.

relationship of the dam operations to the requirement of the Aqueduct intake operations and the allocation of power generated in the power plant at Parker Dam.[851]

Following the request by the power allottees for an adjustment of the rate structure of power generated at Hoover Dam, a special ad hoc agency variously known as the Committee of Fourteen and the Committee of Sixteen was created to represent the interests of the Colorado River basin states in the negotiations as they might affect the interests of the various basin states.[852] In the Committee of Fourteen, concerned exclusively with water problems, each state was represented by two delegates. For consideration of power questions, two delegates, E.F. Scattergood of the City of Los Angeles and James M. Gaylord, of the Metropolitan Water District of Southern California were included on the committee as representatives of the power allottees.

The Committee of Sixteen successfully resolved the problem of the power rate structure and its recommendations were incorporated into law by the Boulder Canyon Project Adjustment Act passed by Congress in 1940. When presented with the controversy raised by the Mexican Water Treaty, the committee became hopelessly divided. The representatives of the upper basin states and Arizona wished the committee to take formal action approving the treaty while the representatives of California and Nevada opposed such action. When the proponents of the endorsement of the treaty insisted upon taking action by a majority vote, Nevada and California withdrew from membership on the Committee of Fourteen and Sixteen on the basis that no action should be taken by the committee except by unanimous approval of the states involved. Neither California nor Nevada has participated in negotiations with other states within the

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[851] Metropolitan Water District of Southern California, Tenth Annual Report for the Fiscal Year July 1, 1947to June 30, 1948 (Los Angeles, 1948), pp. 15-17.
[852] Wilbur and Ely, op. cit., pp. 153-55.

framework on an ad hoc negotiating committee since their withdrawals from the Committee of Fourteen in 1944.

The Mexican Water Treaty. The Colorado River, as an international stream, has presented certain problems of international water rights in addition to the complex problems of the rights of the various users within the United States. Following the construction of the Alamo Canal in 1904, a concession for the operation of the diversion works was not secured from the Mexican government until May 17, 1904, when a contract was executed between the Mexican and Sociedad de Irrigation y Terrenos de la Baja California for the delivery of 284 cubic meters of water per second to the California Development Company in Imperial Valley. As a condition for the concession the contract provided:

> From the water mentioned in the foregoing article, enough shall be sued to irrigate the lands susceptible of irrigation in Lower California with the water carried through the canal or canals, without in any case the amount of water used exceeding one-half of the volume of water passing through the canals.[853]

With this supply of water, Colorado River delta lands in Mexico were brought under irrigation until a maximum of 750,000 acre-feet of water was diverted during 1928. On the basis of this diversion an attempt was made to arrive at an agreement on Mexican water rights before the construction of Hoover Dam but no agreement was reached.[854] As a part of a general water treaty regarding the Colorado, Rio Grande and Tijuana rivers, Mexico was guaranteed the right of beneficial use of a minimum of 1,500,000 acre-feet of water annually from the Colorado River.[855]

The Arizona-California Controversy

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[853] "Contract of may 17, 1904, Between the Government of Mexico and Sociedad de Irrigacion y Terrenes de la Baja California, S.A.," in Wilbur and Ely, op. cit., Appendix 1101, p. A585.
[854] Wilbur and Ely, op. cit., pp. 152-153.
[855] Ibid., p. 156.

During the entire history of interstate negotiations, controversies have raged between the states of California and Arizona over the development of the water resources of the Colorado River. With Arizona's failure to ratify the Colorado River Compact, the whole question of the validity of a compact allocation as against the establishment of a right by beneficial use remained in doubt. Without an agreement on the basic provisions of the original compact allocating the water of the Colorado River between the upper and lower basin states, the possibilities of successfully negotiating a compact among the lower basin states was remote. In a series of at least forty conferences extending over a period of more than twenty years, the se states have been unable to resolve their differences.[856]

According to the statement of Arizona's official representatives opposition to the compact arises from several provision of the compact including 1) an objection to an apportionment between the upper and lower basins, rather than among the states as authorized by Congress; 2) a feeling that the upper basin was apportioned all that it could ever use, if not more, while the lower basin received inadequate guarantees of water rights or storage facilities; 3) the fact that the compact made no provisions to prevent the acquisition of water right by beneficial use of the conserved flood waters permitted to continue their course during the normal period of low water flow; 4) the assumption that the allocation of the upper basin states would be by normal flow while the lower basin must depend upon storage with no allowances for evaporation losses; 5) insistence that the Cila River System be excluded from the Colorado System as defined in the compact; and 6) a demand that Arizona be granted a perpetual royalty on power generated on the Colorado River since eighty per cent of the potential power drop occurred wholly within

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[856] U.S. Congress, House of Representatives, Committee on the Judiciary, Colorado River Water Rights, Hearing on H.J. Res. 236, and H.H. 4097 to Authorize the Commencement of an Action by the United States to Determine Interstate Water Rights in the Colorado River, 80th Cong., 2d sess. (Washington: Government Printing Office, 1948), p. 51.

Arizona and a greater part of the balance between Arizona and Nevada.[857] In view of these objections, Arizona preferred to meet the future by perfecting water rights through beneficial use rather than through compact allocation.

The controversy soon broadened beyond the scope of the compact when California began to mobilize its full efforts to secure the approval of the Swing-Johnson bill. Arizona provided the principal source of the most aggressive leadership in opposition to the high dam in Boulder or Black canyon. With the decision to rely upon the "beneficial use" formula, it was essentially in Arizona's interest to oppose any other competitive developments on the Colorado River.[858]

In conflict with California's program for the control of the Colorado River with the Boulder Canyon reservoir, Arizona has envisaged the possibility of diverting water through an eighty miles tunnel driven into the wall of the Colorado River chaams from a large reservoir formed by a high dam in either Bridge of Glenn canyons. With this diversion, Arizona would be able to irrigate a total acreage estimated as great as 3,000,000 acres.[859] For this purpose Arizona had filed upon the total flow of the Colorado River at Glenn, Spence and Bridge canyons. At the same time, Arizona contended:

> Arizona's program of Bridge Canyon Dam will serve power, flood control, and irrigation by gravity and gravity waters to Los Angeles <u>if Arizona sees fit to allow water diverted out of the Colorado System into another river system.</u>[860]

The question of a royalty upon power generated on the Colorado River also became a part of the controversy over the Boulder Canyon project. Various demands were made for royalties of five and six dollars for each horsepower of electrical energy generated per annum.[861]

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[857] U.S. Congress, Senate, Committee on Irrigation and Reclamation, <u>A Complete Investigation with Respect to Proposed Legislation Relating to the Protection and Development of the Colorado River Basin.</u> 69th Cong., 1st sess. (Washington: Government Printing Office, 1925), pp. 135-39, 346-52.
[858] <u>Ibid.,</u> p. 138.
[859] <u>Ibid.,</u> pp. 139, 141.
[860] <u>Ibid.,</u> p. 136. Underlining added.
[861] Ralph L. Criswell, "The Boulder Canyon Project," <u>Public Ownership,</u> XI (December, 1929), 270.

Arizona hoped to realize sufficient revenue to be able to consummate the costly central Arizona project from these royalties. Arizona's demand for royalty was exclusive of any provision for payment in lieu of taxes since the contention was based on the assumption that the potential power drops within Arizona were a resource specially taxable by Arizona.

Litigation. After Arizona had exhausted its ability to delay the passage of the Swing-Johnson bill and the bill had finally become law, the Arizona-California controversy turned to the United States Supreme Court as the new setting for the conflict. In a suit seeking to invalidate the Boulder Canyon Project Act and to permanently enjoin Ray Lyman Wilbur, Secretary of Interior and the Colorado basin states from enforcing any provision of the compact or the act, Arizona sought redress against the following allegedly wrongful acts:

> … first, the threatened invasion of the quasi-sovereignty of Arizona by Wilbur in building the dam and reservoir without first securing the approval of the State engineer as prescribed by its laws; and, second, the threatened invasion of Arizona's quasi-sovereign right to prohibit or to permit appropriation, under its own laws, of the unapproppriated water of the Colorado River flowing within the State. The latter invasion, it is alleged, will consist in the exercise, under the act and the compact of a claimed superior right to store, divert, and use such water.[862]

In reply to the first allegation, the United States Supreme Court upheld the constitutionality of the Boulder Canyon Project Act as clearly within Congress' power to improve navigation on the basis of historical evidence that the Colorado River had been navigable to Black Canyon:

> As the river in navigable and the means which the Act provides are not unrelated to the control of navigation, the creation and maintenance of such dam and reservoir are clearly within the powers conferred upon Congress. Whether the particular structure proposed are reasonably necessary, is not for this Court to determine. And the fact that purposes other than navigation will also be served could not invalidate the exercise of the authority conferred, even if those other purposes would not alone have justified an exercise of Congressional power.[863]

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[862] Arizona v. California, 283 U.S. 423, 451 (1931).
[863] Ibid., pp. 455-56.

The question raised by the allegation that the act was an invasion of Arizona's authority to control the appropriation of Colorado River water flowing within the state was dismissed for want of justifiable issue. Following closely the precedent of Kansas v. Colorado the Court held:

> When the bill was filed, the construction of the dam and reservoir had not been commenced. Years must elapse before the project is completed. If by operations at the dam any then perfected right of Arizona, or those claiming under it, should hereafter be interfered with, appropriate remedies will be available. The bill alleges, that plans have been drawn and permits granted for the taking of additional water in Arizona pursuant to its law. But Wilbur threatens no physical interference on their execution. There is no occasion for determining now Arizona's right to interstate or local waters which have not yet been, and which may never be appropriated.[864]

Arizona brought a second action in the United States Supreme Court early in 1934 seeking to perpetrate testimony for an action to be commenced at some future date against California and various other defendants arising from the Boulder Canyon Project Act. The single area of controversy over which Arizona sought to perpetuate testimony was the proper construction of Article III (b) of the Colorado River Compact. Arizona claimed the 1,000,000 acre-feet of water allowed by paragraph III (b) in excess of the allocation of 7,500,000 acre-feet of water in paragraph III (a) "…for the sole and exclusive use and benefit of the State of Arizona."[865]

While holding that it had jurisdiction to order the perpetuation of testimony, the court refused to grant leave to file the bill, because the evidence if taken would be inadmissible on various grounds including the fact that Arizona was claiming under the Boulder Canyon Project Act which neglected to include reference to the paragraph III (b) of the Colorado River Compact.

During the same year after contractual arrangements had been completed between the Metropolitan Water District of Southern California and the Secretary of Interior for the

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[864] Ibid., pp. 463-64.
[865] Arizona v. California, 292 U.S. 341, 351 (1934).

construction of Parker Dam by the Bureau of Reclamation across the Colorado River between California and Arizona, Governor B.B. Moeur of Arizona called out the Arizona National Guard and requisitioned a river ferry as the Arizona "Navy" to prevent any Californian from approaching Arizona territory.[866] Arizona contended that the dam could not lawfully be built without her consent.

The United States filed suit to perpetually enjoin Arizona from interference with the project. Since Congress has not granted statutory authorization for such a project, the court dismissed the action.[867] Congress later provided the necessary authorization to permit the construction of Parker Dam for the Metropolitan Water District.

In 1935, Arizona again turned to the Supreme Court in its conflict with California over the Colorado River, to secure an adjudication of interstate water rights under the "equitable apportionment" principle formulated in Kansas v Colorado. Dismissing the petition for leave to file suit, the Supreme Court held:

> The relief asked, and that which upon the facts alleged would alone be of benefit to Arizona, is a decree adjudicating to petitioners the "unclouded…rights to permanent use of" the water. Such a decree could not be framed without the adjudication of the superior rights asserted by the United States. The "equitable share" of Arizona in the unapporpriated water impounded above Boulder Dam could not be determined without ascertaining the rights of the Untied States to dispose of that water in aid and support of its project to control navigation, and without challenging the dispositions already agreed to by the Secretary's contracts with the California corporations, and the provisions as well of section 5 of the Boulder Canyon Project Act that no person shall be entitled to the stored water except by contract with the Secretary.[868]

Since no decree could be entered which would bind the United States in its absence as a party litigant, and without its consent, the United States is not subject to suit even by a state, the United States Supreme Court in effect withdrew from the Colorado River litigation by denying

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[866] Los Angeles Herald-Express, March 10, 1934.
[867] United States v. Arizona, 295 U.S. 174 (1935).
[868] Arizona v. California, 298 U.S. 558, 571 (1936).

the judicial process for the determination of interstate water rights unless the Untied States government is willing to consent to the adjudication of the dispute.

The Present Controversy

In 1944 the circumstances of the Arizona-California controversy were substantially altered.[869] Arizona unconditionally ratified the Colorado River Compact after a delay of more than twenty years. At the same time the Secretary of Interior entered in a contract with Arizona for the storage of 2,800,000 acre-feet of water annually from the main stream of the Colorado. Arizona abandoned its traditional opposition to the Mexican water claims and endorsed the Mexican water treaty negotiated with the United States. Funds were appropriated from the Colorado River development funds to determine the feasibility of the Central Arizona project.

The Central Arizona Project. On the basis of its claim to water rights under the provisions of the Colorado River Compact and the Boulder Canyon Project Act, Arizona has sponsored a proposal to diver 1,200,000 acre-feet of water from the Colorado River at Parker Dam to be lifted approximately 985 feet to the Granite Roof Aqueduct and transported 241 miles to the Phoenix area in central Arizona for supplemental uses including:

> 1) to replace the overdraft on the groundwater basins 2) to permit the drainage of excess salts out of the area and maintain a salt balance, 3) to provide a supplemental supply to lands now in production but not adequately irrigated, 4) to increase the water supply for the city of Tuscon, and 5) to maintain irrigation of 73,500 acres of land formerly irrigated, but now idle for lack of water.[870]

[869] Wilbur and Ely, op. cit., pp. 110-113.
[870] U.S. Bureau of the Budget, Report on Central Arizona Project (Department of the Interior, February 7, 1949), pp. 1-2.

The 1,200,000 acre-feet of Colorado River water diverted for the Central Arizona project is to be allocated to serve these various purposes in the following quantities after deduction for losses in transportation:[871]

Supplemental irrigation supply	113,000	acre-feet
Supply for 73,500 acres formerly irrigated	418,000	" "
Municipal supply	12,000	" "
Salinity control	376,000	" "

The total estimated cost of the project is $738,408,000 which is allocated to the various functions to be served in the following amounts:[872]

TABLE IX

CENTRAL ARIZONA PROJECT COST ALLOCATION

	Allocation of Costs	
Item	**Allocation by Existing Reclamation Law**	**Allocation by Recommendation of Bureau of Reclamation**
Power	291,160,000	243,798,000
Irrigation	420,019,000	397,693,000
Municipal	18,014,000	16,605,000
Flood Control*	6,290,000	6,641,000
Fish &Wild Life*	2,925,000	3,129,000
Silt Control*		28,097,000
Recreation*		37,459,000
Salinity Control*		4,986,000
Total	738,408,000	738,408,000

*Nonreimburseable items.

[871] U.S. Bureau of Reclamation, Report on Central Arizona Project, Project Planning Report No. 3-86, 4-2 (Department of Interior, December, 1947), p. R29.
[872] Ibid., p. 16.

A high dam at Bridge Canyon with a 750,000 kilowatt generating capacity is integrated with the diversion project to provide the power for pumping operations and the transfer the burden of repayment to power consumers through special charges included in the power rates structure:

> The cost of Colorado River water delivered to the farm exceeds the farmer's payments ability. Assistance from other project income, including power revenue, is necessary to accomplish full repayment on reimbursable construction costs.[873]

The proposal for the Central Arizona project extend the period of repayment from the established period of fifty years to a period of seventy-eight years to ease the burden of repayment. The total capital cost charges for power will write off the power investment with interest in 31.6 years and thereafter the power income above operating and maintenance expense would be used for the retirement of the irrigation capital costs. The irrigation capital investment would be provided free of interest and irrigation users would repay only about two per cent of the capital costs above operating and maintenance expenses.

Conflicting Claims. If the Central Arizona project should be approved by Congress, the 1,200,000 acre-feet of water to be diverted from the main stream of the Colorado River will be in addition to diversions of 1,200,000 acre feet of water already perfected or authorized from the Colorado River, the Little Colorado, and other tributaries in addition to the full utilization of the flow of the Gila River system. This total quantity of water, if utilized, would place Arizona in direct conflict with the anticipated requirements of California water users.[874] The claims of California users to 5,362,000 acre feet of water, based upon water contracts with the United Stats government for storage and delivery at Lake Mead, include claims to 4,400,000 acre-feet of water under the provision of the Boulder Canyon Project Act and the California Limitation Act, plus one-half of the million acre-feet of III (b) water, plus an additional 462,000 acre-feet from

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[873] Ibid., p. R79.
[874] Ibid., pp. R23-24. Colorado River Association, California and the Colorado River (Los Angeles, 1949), p. 21.

California's share of an assumed surplus subject to future allocation by the Colorado River Compact.

The Mexican water treaty virtually eliminated the possibility of any unallocated surplus water in the Colorado River, if not placing a direct impairment of the claims of the Colorado basin states to a total of 16,000,000 acre-feet of water allocated under paragraph III (a) and III (b) of the Compact. Thus California's reliance upon 462,000 of surplus Colorado River water is seriously challenged.

Arizona has continued to assert its exclusive right to the 1,000,000 acre-feet of water provided for under paragraph III (b) of the Compact on the assumption that this paragraph was originally written to protect Arizona's claims to the full flow of the Gila River during the compact negotiations.[875] Furthermore Arizona claims that III (b) water is included in the water apportioned to the lower basin and that California's Limitations Act automatically deprives the California water users from asserting rights to more than 4,400,00 acre-feet of water annually. Since neither the Boulder Canyon Project Act nor the California Limitation Act mentions III (b) water, California claims that this 1,000,000 acre-feet of water is subject to allocation as surplus water. As a result of these differences of interpretation of California's right, another 500,000 acre-feet of Colorado River water provided for by the water contract is clouded with doubt.

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[875] U.S. Congress, House of Representatives, Committee on the Judiciary, op. cit., includes the fullest analyses of different contentions of Arizona and California on this and the following areas of disagreement. For California's claims see testimony and brief by Northcutt Ely, pp. 31-168. Arizona's claim are presented by Charles A. Carson, pp. 341-466 and in the brief of the Colorado Basin States' Committee, pp. 265-296. See also U.S. Bureau of Reclamation, The Colorado River. Interim Report on the Status of the Investigations Authorized to be Made by the Boulder Canyon Project Act and the Boulder Canyon Project Adjustment Act (Washington: Government Printing Office, 1947), pp. 15-54. Colorado Water Board of California, California's Stake in the Colorado River by Raymond Mathew (Sacramento, 1949), 23 pp. Samuel B. Morris, "The Colorado River—the Southwest's Greatest Natural Resource", Journal of the American Water Works Association, XXXIX (October, 1947), 945-67. Samuel B. Morris, "The Water Problem," Proceedings of the Institute of Economics and Finance, Occidental College (Los Angeles, 1948) pp. 77-88. Stephen C. Shadegg, Arizona, An Adventure in Irrigation (Phoenix: Author, 1949), 28 pp.

Another basic area of controversy arises over the meaning of the term “beneficial consumption use” as used in the Colorado River compact. While the Gila River had an estimated total virgin flow at the mouth of the tributary of only 1,270,000 acre feet, a larger quantity of water averaging 2,300,00 acre-feet per annum has been available for utilization in central Arizona. Heavy evaporation, seepage and transpiration losses reduced the quantity of virgin flow in the Gila River by more than 1,000,000 acre-feet at the point of discharge into the Colorado River at Yuma. In determining the amount of Arizona’s “beneficial consumptive use” of Gila’s water, Arizona that it should be charged only for the depletion in the flow of the river at the confluence with the Colorado River, while California contends that Arizona should be charged with the full 2,300,000 acre-feet of Gila River now being consumptively used in Arizona.

Another phase of the controversy over the meaning of “beneficial consumptive use” related to a difference of opinion between Arizona and California over charges for evaporation losses in reservoirs occurring on the main stream of the Colorado, particularly at Lake Mead and Lake Havasu. No reference to evaporation losses is made in the Colorado River Compact. Since the California water contracts call for the delivery of the specified quantities of water at specific diversion points on the Colorado River and the California Limitations Act established the amounts in terms of consumptive use, California contends that its allocations are not subject to reductions for evaporation losses. However, Arizona, whose water contract specifically provides for deductions for evaporation losses, argues that California should be charged with an evaporation loss of approximately 600,000 acre-feet annually to be deducted from its allocation of 4,400,000 acre-feet of water.

To secure an interpretation of these controversies over the meaning of the Colorado River Compact, California is seeking to secure the consent of Congress to permit the United States to enter as a party litigant for the adjudication of those controversies before the United States Supreme Court. Arizona opposes litigation, confident that Congressional approval of the Central Arizona project will be sufficient to confirm its right to the disputed water. Since neither proposal has been approved by Congress, the Arizona-California controversy continues in a hopeless deadlock with no other instrumentality of government than that United States Congress capable of determining the next development.

Los Angeles's Stake in the Colorado River

Since the Colorado River is the only available source for a substantial quantity of water to meet the future requirements of Los Angeles and its neighboring communities associated with the Metropolitan Water District of Southern California, any challenge to their rights to Colorado River water is a threat to their future growth and development.

Under the priorities established by agreement of the California water users in 1931, the water rights of the Metropolitan Water District and the City of San Diego, which were subsequently transferred to the Metropolitan Water District, rank fourth and fifth after the prior rights of the agricultural users of Palo Verde Valley, the Yuma project and Imperial and Coachella valleys. The fourth priority of 550,000 is within the 4,400,000 acre-feet allocated form III (a) water by the Boulder Canyon Project Act and the California Limitation Act. The fifth priority of 662,000 acre-feet is dependent upon the utilization of III (b) water and unallocated surplus water.

Consequently the outcome of the dispute between Arizona and California will determine the availability of Colorado River water for the municipal supply of the Southern California

communities. Beyond the possibility of losing a portion of all of their Colorado River water, these communities face the prospect of being required to complete the payments on the bonded indebtedness of $200,000,000 for the construction of the Colorado River Aqueduct, which might become partially or wholly obsolescent for lack of rights to an adequate water supply. Ironically, the financial provisions of the Central Arizona project would place the burden of paying for the diversion of Colorado River water to irrigate central Arizona upon the power consumers of Southern California since that area is the only major market for electrical power in the Southwest.

In seeking to protect its future water supply and remove this limitation its continued growth and development, Los Angeles ha become intricately involved in controversy with other communities in other stats, creating one of the most complex problems to confront the federal institutions of the United States. While the federal-state-local government relations created by the need to meet problems of earlier developments on the Colorado River have in many ways been unique, the future disposition of the problems relating to the Colorado River will create important landmarks in the administration of water resources on an interstate stream where the demands for the water exceed its supply.

> Never must we relax our vigilance. Our water is our precious heritage. It is our life, our future, and the future of our children.
>
> Morris Poulson, 1948

CHAPTER X

CONCLUSIONS AND OBSERVATIONS

Water and Community Growth

While the balmy Mediterranean climate of Southern California has been the principal asset of the region, attracting millions of people to its constant sunshine and moderate temperatures, the lack of precipitation as a concomitant factor of the climate has imposed the most serious barrier upon the continued growth and development of Los Angeles and its neighboring communities. The constant challenge confronting Los Angles has been the struggle to extend the bounds of this barrier and provide for the most effective utilization of its vital water resources to contribute to its continued growth and to make Los Angeles the great metropolis of the West.

As the critical factor in the human ecology of the Southern California region, water has been a significant determinant of the pattern of human organization and adjustment to the physical conditions of the area. The original location of the Spanish pueblo was largely determined by the hydrography of the Los Angels River in relation to the location of tillable land on the coastal plain. The arid conditions of the region and its special requirements for water influenced the communal character of the original Spanish colony. The unique importance of water to the development of the region created a land-se pattern, singular among American cities, in which an irrigated agriculture has been a primary land-se as one phase of urban community growth. The special role of annexation in determining the geographic extend and the individual

character of Los Angeles was a result of deliberate public policies pursued in the utilization of its water supply. The relative success of Los Angeles and its neighboring communities in procuring water supplies from distant watersheds has permitted the continued expansion of the urban communities in Southern California, while at the same time limiting developments in the water supply areas and altering land use patterns to conform to the inadequate water supply available for local development. The extend and character of the developing metropolitan community which is being formed in the greater Los Angeles Los Angeles metropolitan area will be significantly influenced by the quantity of water available for future development and the public policies pursued in the disposition of the water supply.

Water as a Determinant of the Location of Los Angeles. The site of the original pueblo, which continues to be the center of the modern City of Los Angeles was determined by the firmness of the flow of water in the Los Angeles River, below the Glendale Narrows, in an area where the water could easily be diverted onto the coastal plain for irrigation. The subterranean bedrock which rises to within one hundred feet of the surface of the flood plain in the Glendale Narrows, forces to the surface the water percolating through the porous alluvial fill in San Fernando, to create the point of the maximum perennial flow in the Los Angeles River system. This maximum rater of flow continued through the length of the Narrows, to provide the maximum supply available for easiest utilization at the point where the river entered the coastal plain, whose fertile lands were available for agricultural development by the diversion of the river water for the irrigation of essential crops, which could not otherwise survive in such an arid climate.

As the river continued its course to the ocean, the volume of flow was diminished by the absorption of the surface water into porous soils and by loss through evaporation and

transpiration. At the lower portion of its course the Los Angeles River lost its identity as a continuous stream during the dry season of the year and was recognizable only as a series of sloughs and pools of water appearing in depressions along its normal flood course.[876]

While any location lower on the coastal plain would have been subject to a diminishing supply of water, later experience demonstrated that the course of the river was insufficiently stable to permit the establishment of a community, dependent upon the river's surface water supply, at any point below the head of the coastal plain. Several times during its history, the Los Angeles River radically altered its course across the coastal plain. On one occasion the river changed its generally southward flow to a radically different channel flowing in generally westerly direction across the coastal plain to reach the ocean near Play del Roy.[877] The location of the river at the lower contours in San Fernando Valley generally precluded the development of an irrigated agriculture in that area without pumping facilities.

While the physical circumstances relating to water supply were favorable for the location of an agricultural community, the inland location of Los Angeles, more then twenty miles from the ocean, later created a peculiar problem for a growing city. TO secure access to the ocean to carry its expanding commerce, Los Angeles found it necessary to annex the coastal areas of Wilmington and San Pedro with a connecting strip of land across the coastal plain to create a harbor for its expanding industrial and commercial requirements.

Water as a Factor Determining the Communal Organization of Los Angeles. Colonization of a semi-desert or arid region required a high degree of social organization since the sustenance of life could be provided only by an irrigated agriculture. The capital investment and social organizations necessary to operate an irrigation system and the potential competition

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[876] J. Gregg Layne, "Los Angeles River, the Unpredictable," Intake XXV (April, 1948), 21.
[877] Loc. cit.

for the limited supply of water resources precluded primary reliance upon individual initiative and action in advancing into a new frontier.

The Spaniards, who organized the colonization of California, had long experience with the problem of colonizing arid regions. The colonists were organized as a disciplined socio-political group subject to the immediate control, supervision and necessary subsidization by instrumentalities of central government. The contrast to the American pattern of colonization was recognized by the California Supreme Court in one of its decisions on pueblo water rights:

> These pueblos differed from our municipalities in many respects. They had no charters, and seem always to have been subject to the control and supervision of superior officers, and this control seems to have been complete and constant.
>
> Perhaps the most important respect in which the pueblos and habits of the inhabitants differed from our municipalities and the habits of our people is found in the extent to which individual wants were supplied from public or common lands. So far communal ownership would answer the purposes of the community it was preferred.[878]

Water as the "principal means of fertilizing the lands,"[879] assumed an especially significant role in the organization of the new settlement, in determining one of the most important problems for the government of the community and as a source of obligation of the citizen to the community. In each new pueblo the Spanish colonists were required to create the water works system with its toma for the diversion of water into the Zanja Madre. The plots of irrigable land located below the Zanja Madre. The plots of irrigable land located below the Zanja Madre were set aside and parceled to the individual settler while the lands above the Zanja Madre or beyond the reach of the tributary ditches were set aside for the non-irrigable land uses.

As a common property of the pueblo, the water and the maintenance of the water works system was the source of an obligation upon each resident of the pueblo. If his obligation were

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[878] Vernon Irrigation Company v. City of Los Angeles, 106 (Cal. 237, 246 (1895).
[879] "The Plan of Pitio," in John W. Dwinelle, The Colonial History of the City of San Francisco (reprint: San Diego; Prey and Smith, 1924), Addenda p. 32.

not fulfilled, a poblador could be deprived of his crops payment or he could be banished from the community and deprived of his holdings in property.

While Spanish practices unquestionably placed greater emphasis upon the communal nature of their colonial ventures, the same general impact of the lack of water resources in the arid west upon the American advance into the frontier has been noted by the eminent historian, Frederick Jackson Turner:

> But when the arid lands of the Far West were reached, no conquest was possible by the old individual pioneer methods. Here expensive irrigation works must be constructed, cooperative activity was demanded in utilization of the water supply, capital beyond the reach of the former was required. In a word, the physiographic province itself decreed that the destiny of this frontier should be social rather than individual.[880]

From this tradition of the Spanish origin of Los Angeles the adjustment of the Anglo-Saxon tradition of its later citizens to the arid conditions of Southern California was facilitated. The existence of a public water distribution system to sustain the agriculture of the community during its first decades under American rule served as a vital instrument for the city in the later development of its system of water resource administration.

The most important contribution of these Spanish traditions, however, was the virtual monopoly to the water of the Los Angeles River which the City of Los Angeles had derived from the interpretation given to the pueblo water rights by the California courts.

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[880] Frederick Jackson Turner, The Frontier in American History (New York: Henry Holt and Company, 1921), p. 258. See also Charles C. Teague, Fifty Years a Rancher. The recollection of Half a Century Devoted to the Citrus and Walnut Industries of California and to Futhering the Cooperative Movement in California (Los Angeles: Ward Ritchie Press, 1944). Pp. 133-34. Teague provides an interesting reaffirmation of Turner's conclusion by noting a similar phenomenon as the foundation for the California agricultural cooperative movement:

> It is interesting to note that cooperation in California probably had its origin in the development of mutual water companies. It was not possible, in most cases, for individual ranchers to bring water from the mountain streams to the valleys for irrigation, except in a very limited way. That could only be done by public utilities or by the organization of farmers into mutual companies. In many instance farmers thus learned to act collectively in the use of water and discovered some of the advantages and benefits derived from such collective action. From cooperation in mutual water companies it was just another step to the development of non-profit, grower-owned and grower controlled cooperative marketing organizations and cooperative purchasing agencies.

On the basis of the pueblo right, against which no other water right could be asserted, the City of Los Angeles was able to expand its boundaries to acquire suburban developments which occurred without an adequate water supply or in competition with the superior pueblo right, and to meet the needs of internal growth and expansion. As a result of its prior rights to this firm water supply, Los Angeles was able to assume an early lead in becoming the central metropolis on the Southern California coastal plain.

Water as a Stimulant to Annexation. The monopolization of the water resources of the Los Angeles River basin by the City of Los Angels concentrated the growth and development within the confines of a single community rather than permitting the development of a large number of smaller communities in the San Fernando Valley and the upper coastal plain areas. Except for the pueblo right, the vast quantities of subterranean water underlying the whole of San Fernando Valley, would have been available for competitive exploitation by individual farmers and communities.

The possibilities of extensive suburban development outside the corporate limits of the original pueblo boundaries of the City of Los Angeles based upon water which had been supplied to these extra-territorial lands through the city's zanjas, following the period of Mexican rule, was definitely precluded by the actions of the California Supreme Court denying the city's use of its pueblo right to supply Los Angeles River water to extra-territorial users. As a result, the first wave of annexation extended the area within the corporate limits of Los Angeles from twenty-nine square miles to forty-three square miles in three years.

Instead of following the usual pattern of cut throat competition and litigation which frequently arose when numerous small communities were competing for the existing supply of water, Los Angeles was able to manage its great wealth in population, capital and other resources

as a single unit in order to secure necessary funds and general political support to gain a new supply of water from the Owens River to meet the future requirements of a great city.

Los Angeles produced a fundamental transformation of the basic community pattern with this new water supply which largely determined the present characteristics of the City of Los Angeles. Instead of pursuing the expedient of selling Owens River water to extra-territorial users for all that the market would bear and thus refund the bonded obligation for aqueduct construction more immediately, annexation to Los Angeles was required as a condition precedent to the sale of water.

The 257 square miles annexed to the City of Los Angeles in the great annexation movement of 1915-1927 opened a vast territory including most of San Fernando Valley for future growth and expansion that produced one of the most decentralized metropolitan areas in the United States. New communities and real estate developments which might have developed independently as extra-territorial water consumers of the City of Los Angeles instead became a part of the city to share its general growth and development. Again, the concentration of financial resources in a single agency of government enabled Los Angeles to assume the initiative for the costly venture of transporting a new water supply from the Colorado River, across the Coast Range and to the municipal water distribution systems on the coastal plains.

Annexation was not the only policy which could have been pursued by the City of Los Angeles in utilizing its water resources. However, the pursuit of this policy and the impact which it had in determining the geographic bounds of the City of Los Angeles significantly illustrates the conclusion that water as a vital factor in community growth can be used by civic leaders as a basic tool to mold the type of community which they are seeking to build. It is

difficult to conceive the general pattern of urban growth and the multiplicity of local government units if the policy of supplying water to extra-territorial consumers had been pursued.

Water and the Land-Use Pattern of Los Angeles. In the traditional American pattern of urban development, agriculture has generally been excluded as a function of urban life as distinguished from rural. However, no such dichotomy between rural and urban land-uses has ever existed within the City of Los Angeles.

The monopoly of the water supply of the Los Angeles River and the necessity for large investments in capital and human energy to construct and operate water works caused Los Angeles, as a Spanish pueblo, a Mexican cuidad and as an early American city, to supply water for irrigation to assure a necessary food supply. Agriculture continued as a primary land-use and economic pursuit until after the arrival of the transcontinental railroads, when it was eclipsed by subdivision and the traditional urban developments, until surplus water was again available for the development of extensive agriculture following the completion of the Los Angeles Aqueduct.

By the encouragement of agriculture as a primary land-use within the city limits, Los Angeles was able to convert its investment in water resources into an economic product which would make immediate returns upon the capital invested in a water supply. An irrigated agriculture provided a means of economic livelihood for a greater number of people attracted to Southern California. This contributed substantially to the pattern of internal growth by providing a greater market for the expansion of local industry and commerce. The water utilized by agriculture was roughly equivalent to the demands which the normal pattern of urban land use would create for a comparable area of land, thus permitting the temporary use of the water for agriculture, with both the land and water available for later urban growth and expansion.

As Los Angeles' own reclamation project, San Fernando Valley served as an area for extensive utilization of most of the surplus water available from the Los Angeles Aqueduct. The economic opportunities created by this agricultural development, immediately adjacent to urban markets, in turn contributed substantially to the tremendous growth which Los Angeles experienced during the 1920's. Today San Fernando Valley continues to contribute its great agricultural wealth to the general economic prosperity of Los Angeles and provides many square miles of land for future subdivision and industrial development. As an integral part of the utilization of its water resources, Los Angeles has developed a unique pattern of rural-urban land-use which has contributed significantly to the growth and development of the community.

Water as a Determinant of the Extent of Community Growth. As one of the primary requirements of human livelihood, water is one of the most immediate limits upon the extent of urban development. In the semi-arid west, where great demands are made upon the limited water resources by both agricultural and urban users, the relationship of water to the extent of community growth is more obvious.

If Los Angeles had been limited to the available water supply of the Los Angeles River watershed, it is doubtful if a population in excess of 350,000 could have been provided with a safe supply of water. The quantity of water available for consumption can be calculated only on the basis of the minimum yield rather than upon the long-time average yields.

The operation of water as a limit upon community growth is most evident in regard to the acquisition of the Owens River water supply. With the new supply made available from Owens Valley, Los Angeles was able to greatly expand its territorial limits, undertake the reclamation of San Fernando Valley and to inaugurate a new era of urban growth and development to make Los Angeles the leading metropolis of the west. On the other hand, the acquisition of the Owens

River water by the City of Los Angeles resulted in a serious restriction of the normal pattern of development in Owens Valley causing an actual decrease in population during the decade of the 1920's while Los Angeles was experiencing its greatest book. With the exportation of its primary resources, water, the basic pattern of economic activity in Owens Valley had to be reconverted to economic pursuits which required a minimum demand for water such as the tourist trade, mining and livestock farming.

In the competition for the limited water resources, the large urban areas have the distinct advantage of tremendous wealth which may be mobilized to import water from great distances and to destroy competing agricultural pursuits by the acquisition of the agricultural lands, causing the water to be diverted for urban consumption. In this way the large urban areas have available a significant instrument to remove the most critical limit to their future growth and development. Once a city has exhausted its local water supply, it has available other resources in wealth and human imagination to overcome the previously existing limits.

Water: The Catalyst of a New Metropolitan Community. The conclusion reached by the early Annexation Commission that "wherever…water is place—be it north, south, east or west—there will the greatest development of the future be found,"[881] can be accepted as a truism in relation to the growth and development of the greater Los Angeles metropolitan area in Southern California. The dominant position which Los Angeles has come to hold in the complex of communities that cover the Southern California coastal plain is in direct proportion to its ability to command a greater water supply than available to any other community. Whether this complex of communities organized as separate political jurisdictions will tend to develop a single community of interest institutionalized on a metropolitan basis will depend largely upon

[881] Los Angeles City, Council Records, XCIV: 141.

the use of water supply as a tool to shape both the pattern of community growth and development and the political institutionalism of water administration.

The water problem has been at the frontier of metropolitan organization and development. The need for the importation of additional supplies of water for various cities on the coastal plain was the motivation for the formation of the Metropolitan Water District of Southern California and the construction of the Colorado River Aqueduct. The availability of this supply of water in turn will determine the future areas of development, depending upon the policies pursued by the Metropolitan Water District in disposing its water supply. A policy of restricted membership will mean greater development for those municipalities which are already members of the Metropolitan Water District, while a policy of free admission of new municipalities to membership would permit the general development of Southern California as an integral unit.

When present reserves are exhausted the force of a common crisis will provide an opportunity for further action and institutionalization which could move in the direction of a general pattern of action for the metropolitan area as a whole.

Water and Politics

Water as a Political Problem. In the efforts to deal with the critical limit imposed by the natural shortage of water in the Southern California coastal plain, the agencies of political action have been confronted with a problem as constant as the conditions of nature. No other single problem has made such constant demands upon the attention of the citizens and civic leaders in Los Angeles then questions relating to the supply and utilization of water.

In the early Spanish-Mexican community, controversies over water and water rights form an important part of the historical record of actions taken by the little community to protect its water supply from use by the adverse claimants in San Fernando Valley.

The administration of the municipal irrigation system to meet the needs of agriculturalist was never relinquished from public control and operation. The activities of the zanjaro or water overseer were intricately interwoven into the fabric of municipal government during the decades when agricultural land-uses predominated in Los Angeles as a city of orchards and vineyards. The fiscal resources of the community were used to meet deficits in revenue for the operation of the zanjas and to provide major improvements for the extension of the irrigated agriculture of Los Angels to the higher contours surrounding the city. When subdivisions and urban land-users gradually replaced the agricultural land-uses, serious problems of maintaining the water supply for the irrigation of isolated farms caused the city new conflict and adjustment. Judgments on public policy are necessarily involved when an old way of life is forced to give way to the new.

During the first two decades of American rule, various efforts to secure adequate provision for a domestic water distribution system provided perplexing problems to the local citizenry and their municipal officials. While the thirty-year lease temporarily crystallized the form of attack upon the water problem, the reliance upon private development never removed the problem from the local political scene. Water problems remained a "…continual source of annoyance and a political hobby in Elections"[882] despite the assurance of proponents that private operations would remove the source of irrigation.

After carefully securing the establishment of the necessary powers to secure full municipal control and administration of the city water works in the first home rule charter, Loa Angeles launched upon an intensive political campaign supported by the overwhelming majority

[882] Ibid., Archives, VI: 680.

of its citizens and public officials to regain full control of the water works at the termination of the lease. Delay and obstruction on the part of the leaseholders merely served to intensify local determination to attain full municipal ownership and control. This was accomplished after three years of controversy and litigation.

Municipal Ownership: Policy or Principle. While the policy of municipal ownership of the water supply and distribution system involved many legal questions to be litigated in the courts, the issue was approached in the political arena, essentially as a question of public policy not one of the "principle" of public ownership. The great majority of the political forces in Los Angeles including commercial and civic associations, both major political parties, and each of the major newspapers, gave their vigorous support to the municipal ownership of the water utility.

Paradoxically, the only group which persistently opposed the municipality owned water system once it was established, were the Socialites who saw the water department as a tool in a plot to enrich land speculators in San Fernando Valley as a result of the acquisition of the Owens River water supply. Both the Democrats and Republicans vied with each other to accomplish the objective of municipal ownership with the greatest dispatch.

The initial commitments for the development of hydro-electric power through the agony of a municipality owned power generating system was accomplished without ideological controversy over the principle of municipal ownership. Since the generation of electrical energy was simply a by-product of the transportation of the municipal water supply through the Los Angeles Aqueduct from Owens Valley, this physical circumstance obviated any other rational approach to the utilization of the power available from the falling water.

However, the disposal of the power generated along the aqueduct created an intense conflict between the privately owned electrical utilities and those championing the development of a municipality owned electric distribution system. The extensive resources of the private electric utilities, the less immediate necessity of electrical power for the future growth and development of the City of Los Angeles, the relatively unlimited potential for the development of electrical power from other sources of energy such a natural gas and oil, and the less obvious relationship of electrical to requirements of the health and welfare of the community provided the setting for an intense political struggle lasting more than twenty years, over the principle of public ownership until the municipal power system gained a full monopoly over the electric generation and distribution system in Los Angeles.

This dichotomy in the political consideration of municipal ownership of the water and power systems was reflected in a rather distinct differentiation of the source of political support for the two municipal utilities. The Los Angeles Record and those who conceived the acquisition of the Owens River water supply as a plot to enrich land speculators in San Fernando Valley consistently opposed to the water bureau and generally supported the power bureau. On the other hand, the Los Angeles Times and the conservative elements of the business community opposed the power bureau and usually supported the water bureau.

Politics and Administration. With the acquisition of the domestic water works system, problems relating to the administration and utilization of water became intimately involved in the whole fiber of municipal politics and administration. Every question of policy required public decision, every major capital expenditure required popular ratification to authorize extensions of bonded indebtedness, and every change in basic administrative organization required popular approval through amendments to the city charter.

The primary responsibility for political initiative and leadership came from the administrative leaders and public employees directly concerned with the operation of the municipal water and power utilities. They had the fullest information and understanding of the physical limits of the water resources and of the potentialities that could be realized through the determination of proper policies in order to secure the development of a greater Los Angeles. As the problems relating to power development took precedence over problems of water supply, the center of political leadership and initiative tended to shift from the water bureau to the power bureau. But in either instance the administrative instrumentality provided the leadership and initiative.

Through the necessity of common political action to realize the objectives of the department, many civic leaders of great imagination, capacity and leadership came to be identified with the water problems of Los Angeles. From this group many distinguished individuals were recruited into the public service to serve Los Angeles as members of the board of commissioners responsible for the general government of the department.

The general political activities, developed as a means of realized the program of the department, contributed significantly to the quality of administrative performance within the water and power department. The necessity of keeping various organized community groups and the general public informed of its problems and plans caused the administrators to be sensitive to the public interest in order to win the approval of various civic groups and ultimately the municipal electorate as a whole. This interchange between the administrative apparatus and the community, which it served, was most fruitful in winning general approval of much of the administrative program and in maintaining a strong sense of public service among the administrative officials and the water and power employees.

One of the most striking consequences arising fro the necessity of the water and power administration to engage in politics was the requirement placed upon the departmental leadership to define the administrative objective and program in terms of general goals relating to progress and advancement of the Los Angeles community. Turing their own attention and the attention of the employees of their department to broader community objectives provided a basis for the common unification of their efforts and a feeling of purposefulness which was productive of a power esprit de corps rarely found among municipal civil servants. The department became a corpse of men dedicated to a cause which they understood in terms of their community.

Once the basic political objectives of the department had been achieved with the acquisition of a complete monopoly over water and power distribution in the City of Los Angeles, the stimulus of a common cause no longer existed to call forth efforts "above and beyond the call of duty." Efforts to remove the department from politics and institute a "business-type" administration were destructive of the morale and operational efficiency of the organization.

Apparently, the administration of water resources so that water and power are conceived as tools for the realization of grater and better community is more productive of efficiency than the establishment of efficiency as an end in itself.

The "business-type" administration in the public service, with its concentration of attention upon operational efficiency seems to produce a phenomenon which has already been noted as a characteristic of business enterprises:

> The odd result of this is that "the management"—whether employers or managing directors, do not lead the men they control. They have enormous power over men's live but they are not their leaders. The men choose their own leaders to defend them against management.[883]

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[883] A.D. Lindsey, The Modern Democratic State (New York: Oxford University Press, 1947), p. 185.

With the increasing emphasis upon the "business-type" administration and operational efficiency, employees in the Department of Water and Power have come to rely increasingly upon the trade unions to represent them in negotiations with the administrative management. A strike of departmental employees during the period of the department's political struggles seems inconceivable.

Politics and Federalism. Beyond the requirements of the local situation political action is also an essential tool within a federal system of government for a local unit of government seeking to secure integrated action for the development of water resources. Watersheds do not conform to the boundaries of political units of government. As a result, it was necessary for Los Angeles to secure approval and positive actions from the state and federal government, in order to meet its future water and power needs. Since state and federal government approval or action is often not available upon request, means were devised to secure favorable action. To do this the general approval of the local community and neighboring areas were secured and turned into an effective vehicle to use the local political representation to press for favorable state or federal action within the state and federal agencies responsible for the formulation of public policies. The cause was actively represented and championed whenever and wherever its chanced for success were enhanced. Unquestionably the most notable instance of such political action was the campaign to secure the authorization of the high dam and reservoir on the Colorado River at Boulder Canyon.

At the state level many questions relating to the corporate powers of the City of Los Angeles, the administration of municipal utilities and the extra-territorial operations of municipalities require constant attention. In addition to the top administrative officials, and

members of the legal department, the department has regularly employed men to represent its interests at the state and national capitols.

While the position of Colorado River Agent has been replaced by the more innocuous title of "administrative engineer," the function of representing the department's interest in federal actions relating to the Colorado River remains the same. The more recent efforts to remove the department from politics has never challenged the activists of the department in strengthening its representation to influence a favorable decision on points of controversy between Arizona and California regarding the Colorado River.

Water and Administration

Water and Municipal Administration. While the zanjero or water overseer was a very important instrumentality of water administration for many decades, the modern development of municipal administrative organization for water supply distribution can best be dated from the termination of the leasehold arrangement and the acquisition of full municipal ownership and control of the local water works by the City of Los Angeles.

The policy of municipal ownership was the immediate creator of a new agency of municipal administration with the establishment of the Los Angeles water department. The creation of the main body of the administrative organization simply involved a transfer of the staff and equipment of the Los Angeles City Water Company from private status to the municipal civil service, with the creation of the new managing and policy forming apparatus to provide public direction and control within the framework of municipal ordinances and charter provisions.

The home rule charter, which Los Angeles had adopted in 1889, provided great latitude of flexibility for the organization of a municipal water utility so that substantial corporate

freedom could be permitted in administrative operations. From the beginning the Los Angeles water department had broader discretion in fiscal operations and rule-making authority than enjoyed by the other departments of city government. Special charter authorization made possible the creation of the Bureau of the Los Angeles Aqueduct and the Bureau of the Los Angeles Aqueduct Power to permit the development of a unique chapter in municipal water works construction.

The integration of the water and power system following the construction of the Los Angeles Aqueduct posed serious organizational problems when considered in the general political environment of the growing struggle over power distribution facilities. The utilization of the same Owens River water both for domestic consumption and the generation of electricity required close integration of water transportation and power generation.

This requirement of effective integration of these two functions was complicated by a substantial area of conflict between the nature of the two water uses. The needs of water consumers, especially irrigators, required an abundant supply of water during the summer months when the normal discharge of Owens River was at its maximum level. On the other hand, the heaviest demand for electrical energy occurred during the winter when the flow of Owens River was at a minimum level. The requirements for power production thus conflicted with the needs of water consumer necessitating careful integration of the planning and construction of water storage facilities and the operation of the aqueduct to minimize the extent of conflict and to meet the requirements of each utility.

While the administration of water transportation and power generation required close integration, the completely divergent character of the water and electrical distribution system permitted substantial autonomy of these phases of the operational organization. These physical

circumstances, reinforced by divergent political approaches to water and power questions, the differing bodies of citizen support for the two utilities and the dual leadership of William Mulholland and E.F. Scattergood, provided the ingredients which gave the administrative organization of the Department of Water and Power and predecessor agencies their distinctive characteristics

The inherent unity of the transportation of the Owens River water supply and the generation of hydro-electric power was reflected in the organization of a Department of Public Service in which the two functions were consolidated into a single departmental organization. No other possibility than the unified administration of water resources seem to have ever been considered.

The unification of the water and power systems under the administration of a single department of municipal government reflected only a minimal integration with the two different utilities incorporated into a loosely knit departmental structure subject only to the policy controls of a part-time citizen board and its president as a full-time official. The active management of the system centered in the chief engineer and general managers of the two bureaus.

While much of the dynamics of the Department of Public Service and its successor, the Department of Water and Power were a product of the diversity in leadership and administration of the two systems, the autonomy of the two bureaus did not result in administrative chaos during the incumbency of Mulholland and Scattergood were modified and unified by the unique capacities of R. F. Del Valle, for many years a member and president of the Board of Public Service Commissioners and William B. Mathews, special counsel of the Department of Public Service and the Department of Water and Power. Both of these individuals, who possessed a great sense of dignity and devotion to the cause of the department and enjoyed the confidence of

Mulholland and Scattergood, were able to mold the leadership of the department into a collective unity that provided an exceedingly effective leadership in departmental affairs.[884] Considering the nature of the personalities of Mulholland and Scattergood, the autonomous organization of the two bureaus and the diversity of political relationships centering about the water and power systems, it would seem doubtful that a more highly integrated organization of the management function would have been possible.

The greatest advances in the development of the Los Angeles municipal water and power utility unquestionably occurred under this informal collective managerial relationship in which each system was motivated by a friendly competition in the realization of a common objective for the City of Los Angeles. It was under this management that many of the housekeeping and staff functions of the department including meter reading, consumer relations, purchasing, accounting, publicity and personal matters were organized as joint divisions serving the needs of the two bureaus and the common management of the department.

The effectiveness of the collective managerial leadership deteriorated as the personalities of the group changed. Following Mulholland's retirement, Scattergood rejected the collective management approach in his effort to secure his own designation as general manager of the department. As John B. Haynes gained ascendancy on the board of commissioners after Del Valle's retirement, the leadership of the commission was vigorously orientated to the cause of the power system. W.B. Mathews had gradually withdrawn himself from the internal affairs of the department with the increasing demands upon his time at the state and national capitals to secure authorization of various phases of the Boulder Canyon and Colorado River Aqueduct

[884] The role of the lawyer as an administrative counselor and an architect of political institution would seem to warrant more emphasis in the study of public administration. The career of William B. Matthews would provide an excellent case study.

project until he finally resigned his position with the Department of Water and Power to become the general counsel for the Metropolitan Water District of Southern California.

During the nearly fifteen-year period that Scattergood and H.A. Van Norman, as Mulholland's successor, dominated the management of the two bureaus, departmental leadership was marked by struggle and conflict. Control of the joint divisions passed from one group to the other depending upon which group was in the ascendancy. Various attempts to reorganize the management of the department failed since no one was able to provide the leadership to gain support of the various internal and external, administrative and political forces involved.

Not until the political forces mobilized behind the Bureau of Power and Light disintegrated and Scattergood was forced into retirement following the acquisition of the electric distribution system of the Los Angeles Gas and Electric Company was the way paved for the reorganization of the Department of Water and Power. Then, Van Norman was able to effectively mobilize the support of the power system employees and lay the foundation for unified management of the department, through his opposition to the policies of the Board of water and Power Commissioners led by James D. Agnew.

While the organizational arrangement of the department is now integrated under a single general manager and chief engineer, the molding of the department into an effective operational team is being gradually realized under the skilled leadership of Samuel B. Morris who fully appreciates the personal, political, and physical factors involved. The integration of the leadership and management function has not greatly altered the basic character of the operational autonomy of the water and power systems. Administrative organization has a living vitality that cannot readily be reduced to the status of organizational charts.

Water Administration and the Extension of Home Rule

While the internal administrative arrangement in the Department of Water and Power have been the subject of interesting organization experimentation to adapt the requirements of the organization to problems inherent in water administration, to other political and social facts and to the personalities of the leadership, the requirements of corporate freedom of the water and power utilities as a proprietary function stimulated experimentation in phases of municipal administration which further extended the frontiers of home rule in Los Angeles city government.

The greatest advances into the frontier of home rule have occurred to meet the need for more operating autonomy in the administration of the fiscal affairs of the department. The initial freedom of budgeting for departmental operations was extended to include long-term budgeting for capital improvements. The "business-type" audit has become an established part of the department's fiscal administration with the audits performed by Price, Waterhouse Company. A unique provision for a decennial survey of the departmental administrative organization and practices by an independent firm of administrative analysts provides an interesting experiment in auditing administrative operations.

Probably the most significant development occurring in municipal finance administration, which had grown from the needs of the Department of Water and Power, was the authorization of the use of municipal revenue bond to finance capital improvements and extensions in the water and power system as special obligations payable only from water and power revenues. The use of revenue bonds for general improvements was authorized specifically by charter amendment after a number of significant decisions had been secured from the California

Supreme Court recognizing debt administration of water and electric utility operations as a municipal affair in a home rule city.

Although very little progress has been made in extending comparable freedom for corporate operations in the area of personnel administration, the nature of the personnel problems confronting the Department of water and Power are of sufficient diversity and magnitude to create demands for the reconsideration of the adequacy of the conventional concepts of civil service administration for a more positive approach to personnel management.

Water and Extra-Territorial Administration. One of the most perplexing problems of water administration is the administration of the water supply areas. Where the water supply is inadequate to provide for the potential developments within the watershed area and to permit the exportation of water to meet the needs of large urban communities these two interests come into direct conflict over the available supply.

The acquisition of lands riparian to streams and lakes and the land overlying the underground water supplies immediately involves the agency of municipal water supply in the role of the landlord controlling nearly all of the land and water rights in the watershed area where the doctrine of riparian rights governs the water law of a state. Control of land and water in semi-arid regions gives control over nearly every aspect of life. Thus distant urban communities acquire virtually complete control over the very existence of the agricultural economy of the water supply areas.

Competition for water between the rural water producing area and the large urban water consuming area gives rise to nearly irreconcilable controversy reinforced by separate cultural and ideological orientations. Their way of life and points of view are almost diametrically opposed, leaving little opportunity for compromise and adjustment of outstanding differences. Samuel B.

Morris' description of an analogous situation existing in hydraulic engineering applies with even greater emphasis to the conflict between the urban water consuming area and the rural water supply area:

> … there is quite a marked difference in views between the sponsors of so-called "up stream engineering" of "little waters" ad the hydraulic engineers accustomed to the design and construction of major dams, locks, power plants, canals, dikes, river revetments, etc. Their struggle for dominance of expression in the brief reports of the committees gives psychological interest at some sacrifice of readability and true technical worth. Even the published reports of research and observation are read cynically and doubted or disbelieved by those of opposite schools of allegiance or belief.[885]

Since this type of problem in water administration is of relatively recent origin no adequate instrumentality of state government has been devised to attempt to resolve the conflicts between the two areas. Reliance upon special legislation and enforcement through litigation in the courts has failed for the inability of the courts to perceive the problem in all of its ramifications within the confines of a single case or group of cases involving a justifiable issue. Furthermore litigation does not provide a desirable climate for negotiation and compromise so essential to the development of a working relationship to a problem which can never be resolved by a single judgment.

The complexity of the involvement of the water consuming area in every detail of the political, economic and social affairs of the waters supply area, has required the development of a special extra-territorial administrative agency of municipal government organized on a geographical basis with broad delegation of authority to responsible officials in the field. The Northern Section of the Los Angeles Aqueduct Division integrates all primary divisions and sections of the water and power system and the joint divisions so that the responsibilities of the department in the Owens-Mono area can be effectively coordinated in all of their various

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[885] U.S. National Resource Committee, Proceedings of the First Southwest Planning Conference, September 9-10, 1938 (nwp, 1938), p. 63.

aspects. Administrative responsibility has been decentralized to give those in immediate contact with the detailed problems concerning the people of the area adequate authority to act. Little has been done to bring representative of Owens Valley into the administrative apparatus for consultation on local problems.

Water and Metropolitan Government. The Metropolitan Water District of Southern California was purposely created to meet the water requirements of a common community of water consuming areas in Southern California. During the two decades of its existence, the Metropolitan Water District was organized as a novel agency of metropolitan government in the Southern California metropolitan area, procured a $220,000,000 bond issue, designed and constructed the world's greatest aqueduct to transport Colorado River water to Los Angeles and its surrounding communities and expanded its area and jurisdiction to take in twenty-eight incorporated communities as well as several public utility and irrigation districts.

In addition to determining the general extent and pattern of community growth, the Metropolitan Water District of Southern California has a unique opportunity to broaden its base of operations and become the center for the further political institutionalization of the developing metropolitan community.

When existing supplies of fresh water are exhausted, the possibility of reclaiming sewage affluent will create an opportunity for an expansion of the function of the Metropolitan Water District into a new operation of government which could be best performed on a metropolitan basis notwithstanding legal problems such as the possible existence of vested water rights to sewage effluent, which might constitute a barrier.

Beyond expanding the volume of water supply available, it may eventually be necessary to provide for the selection of industries and water uses which will be permitted to have access to

the available water supply. Performance of any such function would require the establishment of general police powers by an agency of metropolitan government to provide a general government for the region. While these possibilities are only conjectural, the existence of the needs, the leadership and the imagination which went into the original creation of the Metropolitan Water District of Southern California can provide a fascinating new chapter in the ability of men to utilize the weaknesses of a region implicit in its limited water resources to mold a new community and give it new political institutions to attain their vision for the future of Southern California.

Water Administration and Federalism. Water Administration poses some exceptionally critical problems for the federal arrangement of political institutions in the United States characterized by the division of responsibility among the national, state and local institutions of government. Local unites of government are concerned with the utilization of water for domestic consumption, irrigation, the generation of hydro-electric power, and the protection of their communities from the hazards of flood. State governments are intimately involved through their control of the general laws of water rights, the development of special projects relating to water administration and the general control of local units of government. The federal government is directly involve in water administration through its ownership and control of public lands and its general responsibility for interstate and navigable streams. Yet the water of any given river system represents a physical unity which transcends the interests of any single political jurisdiction in a federal state.

The role of the state of California in the formulation of the law of water rights and the development of water works projects has presented difficult problems for water resources planning by local units of government and state administrative agencies. The doctrine of riparian

rights, as formulated and interpreted by the courts prior to the adoption of the "reasonable use" amendment to the California constitution in 1928, created an impossible barrier to effective planning of water resources development in an arid region. The right of a riparian owner to the undiminished flow of a stream by his abutting lands subject only to the reasonable use of other riparian owners seriously restricted the conservation of surplus waters to be appropriated for use on non-riparian lands or by municipalities for domestic consumption.

Elwood Mead in discussing the precedent of Lux v. Hagrin presents an interesting conjecture that the court decision might have been different if the court had been presented with a case involving greater extremes of aridity,

> It so happened that this case arose in a section of the State were crops can be grown without irrigation, and so the recognition of the doctrine did not necessarily mean, as has been contended by the attorneys, that the settlers who were diverting water would have to abandon their homes if deprived of it, as they would have had to do in Utah and even some sections of California.
>
> … the results might have been different if this historic case had involved orange lands where irrigation is a necessity instead of wheat lands where it has not be so regarded.[886]

Except in its water program in Owens Valley and Mono Basin, Los Angeles was able to escape the restrictions of the riparian doctrine through the development of the "pueblo" right to the Los Angeles River. This special species of water law provided an alternative enabling the courts to escape the consequences of the riparian doctrine in an area where the inherent weakness of the riparian system of water law would have been most evident.

However, the state of California proved equally incapable of developing its own water resources after the court qualified the rigidity of the riparian law by the inclusion of the reasonable use doctrine. After years of struggle culminating in legislative and popular approval

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[886] U.S. Department of Agriculture, Report of Irrigation Investigations in California, By Elwood Mead (Washington Government Printing Office, 1901), p. 43.

of the Central Valley Project, the development and administration of the project was left to the federal government.

The state, as an agency of government, seemed unable to comprehend the importance of water resources development in the state as a whole. These projects tend to be considered a local improvement even though no other agency of government is available for their development. The success of the City of Los Angeles in developing and utilizing its water resources provides a marked contrast to the failures of the state government. Los Angeles was fully aware of its needs and invented the means to realize its objectives. The wide latitudes provided under the California law of municipal corporations with its provisions for home rule provided an adequate opportunity for local action

On the other hand, the complexity of water resources development on an inter-state stream such as the Colorado River creates a relative vacuum in which local action is plagued with risks of uncertainty and insecurity. While the interests of the federal government in the Colorado River are unquestioned, the reliance upon the various states of the basin to come to some agreement for the allocation of water rights has failed. After nearly thirty years of controversy, Arizona and California are father from agreement today than when the Colorado River Compact was originally formulated. The development of water resources cannot be contingent upon the ability of the various interest involved to come to unanimous agreement upon the conflicting claims which each party is presenting to the limited water supplies which are available.

If the states are not able to agree among themselves as to the allocation of water rights and the planning of water works developments some agency of government must be available to adjudicate and resolved the differences. No instrumentality of government is available to

perform this function. The United States Supreme Court has failed to meet the requirements of the situation by its adherence to a rigid rule of law defining a justifiable issue and by the requirement that the United States be made a party to the litigation even though the United States cannot be sued without its consent. Moreover the judicial process is subject to serious limitations in resolving the complex conflicts arising from the development of water resources.

While the Colorado River Compact was conceived as a new approach to the solution of regional problems which were "bigger than the state" and "less than national" it has not provided the solution to "a regional problem, regionally administered."[887] The American System of federal government has not yet demonstrated its capacity to develop the water resources of the Colorado River and to resolve the conflicting interest within the confines of federal institutions.

Similarly serious questions seem to exist as to the adequacy of functionally organized administrative units of the federal government to surmount their functions specialties and orientations to attain the necessary integration and interrelatedness of water resources administration. The general orientation of the United States Bureau of Reclamation, for example, which was created to reclaim the arid lands of the west by irrigation, which mobilizes much of its political support from various reclamation associations, hardly produces an adequate perspective to weight the relative priorities which should be placed upon the reservation of water for future utilization by industry against demands for the immediate use of water to expand the irrigated agriculture of the west. Yet, this problem of priorities is one of the most critical problems confronting the Colorado basin states and the arid west, today.

An analysis of this problem of interrelationships described by John M. Gaus is a discussion of land-use administration might be applied equally to water resources administration,

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[887] Supra, p. 446.

> For any one of these agencies to embark on a program relating to land-use (water resources) in a community without the careful integration of its research, information, and program of priorities with those of other agencies having responsibilities for land-use (water resources) programs would be to invite expensive and trouble making distortions of the local ecological pattern. The resulting stimulation of a local opinion contemptuous of any action by government might have costly consequences at a latter time of critical need for collective action. Quite as important, however, would be the need for a careful dovetailing of national programs, within the national powers and resources, with municipal, county and state programs to avoid the development of a policy through pork barrel methods, on the one hand, and the neglect of a sound natural resources policy that would facilitate local prosperity, on the other hand.[888]

Water presents problems arising from the physical unity implicit in watershed systems and from the various facets of its utilization intertwining the economic, political and social fabric of human life in the arid west which challenge the capacity of public administrators to invent new instrumentalities to provide an effective approach to the planning, utilization and administration of water resources within the American system of federal government.

Water, Institutions and Men. While water has had an important influence upon governmental institutions and practices in the development of Los Angeles, other elements in the local complex of human ecology have significantly influenced the development of water resources administration.

The general body of law and political institutions, while significantly influenced by the physical requirements of water supply, have formed the framework within which the human tasks of administering the various aspects of the water problem are engineered. Certainly the freedom of administrative autonomy and municipal home rule as provided in the Los Angeles city charter and the laws and constitution of California provided the essential requirement to permit the exercise of local initiatives and leadership in the development of water resources to remove the critical limit upon the future growth and development of the Los Angeles area. The

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[888] John M. Gaus and Leon O. Walcott, Public Administration and the United States Department of Agriculture (Chicago: Public Administration Service, 1940), p. 28.

existence of a particular distribution of powers and functions of government within the framework of federal institutions imposes definite limitations upon the possible approaches to water resources administration even though the water requirements of the west have produced significant experimentation with these political institutions in the past and unquestionably will do so in the future.

The power and capacity of individual men and groups of men to visualize the possibilities of effectively utilizing the water resources of the area and to procure water resources from distant watersheds have been the necessary instruments to meet the needs of human society for water within the physical setting of Southern California. While the hydrology of the region imposed conditions upon the nature of their action and the solutions of their problems, men who exercised political leadership in Los Angeles have used these limits as an important tool to shape the formation of institutions and the development of the community to create Los Angeles in their vision of the Great City.

Conceived in its proper perspective among the various factors in the ecological pattern of human existence in Southern California the limits of its water resources remain one of the primary factors determining the necessity for governmental action to make possible an expanding horizon of progress and development upon its arid plains. The physical limitation of water supply presents both a problem and an opportunity for inspired men who realize that,

"Where there is no vision, the people will perish."[889]

[889] Proverbs, XXIX: 18.

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