Chapter 4

WATER, WATER, EVERYWHERE, OR WAS THERE?
THE HISTORY OF PRIVATE WATER COMPANIES IN BERKELEY

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Introduction

Slightly less than a century ago, a popular guide to Berkeley stated that one could "hardly penetrate the hills anywhere without finding the water perfectly pure, and ready to burst forth at the touch" (Elliott, 18_?_). At the time, of course, there were few people living in Berkeley, so that the water found in the local creeks and in the ground was far more than enough to supply the needs of the settlers. To those early residents, then, there probably did seem to be an unlimited supply of water. With the rapid growth in population that took place during the final decades of the nineteenth century, however, the local water supply quickly proved inadequate. Water needed to be piped in from outside the region. When the East Bay Municipal Utility District (EBMUD) war formed in 1923, it soon began taking water from the distant Mokelumne River to meet the needs of the East Bay.

Before the formation of the EBMUD, however, only the local water sources were used to supply Berkeley and the East Bay with water. Beginning in the 1860's, a series of privately owned companies utilized these sources to sell water to the region. The purpose of this paper is to examine the history of these early companies. The utilities will be studied separately and in chronological order. It is useful to examine the history of these companies not only because it is interesting in and of itself, but also because it provides a helpful context in which to examine the nature and origin of Berkeley's present-day water system.

The College Water Company

When Europeans first settled the area now known as Berkeley in the late 18th and early 19th centuries they found more than enough water to meet their needs. There was no incentive to form a water company, as it was easier and far less expensive simply to dig a well or take water from a local creek. It was not until a few ambitious men contemplated founding the College of California in Berkeley that entrepreneurs contemplated the water situation in Berkeley. In fact, the Board of Trustees seriously thought about building elsewhere because they considered the creek at the site chosen for the college an inadequate year-round source of fresh water. The Trustees liked the Berkeley site so much, however, that they did extensive tests of the annual flow of the stream, which they called Strawberry Creek.

From the results of these tests, the Trustees decided that Strawberry Creek could supply the college with enough water, but only if a reservoir was built in the hills above the campus to capture and store the winter runoff for use during the dry summer. In order to build this reservoir, and to supply the campus and nearby residents with water, the Board of Trustees organized themselves into Berkeley's first water company--the College Water Company (Willey, 1882).

By 1867, the fledgling company had already built a small reservoir located at the foot of what is now Panoramic Way, near Memorial Stadium. The brick structure took water from the creek by means of a flume and had a capacity of 300,000 gallons. The construction of even the small reservoir attracted potential lot buyers to the campus site, especially after the company held an exhibition at which a geyser of water was shot 75 feet in the air to display the strength of the new system (Willey, 1882).

The College Water Company also had plans for building another, larger reservoir, downslope from the first one, into which water from both Wildcat and San Pablo creeks would be diverted. The structure was never built, however, because all of the college's property, including the water works, was transferred to state ownership when the University of California was formed. The state apparently sold water to the local residents for several years using the name "University Water Company" (Ferrier, 1933). Around 1975 the state sold the utility to H.B. Berryman and F. Chappelet, who then formed the Berkeley Real Estate and Water Works Company (Pettitt, 1976).

The Berkeley Water Works

The company that Berryman and Chappelet purchased was small and in need of expansion, due in part to the commencement of classes at the Berkeley campus in 1873. Soon after the company connected its pipes to the University it had to augment the supply with water from a stream in the vicinity of the old coal mine, located near the present-day site of the Hearst Mining Building. Because further expansion was needed, the firm announced a plan to put tunnels in the hills near Wildcat Creek; it is not known if these tunnels were actually built (Ferrier, 1933).

Only a year after it was established, the utility reorganized and began calling itself the Berkeley Water Works Company (East Bay Water Co., 1917). Soon after that, Berryman bought all of his partner's stock, and opened a new office in Berkeley (Pettitt, 1973). Finding the company's water supply again insufficient, Berryman built Berryman Reservoir in north Berkeley (Pettitt, 1973).

By June of 1883, there was again a water shortage in Berkeley (Ferrier, 1933), although the previous winter had not been particularly dry (see paper by Lawler, this report). The water company promptly declared that the residents had been wasteful, and therefore decided to ration the water. The sole stipulation of the rationing system, which was not at all stringent when compared to today's standards, was that residents south of Strawberry Creek could irrigate only on Mondays, while those north of the creek could do so only on Fridays. Still, people complained both about the insufficient water supply and about the rationing system (Ferrier, 1933). These complaints about the supply

continued to grow in number until about 1884, when the water works was bought by the Alameda Water Company (East Bay Water Company, 1917).

The Alameda Water Company

While sources differ as to the exact date, it is likely that the Alameda Water Company (AWC) was incorporated in the early 1860's. In all probability, however, the utility did not sell water to Berkeley until the 1880's when it began to compete with the Berkeley Water Works. With the purchase of the latter, the AWC found itself the owner of an outdated system which needed extensive work to keep up with the rapidly increasing population. The company's first project was to increase the supply by diverting water from Codornices Creek. The water was piped down the hill to a small wooden tank where it was distributed to nearby homes (East Bay Water Company, 1917).

Because a "small wooden tank" was hardly enough to substantially supplement the water supply, th firm also undertook a number of improvement projects. Many tunnels, wells and receivers were built, as well as two reservoirs (East Bay Water Company, 1917). The first reservoir was on a hill, just south of the California Institute for the Deaf and Blind, and had a capacity of 2,500,000 gallons (Elliott, 18_?_; Ferrier, 1933). The water was piped through a 3,000 foot-long tunnel to the reservo where it was shot up in a column 60 feet high (Figure 1). The company's second reservoir (Figure 2), located upslope from Berryman reservoir, was larger than the first, with a capacity of 23,000,000 gallons (Elliott, 18_?_; Ferrier, 1933).

For some time following the construction of these two structures, Berkeley experienced no water shortages. This was due in part to the unusually high rainfall in the years between 1889 and 1897 (see paper by Lawler, this report), although there is no doubt that expansion of the water works was also a factor.

The system was expanded at considerable expense, however, and many felt that all of the costs ha been passed on to the consumers. Although some people argued that the high costs of construction, al with the relatively small number of Berkeley residents, inevitably led to higher prices, and that the good quality of the water justified the additional costs, others felt that the rates were unreasonabl high (The City Argus, 1889). Some residents, in retaliation, left their sprinklers on all night. Si water was unmetered until 1900, residents could do this without being charged; fines could be levied only if consumers were actually caught wasting the water (Pettitt, 1973).

By 1898, Berkeley residents could no longer afford to waste water, however, for in that year another drought occurred. The chief cause of the water shortage was the limited water system; the reservoirs and other storage facilities could store the runoff from only a single winter's precipitation. Because there was no provision for storing the rainfall for more than a year, a single dry winter caused a water shortage, while two consecutive dry years caused a severe one. The drought of 1897 brought about a need for water rationing even though the previous eight winters had been unusually wet (Lawler, this report). Therefore, the Berkeley City Council voted to implement a

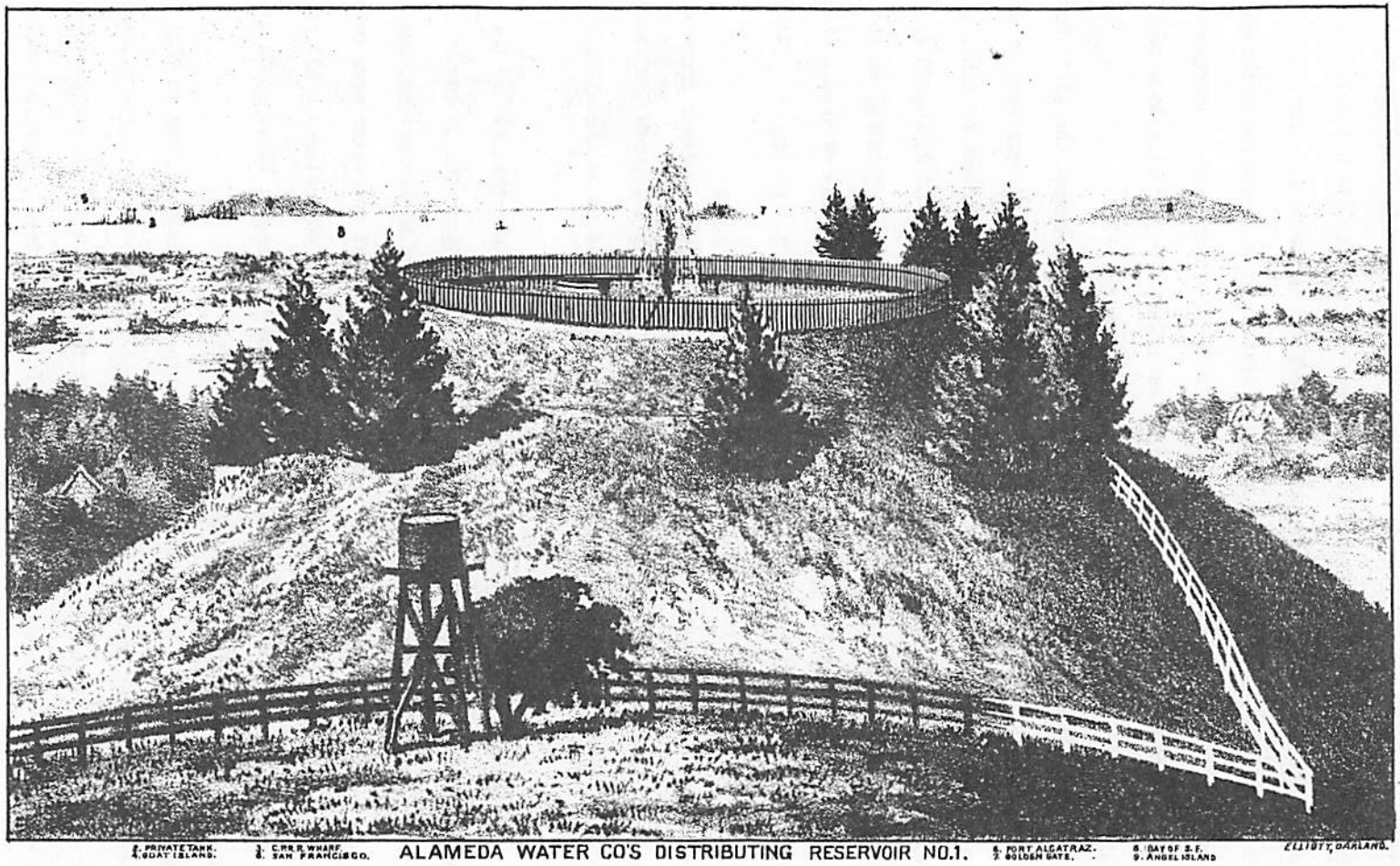

Figure 1. The Alameda Water Company Reservoir behind the California School for the Deaf and Blind

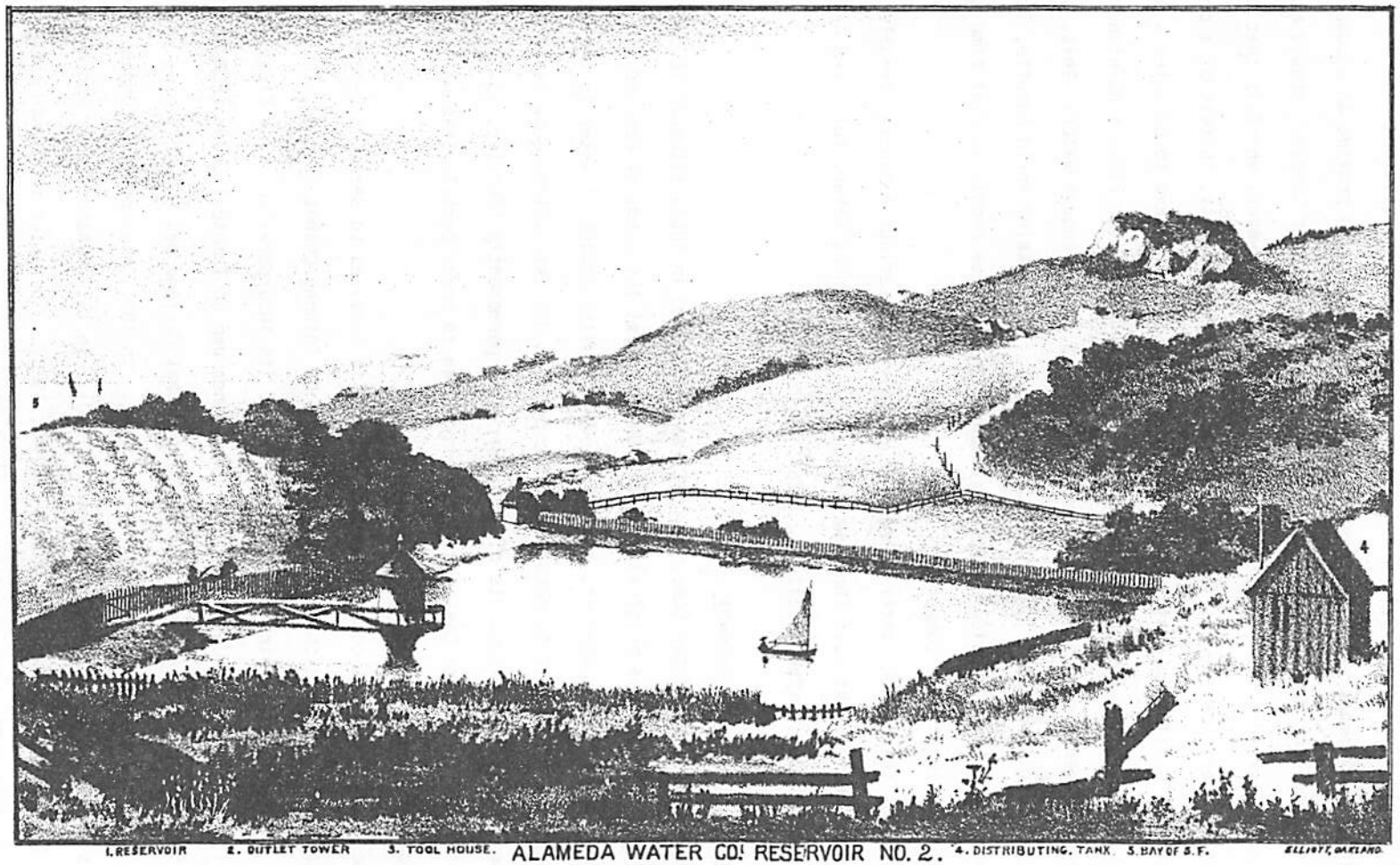

Figure 2. Alameda Water Company Reservoir in North Berkeley.

rationing system that outlawed the use of company water for the irrigation of gardens (Pettitt, 1976). This measure was considered extreme by residents of a city that was noted for its many gardens (The Berkeley World Gazette, 1899). The decision was thus quickly repealed.

Since the Alameda Water Company did not seem to be able to provide an adequate water supply, some citizens felt that another company, the Contra Costa Water Company, should extend its pipes to Berkeley (Ferrier, 1933). There were other residents, however, who felt that the solution to Berkeley's water shortage was to have a municipally owned utility, instead of a privately owned one. University of California Professor Carl Plehn, in a speech he gave to Berkeley's Good Government Club, advised that the city buy its own water works. It was Professor Plehn's opinion that private companies charged higher prices and could not always supply enough water. This, he stated, hindered industrial development and lowered property values (The Berkeley World Gazette, 1899). Although the professor's point was considered valid by many citizens, few people at that time seriously considered forming a public utility company.

By 1900, the Alameda WAter Company found itself in serious financial trouble and was subsequently reorganized to form the East Shore Water Company. Six months later, this firm was bought by the Contra Costa Water Company (Pettitt, 1976).

The Contra Costa Water Company

The Contra Costa Water Company (CCWC) was organized in 1866, although it did not serve Berkeley until 1900, since it was originally established to meet the needs of Oakland. During the Berkeley water shortage of 1898, however, the CCWC sold a limited amount of water to the AWC. Because the former company had access to more water sources than did the latter, some Berkeley residents urged that the Oakland firm extend its pipes to Berkeley permanently (Ferrier, 1933). Not long after this, in 1900, the Contra Costa Water Company began to serve Berkeley, as well as Oakland (East Bay Water Company, 1917).

The CCWC thought it could afford to extend its services to Berkeley because it had control over more local water sources than the AWC. Founded by Anthony Chabot in 1866, the Contra Costa Water Company built two reservoirs within ten years of its incorporation. The first, in 1867, was Lake Temescal, formed by the construction of an earthen dam on Temescal Creek (EDMUD, 1973). Two years after the completion of the dam Chabot boasted that Oakland had enough stored water to last two years, even if the population doubled within that time. In 1871, however, the company had to sink artesian wells to increase the water supply (Noble, 1970). In 1875, Chabot built another dam, this time on San Leandro Creek, to form Lake Chabot (EBMUD, 1973). The water from both these reservoirs went untreated until 1890, when the firm finally built a filter plant.

Despite this seeming overabundance of water, the CCWC could not supply the vast quantities of pure water that Berkeley had hoped for. To the contrary, there were soon complaints about the rates and quality of the water, as well as about the quantity of water supplied.

It had been known that the CCWC's water was somewhat polluted since 1895, when it was tested, along with that of a competing firm, the Oakland Water Company (Bowhill, 1895). The results of the tests, which were compiled in a report, may have been somewhat slanted towards the latter firm, since they showed this company's water to be almost perfectly pure, while the CCWC's was found to be "filthy." There is nevertheless little doubt that the CCWC's water was at least slightly polluted. The water that Berkeley received from this company in 1900 was therefore less pure than the city had hoped it would be.

Berkeley citizens also had reason to complain about the quantity of water that they received, for the CCWC discovered that it had perhaps overextended itself. As early as 1904, the company was considering five proposals to bring in water from outside the Bay Area. One of these suggesting using the Mokelumne River. None of the proposals was acted upon, however, for the firm favored the further development of local water sources. The company actually did little to increase the water supply, however (Noble, 1970).

Because there were so many complaints about the CCWC's service, both Oakland and Berkeley separately considered starting public utility companies, but in both cases the issue was dropped (Noble, 1970). Berkeley considered spending five million dollars to build a dam and reservoir on Pinole Creek but then abandoned the idea when it was realized that the project would only provide a short-term solution to the city's water problems (Pettitt, 1976). In any event, the CCWC managed to provide the East Bay cities with water only until 1907, when it was bought by the newly-formed People's Water Company (East Bay Water Company, 1917).

The People's Water Company

The People's Water Company (PWC), which was formed after the 1906 earthquake, faced more major problems than any of its predecessors. First and foremost, the new firm inherited a system that was badly outdated. In Berkeley, for example, the water mains were, on the average, smaller in diameter than those used in most other cities (Berkeley Civic Bulletin, 1915). Fifty percent of the mains were less than four inches in diameter and only twenty percent had a diameter greater than six inches. This not only hindered industrial use of the water, but also represented a fire risk because mains less than four inches are not adequate for fire protection (Berkeley Civic Bulletin, 1915).

The aging water system was only one of the problems that the new company had to contend with, however. The other problem was the massive increase in the population of the East Bay that occurred after the great earthquake. The population of Oakland more than doubled within several years after the earthquake, and other East Bay cities experienced a similar burgeoning of their populations (EBMUD, 1973). This sudden increase further strained an already inadequate system. The old system had to be expanded as rapidly as possible. Shortly after the company was formed, therefore, it began the construction of the 14-acre Central Reservoir in east Oakland.

In 1910, the utility provided the East Bay with approximately 19.5 million gallons per day (MGD) (Dockweiler, 1912). Its goal, however, was to provide 37 MGD, which, according to A.L. Adams in a 1908 report, was the maximum amount of water that local sources could provide if fully developed (Berkeley Civic Bulletin, 1913). Adams suggested that dams be built on a number of the local creeks, including San Pablo Creek, Bolinger Creek, Los Trampas Creek, and San Leandron Creek above Lake Chabot (Berkeley Civic Bulletin, 1913). The water company, however, actually built none of these dams, even though it did increase its use of artesian wells at San Pablo. This water was sent primarily to Berkeley (Noble, 1970).

Although these wells did slightly increase the amount of water that was supplied to Berkeley, they did nothing to decrease what many people felt were excessively high water rates for an insufficient supply. In 1911, therefore, the City of Berkeley ordered a huge rate reduction due the poor service the City felt it was receiving. The water company then sued the City, prompting Berkeley to drop its complaints (Noble, 1970).

Finally, the firm began to look at sources of water outside the East Bay as a possible solution to the perennial shortage. A number of rivers were considered, including the Tuolumne, Eel, McCloud, Feather, Yuba, Stanislaus and Mokelumne. All of the rivers with the exception of the Tuolumne were ruled out. None of the rivers, however were ever seriously considered by the PWC as a possible source of water for the East Bay. Instead, the firm built a few more pumping plants and increased its use of ground water (East Bay Water Company, 1917). Little more than ten years after its formation, the PWC was absorbed by the East Bay Water Company (East Bay Water Company, 1917).

The East Bay Water Company

Soon after the formation of the East Bay Water Company (EBWC) in 1916, the new utility began construction of San Pablo Dam (EBMUD, 1973). The dam would take four years to build, however, and in the meantime, the water shortage was becoming worse. This was particularly so during the relatively dry winters of 1916-17 and 1917-18. The main effect of this dry spell was to make the shortcomings of the water system more apparent. Lake Chabot became so low and so muddy that the water wouldn't go through the filters (Noble, 1970).

In spite of the system's shortcomings, the EBWC did little but continue the construction of San Pablo Dam. Upon its completion in 1920, the reservoir could hold over thirteen billion gallons of water. Unfortunately, the local runoff was not sufficient to fill the reservoir, except in unusually wet years, and none of the years immediately following 1920 were unusually wet.

The company therefore began to consider other ways to further develop the system. In a report to the East Bay Cities Water Commission, engineer Harroun suggested that dams be built on Pinole and San Leandro Creeks. The report also stated that even if the local sources were fully developed, a new supply would be needed almost immediately; residents would merely increase consumption, the

report predicted, since they were already using less than they would have if water were readily available (Harroun, 1920). In another report, it was stated that, even with complete development, the local supply would be sufficient only until 1930 (Oakland Chamber of Commerce, 1923).

As it became apparent that the local supply would not last much longer, non-local sources of water were again studied. The Tuolumne River was chosen as the most economical source of water. Interestingly, the same study that recommended the development of the Tuolumne River also recommended the formation of a municipal utility district; the development of the Tuolumne, the report stated, would be too expensive for a private company to finance. This turned out to be true, because the EBWC found itself unable to attract investors, especially as the idea of a municipal utility district gained popularity. Finally, in 1921, the state legislature passed the Municipal Utility District Act of 1921, which allowed for the formation of a two-county utility district. Two years later, the East Bay Municipal Utility District was formed. It was perhaps not a moment too soon, for the ground water in the East Bay, which was providing a large percentage of the water supply, was beginning to fail (see paper by Romanucci, this report). In the ten years between 1923 and 1933, only two years had highe than average precipitation, which caused the water company to depend heavily on the ground water supply. Subsequently, the water table sank sometimes as much as twenty feet below sea level. This then increased the possibility of contamination of the entire ground water supply by intruding bay water (EBMUD, 1931).

Discussion

The formation of EBMUD ended the private water companies' monopoly of the water supply. Although the East Bay Water Company co-existed with the EAst Bay Municipal Utility District for a short time, it could never really compete with the district. The EBWC could not afford to finance the major water development project that was required to provide a solution to the water shortage in the East Bay. The new district, on the other hand, had 39 million dollars at its disposal to spend on just such a project (Davis, 1924). The district finally chose to develop the Mokelumne because it was relatively close to the East Bay, and would therefore be easier, cheaper and quicker to develop than any of the other rivers.

Although none of the private water companies which served Berkeley provided a consistent supply of clean water, they were a necessary prelude to the municipally-run water district that succeeded them. The private water companies sprouted up wherever there was enough water to sell, and usually before there were enough people to form a more economical publicly owned system. Furthermore, the placement of the water companies and their pipes affected the distribution of the residents; people and industries were more likely to settle in an area that was supplied with water by a water company. It was only when so many people settled in such an area that the private companies could no longer provide enough water, and a publicly owned company became more practical.

In spite of the fact that it will never again be economical for a private water company to sell water to Berkeley, the history of those private firms is still useful to study. Not only are their histories interesting, but they also can be of help in understanding the nature and origin of the present system. The private companies may no longer exist, but they have left their marks on the present system and are therefore an integral part of the study of the current water supply.

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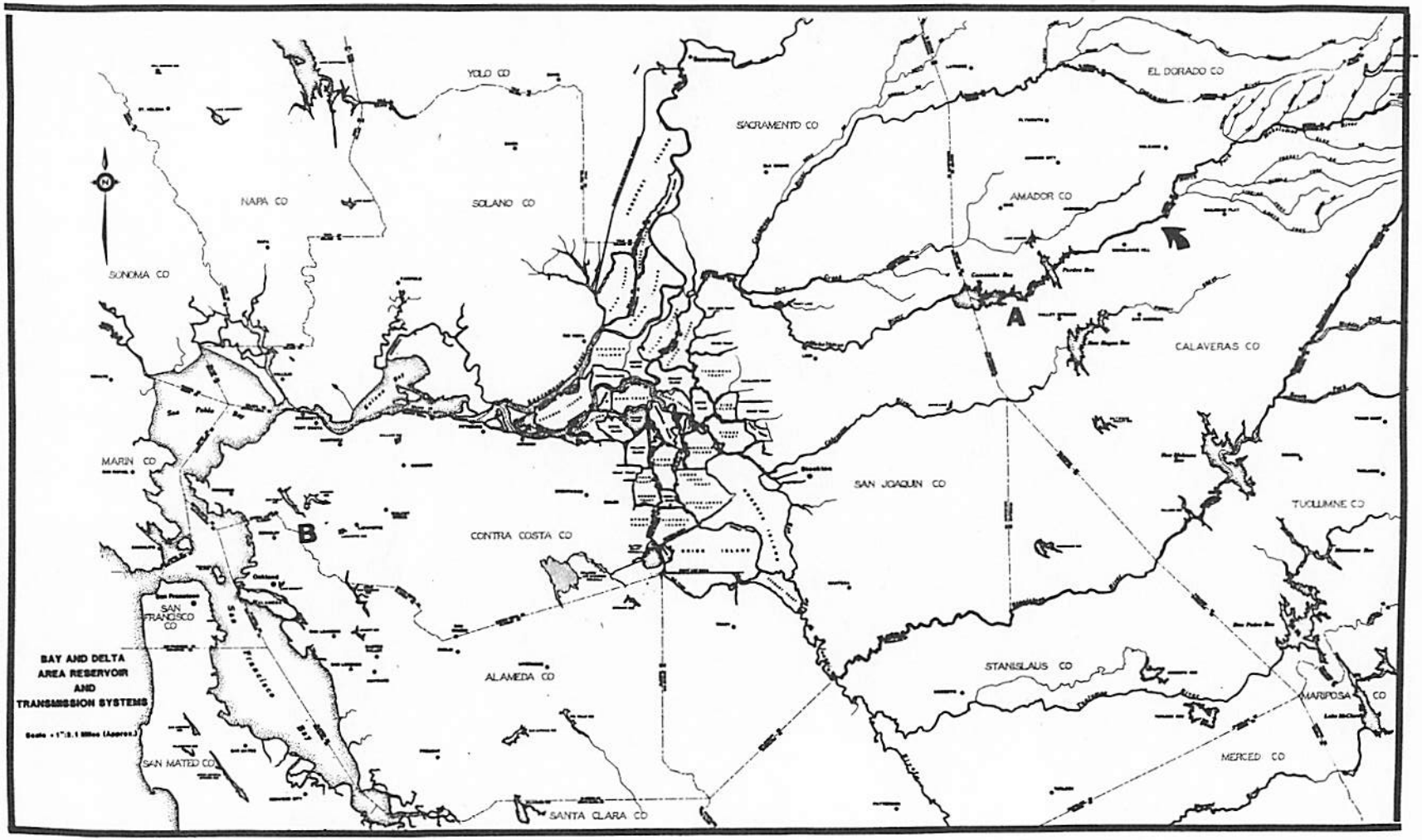

Map of central California showing location of Mokelumne River ( ), Camanche and Pardee Reservoirs (A) and local EBMUD reservoirs (B).