

STATE OF CALIFORNIA

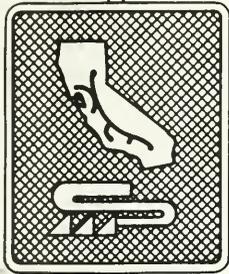
The Resources Agency

Department of Water Resources

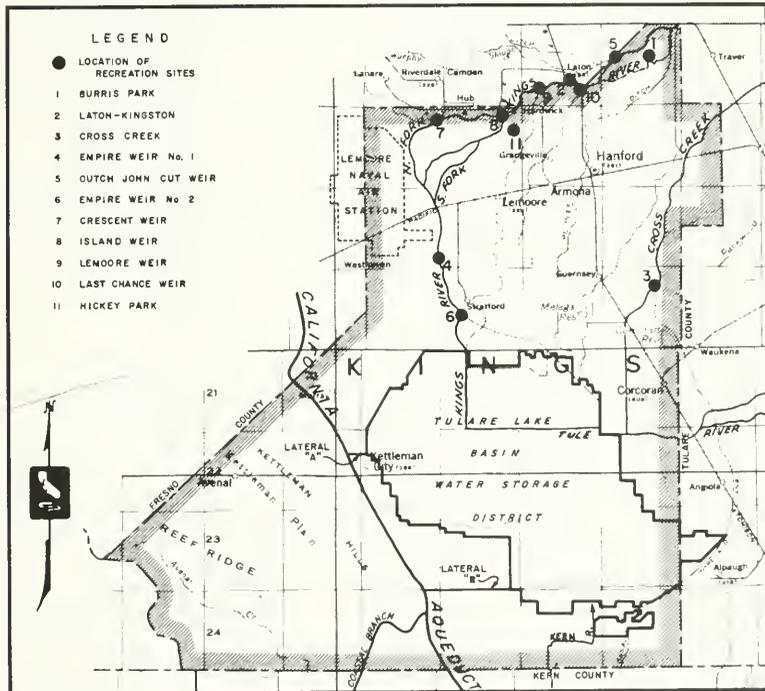
BULLETIN No. 119-28

FEASIBILITY OF SERVING KINGS COUNTY

FROM THE STATE WATER PROJECT



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State of California

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Department of Water Resources

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FOREWORD

Before executing a contract to supply an agency with water from the State Water Project, the Department of Water Resources makes a study of the agency and the area encompassed by it to determine the propriety of entering into the contract. Each study is made to determine (1) the future need for a supplemental water supply, (2) the legal ability of the agency to enter into a water supply contract with the State, (3) the engineering feasibility of providing the proposed water service, and (4) the financial ability of the agency to contract for a water supply from the State Water Project.

ERRATA SHEET

Bulletin No. 119-28, "Feasibility of Serving Kings County
from the State Water Project"

Please note the following corrections:

1. Page 14, second paragraph, last sentence, Chapter V should read Chapter VI.
2. Page 17, second paragraph, third sentence, Chapter V should read Chapter VI.
3. Page 23, first paragraph, second sentence, Chapter II should read Chapter III.
4. Page 29, second paragraph on right hand side, first sentence, Chapter II should read Chapter III.

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The results of these studies are described in a series of bulletins published by the Department of Water Resources. This bulletin, one of the series, describes the study that led to the signing of a contract with Kings County on August 31, 1967.

William R. Gianelli

William R. Gianelli, Director
Department of Water Resources
The Resources Agency
State of California
June 28, 1968

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ABSTRACT

A contract, signed August 31, 1967, between Kings County and the State of California calls for the delivery of 4,000 acre-feet of water annually from the State Water Project. The water is to be used for recreation parks. Ponds will be maintained at parks to be developed mainly on the Kings River. Water will be delivered from the California Aqueduct to the Tulare Lake Basin Water Storage District in exchange for release to Kings County of Kings River water controlled by the District. An investigation by the Department of Water Resources showed that the purchase of water was economically justified and financially feasible. Maps show the park sites.

CHAPTER I. SUMMARY AND CONCLUSIONS

Kings County began negotiations on July 6, 1965 to obtain a recreation water supply from the State Water Project and signed a contract for such a supply on August 31, 1967. Provisions of the Government Code and the Water Code authorize the County to enter into a contract with the State and to levy a tax or assessment to make payments required by such a contract.

The County plans to enhance the recreation value of nine ponds formed behind diversion weirs on the Kings River by providing water to maintain the ponds at relatively stable levels and by providing park facilities adjacent to the ponds. The County also plans to improve two existing county parks, Burris and Hickey, by the addition of small ponds. The recreation plan is set forth in the County's "Feasibility Report, Development of Recreation Sites for Use of 4,000 Acre Feet of Water". Since there is no practical way of conveying water from the California Aqueduct to the park sites, the County entered into an agreement with Tulare Lake Basin Water Storage District, a state water service contractor and a holder of rights to Kings River water, to exchange the County's state water for the District's Kings River water. The County also entered into two agreements with the weir owners concerning the use and operation of their weirs. The County plans to negotiate additional agreements with other owners. The Kings County recreation plan has been approved by the Kings County Water Commission.

The maximum annual water requirement for the recreation plan is estimated by the County to be 4,000 acre-feet.

According to the recreation plan, the County intends to develop the parks over a 20-year buildup period beginning in 1968. The total capacity of

the proposed parks, excluding Hickey Park, is estimated to be 321,000 visitor-days in 1970, 477,600 in 1980, and 588,000 in 1990, the fully developed capacity. The potential recreation demand at the parks is estimated to exceed the capacity by about three to one at all times. The capacity, therefore, will limit the use. It is estimated that, after each park is constructed, a 3-year period will be required for the use of each park to reach its capacity. The plan indicates that all parks will be constructed by 1985, and it is expected that full use will occur by 1987, when the capacity of 588,000 visitor-days is reached.

The estimated cost of the recreation plan consists of the capital cost for land and construction, the cost of replacing facilities, the continuing operation and maintenance cost of the parks, and the cost for water service from the State Water Project. The 1968 present worth of the costs for the period 1968-2035 is estimated to be \$4,830,000. The benefits to be derived from the recreation plan are estimated to vary from \$1.45 to \$1.70 per visitor-day among the proposed parks and to have a 1968 present worth of about \$17,000,000. The resulting benefit-cost ratio is 3.5 to 1 for the total park development.

Although the County's method of collection of funds for payment of costs of the recreation plan is unknown, a financial analysis indicates that the costs for development of parks and purchase of water in accordance with the plan could be met annually by ad valorem taxation at reasonable rates. With the exception of 1968 and 1969, when the tax rates would be \$0.12 and \$0.09, respectively, the total annual costs for the plan would be met by a tax rate of \$0.07, or less, per \$100 of assessed value each year of the repayment period 1968-2035.

The County's assessed valuation in 1965 was \$145,600,000. The bonded indebtedness at that time was about \$17,000,000, or about 12 percent of the assessed valuation.

It is believed that Kings County is in good financial condition and will be able to pay the costs for the County's recreation plan, including the cost of water.

Conclusions

1. The Kings County recreation plan, which includes a maximum annual water requirement of 4,000 acre-feet, is reasonable.

2. The overall benefit-cost ratio of 3.5 to 1 shows a strong economic justification for the proposed park development (and for the water supply contract).

3. The County has the legal ability to enter into the water service contract with the State and will not be unduly burdened by its obligation to pay the costs for water service from the State Water Project during the project repayment period.

4. The State of California has the necessary water supply and the authority to enter into the contract with Kings County, which was signed August 31, 1967, for the service of a maximum annual entitlement of 4,000 acre-feet of water.

CHAPTER II. BACKGROUND

On July 6, 1965, the Kings County Board of Supervisors requested the County Counsel to notify the State of California, through the Department of Water Resources, of the County's interest in obtaining a supply of water from the State. Following several meetings and an exchange of correspondence, the Board on August 17, 1965 adopted Resolution 65-83 declaring its intention to negotiate a contract for a water supply of 5,000 acre-feet annually from the State Water Project for recreation.

Upon the recommendation of the Kings County Water Commission, the Board of Supervisors decided to reduce the amount of water and on August 30, 1965 directed the County Counsel to negotiate a contract having a maximum annual entitlement of 4,000 acre-feet.

The Director of Water Resources, by letter dated December 15, 1965, notified the Kings County Board of Supervisors that 4,000 acre-feet of the remaining uncontracted minimum project yield had been allocated to Kings County for recreation. This step is especially significant when it is recognized that this is the first contract to be negotiated which involves the sale of water from the State Water Project solely for recreation. The water will be used primarily to maintain pools along the Kings River.

The Kings County Planning Director transmitted to the Department on June 1, 1966 the "Feasibility Report, Development of Recreation Sites for Use of 4,000 Acre Feet of Water" dated May 1966 to support the County's negotiation of a water supply contract. The report describes the County's recreation plan for park development which would utilize water from the State Water Project.

A water supply contract between the State of California, Department of Water Resources, and the County of Kings for

a maximum annual entitlement of 4,000 acre-feet from the State Water Project was signed on August 31, 1967

Kings County

Kings County is in the south-central portion of the San Joaquin Valley.

In 1964, 95 percent of the 892,000 acres of land in Kings County was privately owned, and of the total, 506,528 acres were farmed.

The population of Kings County increased from 49,954 in 1960 to an estimated 68,100 in 1966. The population is expected to increase to 70,000 by 1970, 110,000 by 1980, and 170,000 by 1990.

Kings County is among the top 20 agricultural counties in the United States despite its relatively small size. Principal crops are long-staple premium cotton, dairy products, feed grains, and fruit.

Authority of County to Contract

Under Title 3 of the Government Code the County is authorized to make contracts and purchase, manage, sell, lease and otherwise dispose of property, both real and personal, as the interests of its inhabitants require (Government Code Section 23004). The County may acquire, construct and manage a water system and all works necessary for supplying water for the use of the County and its inhabitants (Government Code 25692). Specific authority to contract with the State for a water supply is not expressly set forth in the Government Code provisions. However, under Part 3, Division 6 of the Water Code, the County is a state agency (Water Code Section 1102) and as such is authorized to enter into contracts with the State for the

purchase of water (Water Code Sections 11625 and 11661), to comply with the terms, provisions and conditions of any such contract (Water Code Sections 11662 and 11664), and to levy a tax or assessment to provide for all current payments under any such contract (Water Code Section 11652).

Communities

Hanford, the county seat and also the largest city in Kings County, is the hub of activity in the County. The population was 10,100 in 1960 and was estimated to be 14,500 in 1967. The city's proximity to Lemoore Naval Air Station and the buildup of new industry, such as the Armstrong Rubber Company plant, indicate that the city will continue to lead the County in population growth. The Kings County General Plan, adopted by the County Planning Commission in 1965, indicates that most of the growth since 1960 has occurred in the Hanford and Lemoore areas and Lemoore Naval Air Station.

Lemoore is a farm supply and agricultural processing center in an area of generally small farms. The population was 4,500 in 1967. Construction of the Air Station and reconstruction of State Highways 198 and 41 have provided the impetus for new developments in the area. The approximate population of 9,000 at the Air Station, including dependents, is not expected to increase greatly during the next several years.

Corcoran is surrounded by large, sparsely populated farms. According to the General Plan, "...the establishment of some new agricultural processing plants seems likely, but there is slight prospect of rapid population increase. The 1980 high population forecast for Corcoran is 15,000 persons." The 1965 population was 5,900.

Armona was formerly the center of fruit packing in the County. At present, the

principal industry of this town of 1,600 (1967) is a textile mill which produces carpet yarns.

Stratford is primarily a storage and shipping point for grain and cotton and a center for agricultural implement sales and servicing. The 1967 population was 750.

Avenal's economy has been based almost entirely on the oil industry; accordingly, any marked fluctuation in oil production will directly affect the town. The 1967 population was 3,200. According to the General Plan, the area has witnessed a recent upturn in exploration and drilling; before this, a decline in drilling and production caused a drop in population and the closing of some businesses.

Topography

Most of Kings County is nearly level farming land, with elevations varying between 200 and 300 feet above sea level. The western part of the County includes a portion of the Coast Range mountains, where some elevations are over 3,000 feet above sea level.

The outstanding topographic feature is Tulare Lake Basin in the south-central part of the County. This basin is the natural drainage terminus for the Kern, Tule, Kaweah and Kings Rivers. These streams originate in the Sierra Nevada to the east and flow generally westerly across the floor of the San Joaquin Valley. The Kern River first drains toward the Buena Vista Lake bed, and the overflow then drains northwesterly to the Tulare Lake Basin. The Tule, Kaweah (Cross Creek) and Kings Rivers flow directly into the basin.

When the first settlers came to this area, the basin was a huge lake, covering many hundreds of square miles. During the period 1947 to 1962, dams were constructed on the rivers: Isabella Dam on the Kern, Success Dam

on the Tule, Terminus Dam on the Kaweah, and Pine Flat Dam on the Kings. These dams control flood flows and have permitted nearly continuous farming on the lake bed.

Climate

The County's overall climate is characteristically sunny, dry and warm. Ninety percent of all precipitation falls during the six months from November through April. Annual precipitation in the County averages about six inches.

Summers are relatively cloudless, hot and dry. The July average daily maximum is about 99° Fahrenheit.

Winters are mild and semiarid, yet fairly humid. December and January are characterized by fog, mostly nocturnal, which prevails when moist air is trapped in the Valley by a high pressure system. In extreme cases, this fog may last continuously for two or three weeks. The January average daily minimum temperature is about 34° Fahrenheit. Severe freezes seldom occur, and occasionally there are years with no frost in warm areas of the County.

Recreation

During the hot summer months, local residents seek recreation areas near

water. Under current operating conditions, the Kings River is a flowing stream throughout the summer. Ponds are formed in the river at a number of locations behind weirs which provide head for irrigation water diversions. Various beaches at the ponds are used informally to a limited extent for picnics and general recreation when possible during the year.

At present, Kings County has two county parks, Burris and Hickey, which help to satisfy the demand for picnic-type recreation. They comprise 55 and 47 acres, respectively, and contain large trees, lawns, picnic tables, and barbecue pits. The Kings County Planning Department estimates that use of the two parks during 1965 was in excess of 90,000 visitor-days.

Water Supply Available From the State Water Project

Following the signing of the major contracts for the water supply from the State Water Project during the period 1960 through 1964 and an additional contract in 1965, ten more applications were considered for the remaining 23,600 acre-feet of the minimum annual project yield of 4,230,000 acre-feet. Among the allocations of this amount was 4,000 acre-feet for Kings County.

CHAPTER III. KINGS COUNTY RECREATION PLAN

Following is a description of the recreation plan set forth in the Kings County "Feasibility Report, Development of Recreation Sites for Use of 4,000 Acre Feet of Water" and a discussion of agreements necessary to the operation of the plan.

The Recreation Plan

A number of diversion weirs on the Kings River are owned and operated by canal companies and irrigation districts to divert water from the Kings River for irrigation. The ponds formed behind the weirs and the areas adjacent to the ponds are presently used to a limited extent on an informal basis by the general public for picnics and swimming. The primary factor limiting the recreation value of the ponds has been the frequent and wide fluctuation of water levels in the ponds.

The County plans to enhance the recreation value of nine of the ponds by maintaining the water at relatively stable levels during the recreation season and by providing park facilities adjacent to the ponds. Also, two existing county parks, Burriss and Hickey, will be improved by the addition of small ponds. The County plans to enter into agreements with several of the weir owners concerning the use and operation of their weirs. Under the agreements, the County would augment the water supplies to existing ponds during the recreation season, and the weir owners would maintain relatively stable and high water levels. The water supply augmentations required have been estimated by the County but will be firmred up by trial use of the facilities. After a period of experience, it is expected that the County and weir owners will modify the agreements as

TABLE 1
SCHEDULE OF PARK DEVELOPMENT AND WATER USE

Site	: Year of Start : of Park : Development	: Year : of First : Water Use
1. Burriss Park	1967 (Pond)	1968
2. Laton-Kingston Park (Kings County Portion)	1968	1969
3. Cross Creek Park	1969	1970
4. Empire Weir No. 1 Park	1973	1976
5. Dutch John Cut Weir Park	1976	1977
6. Empire Weir No. 2 Park	1977	1979
7. Crescent Weir Park	1979	1981
8. Island Weir Park	1980	1982
9. Lemoore Weir Park	1982	1984
10. Last Chance Weir Park	1984	1986
11. Hickey Park	1986 (Pond)	1987

required to maintain the proper flow of water from the ponds for agricultural use and to maintain the ponds at elevations desirable for recreation.

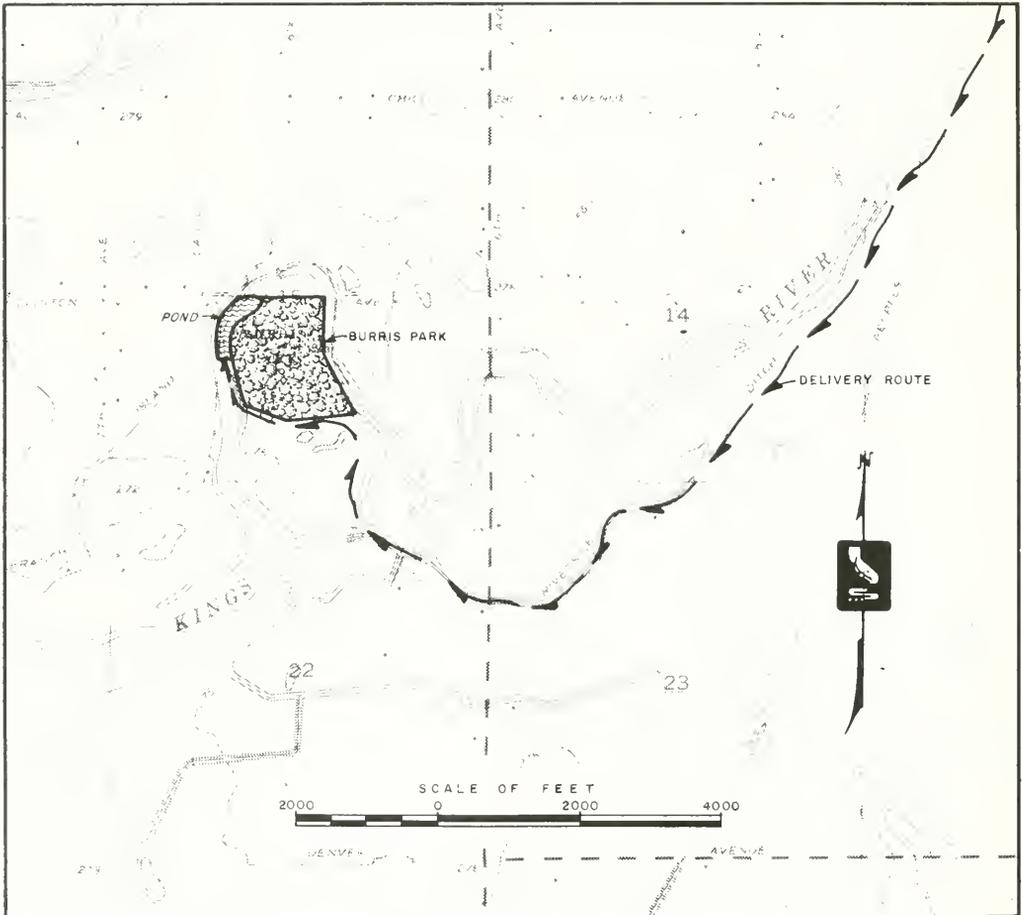
Kings County plans to develop the 11 parks during a 20-year buildup period starting in 1968. The 11 park sites are listed in the order of their proposed development in Table 1. Their locations are shown on the front cover.

The following descriptions and layouts of the various proposed parks are based on the Kings County feasibility report and subsequent field trips and discussions with county representatives. The layouts generally designate the park areas to be developed and the pond areas to be utilized, but they are not intended to represent boundaries of property to be acquired by the County.

Burris Park

The park is an existing county facility consisting of 55 acres in Section 15, T17S, R22E on the old Kings River channel not presently used to convey water at this point. It has a number of large valley oak trees which have been interplanted with other tree species and with turf. Present use of the park is estimated by the County to be 35,000 visitor-days per year. The

County proposes to develop a five-acre pond having a maximum depth of 12 feet and an average depth of 7 feet. It will be located along the west side of the park on the old Kings River channel. This pond would be developed to provide a swimming beach and fishing areas. Water would have to be delivered to Burris Park by Peoples Ditch and Riverside Ditch paralleling the old Kings River channel.



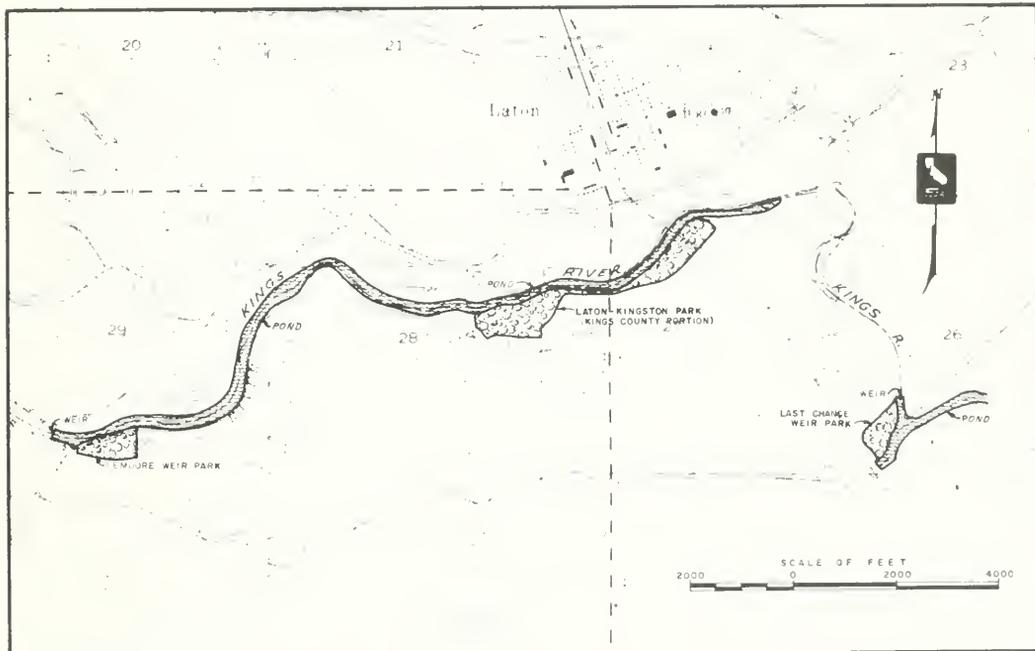
Laton-Kingston Park

The Laton-Kingston site comprises 52 acres and is located on the Kings River in Sections 27 and 28, T17S, R21E. This represents the Kings County portion of a planned joint regional park development with Fresno County. The park comprises a total of 200 acres in both counties. The planning for the park is currently being funded with monies from a grant under the State Park and Bond Act of 1964 and the Federal Land and Water Conservation Fund Act. The regional park would have a river frontage of approximately 6,000 feet on the Fresno County side and 4,500 feet on the Kings County side. Kings County proposes to develop and maintain a recreation pool, a swimming beach, family and group picnic areas, and a considerable area of open space. The park would also offer opportunities for fishing, wildlife observation, and hiking. The pool would

have an area of about 65 acres behind the existing Lemoore Weir approximately $1\frac{1}{2}$ miles downstream from the site. The pool would also serve the Lemoore Weir Park (described below).

Lemoore Weir Park

The Lemoore Weir Park site is on Kings River in Section 29, T17S, R21E adjacent to the same 65-acre impoundment as the Laton-Kingston site. It is one of the most attractive sites proposed. The area is covered with large, mature valley oaks which present a natural park-like appearance. This site occupies approximately 10 acres. The County proposes to provide picnic facilities and to construct the Kings View Trail adjacent to the Kings River between the Lemoore Weir and Laton-Kingston Parks. Lemoore Weir Park could also be used for fishing and wildlife observation.



Last Chance Weir Park

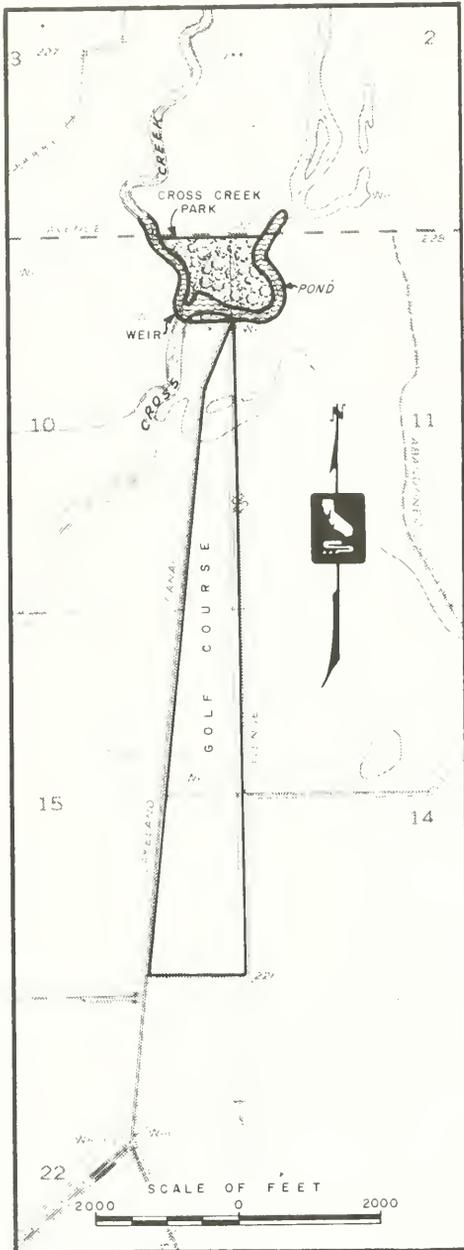
The site comprises approximately 10 acres in the northeastern portion of Kings County between the Kings County Country Club (private) and the Kings River channel in Section 26, T17S, R21E. The proposed park would have facilities for picnicking and would provide an opportunity for fishing. The County proposes to maintain a recreation pool having an area of approximately 8 acres, a maximum depth of 10 feet, and an average depth of 8 feet. The view of the Kings County Country Club and the presence of some large oak trees make this one of the more attractive of the proposed sites.

Cross Creek Park

The Cross Creek Park site is in the southeastern part of Kings County on Cross Creek in Sections 10 and 11, T20S, R22E. The proposed park would comprise about 40 acres adjacent to an existing Corcoran Irrigation District weir. The County proposes to maintain a recreation pool having an area of approximately 18 acres, a maximum depth of 10 feet, and an average depth of 8 feet. A possible addition to this proposal is the development of an 18-hole golf course which would increase the park acreage to approximately 80 acres. Family picnic areas would be provided immediately adjacent to the recreation pool. The pool could be used for fishing. Benefits and cost of the golf course are not included in the economic justification in Chapter V of this report.

Empire Weir No. 1 Park

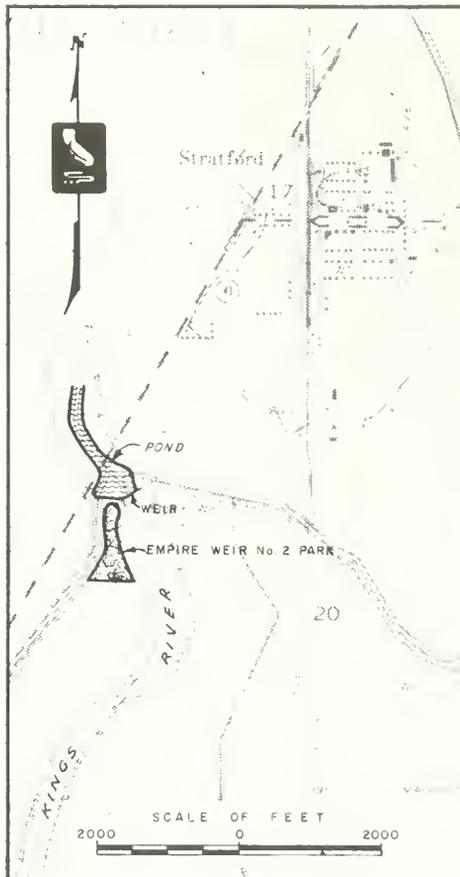
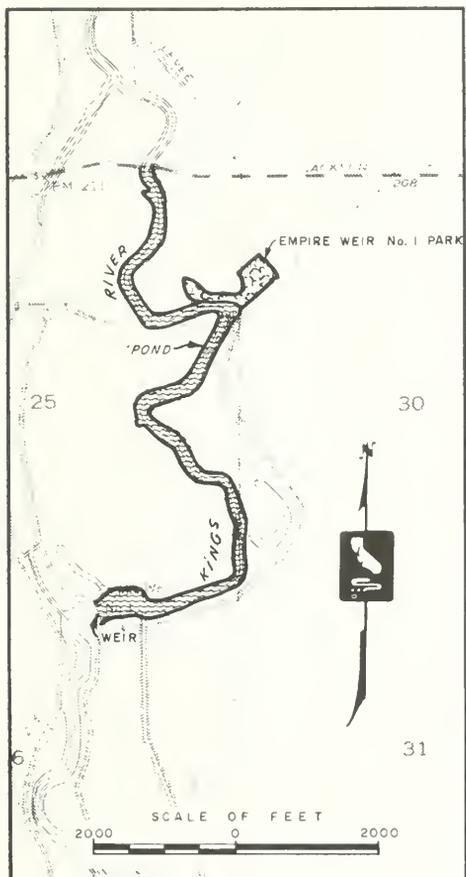
The Empire Weir No. 1 Park site is adjacent to the Kings River in Section 25, T19S, R19E and Section 30, T19S, R20E and comprises approximately 20 acres. An existing commercial development on the shore opposite the site

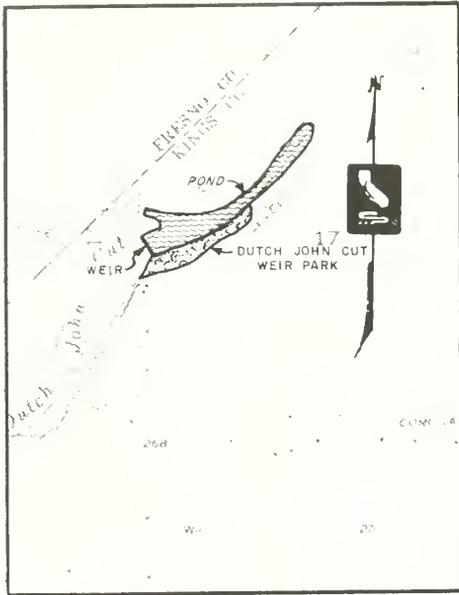


consists of a cafe and a boat and tackle rental concession. The County plans to enhance the recreation value of the area by maintaining the pool behind Empire Weir No. 1 so that it would have an area of approximately 30 acres, a maximum depth of 8 feet, and a minimum depth of 5 feet. Also planned is the provision of additional facilities for bathing, boating, water skiing, fishing, and wildlife observation.

Empire Weir No. 2 Park

The Empire Weir No. 2 Park site is adjacent to the Kings River in Sections 19 and 20, T20S, R20E at Highway 41 and is approximately one mile southwest of the town of Stratford. The site consists of approximately 10 acres. The County would provide park facilities and maintain a recreation pool having an area of 5 acres, a maximum depth of 8 feet, and an average depth of 6 feet. The park could also be used for fishing.



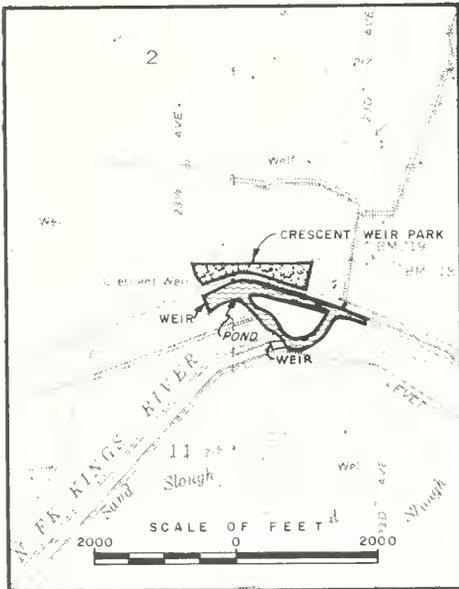


Dutch John Cut Weir Park

The Dutch John Cut Weir Park site is on Dutch John Cut in the northeastern portion of Kings County in Section 17, T17S, R22E and consists of approximately 10 acres of land. Dutch John Cut and a portion of Cole Slough comprise the main conveyance channel of the Kings River in this vicinity. The County proposes to provide picnic facilities and maintain a recreation pool on the main channel having an area of approximately 15 acres, a maximum depth of 10 feet, and an average depth of 8 feet. The park would also be usable for fishing.

Crescent Weir Park

The Crescent Weir Park site is adjacent to the North Fork Kings River in Section 11, T18S, R19E and comprises approximately 15 acres. The County proposes to provide facilities for picnicking and to maintain a recreation pool having an area of 10 acres, a maximum depth of 10 feet, and an average depth of 7 feet. The park could also be used for fishing.

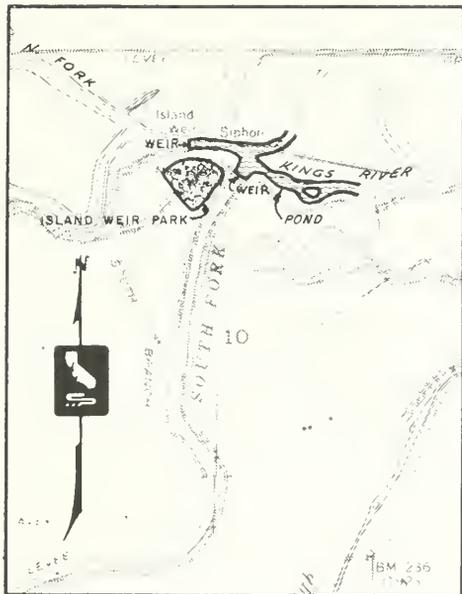


Island Weir Park

The Island Weir Park site is on the Kings River in Section 10, T18S, R20E and comprises approximately 15 acres of land adjacent to the existing Island Weir. The County proposes to develop picnic facilities and maintain a recreation pool having an area of approximately 10 acres, a maximum depth of 10 feet, and an average depth of 8 feet. The park could also be used for fishing.

Hickey Park

Hickey Park is an existing 47-acre county park which contains a number of large valley oak trees and is planted to turf. The park is in the northern portion of the County in Section 12, T18S, R20E. The County proposes to add

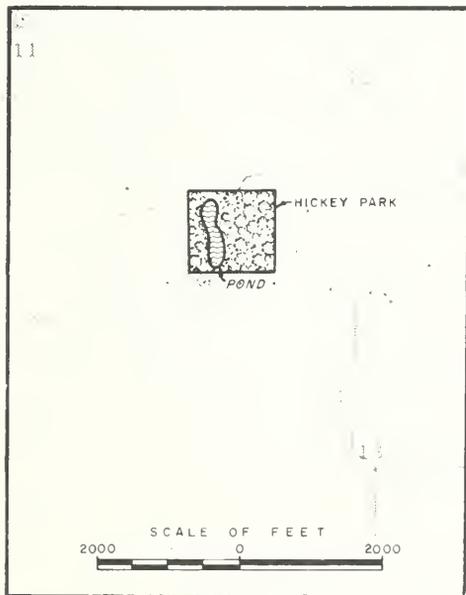


a small reflective pool, approximately two acres in size, which would enhance the recreation value of the park.

It is believed that addition of the reflective pool would not increase the number of visitors to the park but would increase their enjoyment of the park. Further, it is believed the benefits would exceed the capital and maintenance costs, and the proposal is therefore justified. In the determination of economic justification in Chapter V of this report, the costs associated with the proposal, which are small, are included but, because of the difficulty in fixing the value of the intangible benefits, the benefits have been assumed to be zero.

Local Agreements

All the recreation sites proposed for development by Kings County are either on the Kings River or nearby so that water supplies could be physically obtained from the River. The total flow of the Kings River, however, is used by agricultural users under prior water rights. The County, therefore, requested a water supply from the State Water Project for facilities of the County's recreation plan along the Kings River. Since there is no practical way of conveying water from the California Aqueduct to the sites, it was necessary for the County to enter into an exchange agreement to obtain Kings River water with an agency contracting for state water which has rights to Kings River water. As previously mentioned, it is also necessary that the County enter into agreements with weir owners for the use of weirs and ponds at the sites.



Most of the water users along the Kings River are members of the Kings River Water Association, formed for the purpose of maintaining and protecting their several and respective rights to the waters of the Kings River. The computed natural flow of the Kings River at Piedra

gaging station is divided among the members under terms of the "Agreement Supplementing and Amending Water Right Indenture dated May 3, 1927, and Administrative Agreement dated May 3, 1927, each as Amended and Supplemented June 1, 1949, Relating to Kings River Water Association", dated September 10, 1963, and diversion schedule attached thereto. The accounting of storage in Pine Flat Reservoir, releases from Pine Flat Reservoir, and headgate diversions to the members are administered by the Kings River Water Association Watermaster.

The Kings River Water Association has an agreement with the U. S. Bureau of Reclamation for use of storage space in Pine Flat Reservoir. Members of the Association may store water, within the limits of their allocated portions of the storage space, over a period of years depending on their needs. In determining the rates of diversion, each member shares the losses in river flow to his point of diversion.

Exchange Agreement

Tulare Lake Basin Water Storage District, a member unit of the Kings River Water Association, has the right to divert Kings River water and has been allocated storage space in Pine Flat Reservoir. The District also has a contract for water service from the State Water Project and is constructing facilities to convey water from the California Aqueduct to its existing distribution system. Kings County and the District signed an exchange agreement dated April 26, 1967 by which the County will exchange its state water for the District's

Kings River water. The District can take delivery of the County's water by the same means it will receive water under its contract with the State. Under terms of the agreement, Kings County would have its state contract water delivered to the District and would be entitled to an equal amount of the District's Kings River allocation up to the 4,000 acre-foot maximum annual contract entitlement and would share losses with users upstream from the various points of diversion in the same manner the District would. Kings County, using existing weir facilities, would divert, store, and use Kings River water at its proposed parks. The relationships between the District, the California Aqueduct, and the County's park sites are shown on the front cover. County water will be delivered to the District through Lateral A.

Facility Agreements

Kings County executed, on November 29, 1966, an agreement with the Lemoore Canal and Irrigation Company for the maintenance of a pond at Lemoore Weir. This is the pond to be used at both the Lemoore Weir Park and the Laton-Kingston Park. A similar agreement for the pond to be used at the Cross Creek Park was executed with the Corcoran Irrigation District on December 6, 1966.

The County has assured the Department that the remaining agreements for use of facilities of canal companies and irrigation districts required for other parks in the recreation plan will be obtained for the parks when necessary, as indicated in the schedule of park development shown in Table 1.

CHAPTER IV. ESTIMATED WATER REQUIREMENT FOR
THE KINGS COUNTY RECREATION PLAN

Kings County, in its report of May 1966, presented estimates of the required water at each of the 11 sites. These estimates were revised by the County in an addendum to the report, which was received on January 3, 1967.

The factors considered by the County in determining its water requirement include pond bank seepage losses, evaporation losses from the pond surfaces, water used for irrigation of the parks, volumes of water in ponds, and conveyance channel seepage losses.

An example of the application of these factors is shown in Table 2, which was derived from values in the reports.

The estimated annual water requirements given in the reports for each of the 11 sites is shown in Table 3.

The total of 4,565 acre-feet indicates a need greater than the base amount of 4,000 acre-feet in the County's water supply contract. The County indicates, however, the estimates are rough with respect to parks to be developed six or more years in the future and has rounded its maximum annual requirements to 4,000 acre-feet. It is believed this total is reasonable.

For the purpose of estimating cost distribution for each site in determining the economic justification of the proposed park development and water contract, the annual water requirement was adjusted as shown in Table 4.

TABLE 3
PARK DEVELOPMENT
ESTIMATED ANNUAL WATER REQUIREMENT

Site	: Acre-feet : of Water
1. Burris Park	293
2, 9. Laton-Kingston Park (Including Lemoore Weir Park)	923
3. Cross Creek Park	702
4. Empire Weir No. 1 Park	400
5. Dutch John Cut Weir Park	400
6. Empire Weir No. 2 Park	400
7. Crescent Weir Park	400
8. Island Weir Park	400
10. Last Chance Weir Park	400
11. Hickey Park	<u>247</u>
TOTAL	4,565

TABLE 4
PARK DEVELOPMENT
ADJUSTED ANNUAL WATER REQUIREMENT

Site	: Acre-feet : of Water
1. Burris Park	300
2, 9. Laton-Kingston Park (Including Lemoore Weir Park)	950
3. Cross Creek Park	700
4. Empire Weir No. 1 Park	300
5. Dutch John Cut Weir Park	300
6. Empire Weir No. 2 Park	300
7. Crescent Weir Park	300
8. Island Weir Park	300
10. Last Chance Weir Park	300
11. Hickey Park	<u>250</u>
TOTAL	4,000

TABLE 2

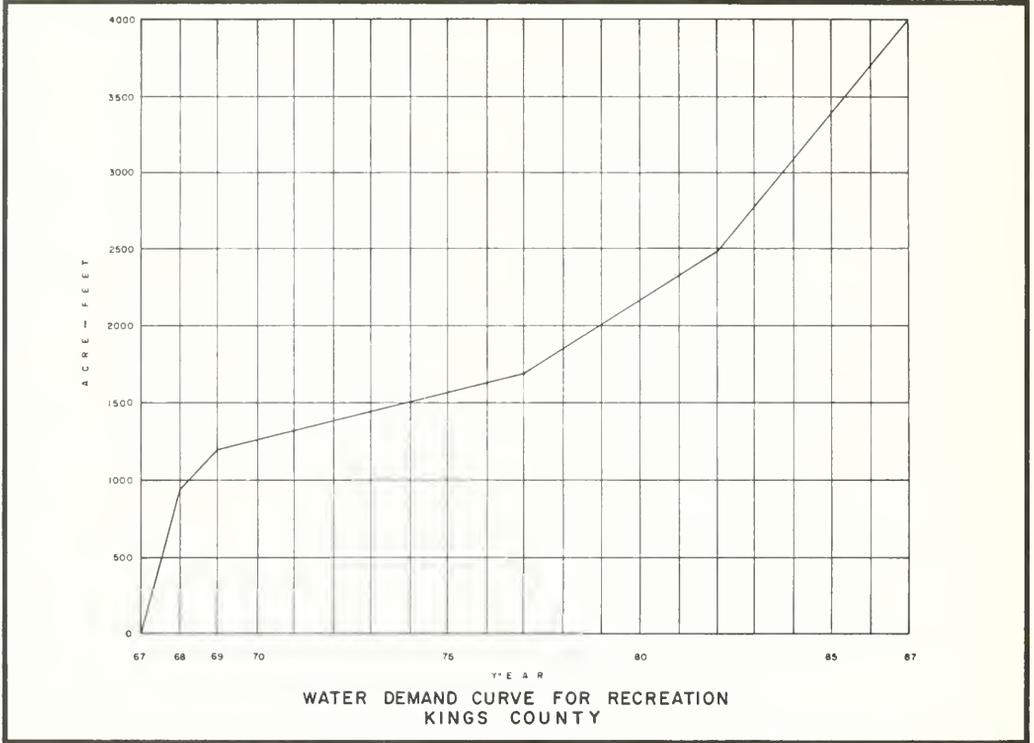
ESTIMATED ANNUAL WATER REQUIREMENT
FOR LATON-KINGSTON PARK (KINGS COUNTY PORTION)

Factors	: Acre-feet : of Water
Bank seepage losses and evaporation losses	365
Irrigation use	175
Pond volume	<u>170</u>
SUBTOTAL	710
Conveyance channel seepage losses	<u>213</u>
TOTAL	923

The distribution shown in Table 4 conforms to the "Water Demand Curve for Recreation in Kings County", submitted by the County on January 20, 1967 and

reproduced as Figure 1. The demand curve is the basis for the annual entitlements of Table A of the water supply contract.

FIGURE 1



CHAPTER V. POTENTIAL RECREATION DEMAND
AND ESTIMATED PARK USE

The potential recreation demand at the proposed parks was determined by the "comparable reservoir per capita demand" method. In this method, the per capita use rates for the population residing in successive travel-distance zones around an existing recreation facility comparable to the proposed facility are determined by analysis of data on use of the existing facility. These per capita use rates are applied to similar zones around the proposed facility to determine the potential demand for the facility. The comparable recreation development is chosen on the basis of similarity of topography, vegetative cover, access, water storage operation, and location with respect to population centers.

For the proposed Kings County parks, Yosemite Lake County Park in Merced County was chosen as the most nearly comparable facility. The 1960 per capita use rates for travel-distance zones around Yosemite Lake were:

Miles from lake:	0-10	10-20	20-50
Annual visitor-days per capita:	7.55	1.68	0.25

The 1960 use rates for Yosemite Lake were used to estimate the recreation demand in the area to be served by the proposed parks in 1970, 1980 and 1990. These values, determined without regard to the capacities of the parks, represent the potential demand of the total park development. Historic data in California indicate a consistent increase in per capita recreation demand with time, and an analysis of the factors affecting per capita recreation demand (disposable income, leisure time, mobility, etc.) indicate that this increase will continue into the foreseeable future. The 1960 Yosemite Lake values, however, were used for the future without modification. The potential demand estimates for the

Kings County parks are therefore believed to be quite conservative.

Estimates were made of the 1970, 1980 and 1990 population residing within the 0-10, 10-20 and 20-50 mile zones surrounding the proposed Kings County parks. The estimates were based on projections, listed in Table 5, of total county populations for the counties within which the zones are located.

In estimating the population within the mileage zones, it was necessary to make decisions as to which areas would continue to grow as urban communities and which would remain smaller agricultural towns. The proximity to main highways, the general nature of the surrounding communities or area, and the nearness to large metropolitan areas were considered in developing the estimates. The estimates are shown in Table 6.

The estimated potential recreation demand at the 11 Kings County parks and a summary of the recreation demand calculations are presented in Table 7. The potential demand is estimated to be about 1,000,000 visitor-days in 1970 and to increase to nearly 2,000,000 by 1990.

Park Capacities

The amount of recreation use of a park will be limited by its capacity to accommodate visitors or the potential recreation demand, whichever is smaller. Recreation capacity, expressed in annual visitor-days, depends on the usable land and water surface areas, the types of recreation activities which are accommodated, the ability of the site environment to withstand the erosive effects of recreation use, the number of recreation facilities provided, the seasonal variation in recreation use levels in the locality, and the intensity of recreation demand.

TABLE 5

COUNTY POPULATION PROJECTIONS

Year	County				
	Kings	Fresno	Madera	Tulare	Kern
1960*	49,954	365,945	40,500	168,403	291,984
1970	70,000	480,000	49,000	210,000	350,000
1980	110,000	680,000	65,000	255,000	450,000
1990	170,000	890,000	100,000	315,000	610,000
2000	220,000	---	---	---	---
2010	265,000	---	---	---	---
2020	350,000	---	---	---	---

* Census values.

TABLE 7

POTENTIAL RECREATION DEMAND
AT THE 11 KINGS COUNTY PARKS

Year	Mileage Zone ^{1/}	Population ^{2/}	Per Capita Demand ^{3/}	Recreation Demand ^{4/}
1970	0-10	78,000	7.55	589,000
	10-20	172,000	1.68	289,000
	20-50	516,000	0.25	<u>129,000</u>
	Total			1,007,000
1980	0-10	114,000	7.55	861,000
	10-20	205,000	1.68	344,000
	20-50	654,000	0.25	<u>164,000</u>
	Total			1,369,000
1990	0-10	159,000	7.55	1,200,000
	10-20	255,000	1.68	428,000
	20-50	890,000	0.25	<u>208,000</u>
	Total			1,836,000

^{1/} The number of miles persons seeking recreation would be required to travel to enjoy a facility of the Kings County's recreation development.^{2/} Number of persons estimated to reside within the mileage zones.^{3/} The per capita demand represents the number of annual visits to a recreation site made per person residing in a given mileage zone. The figures used were derived from records at the Yosemite Lake County Park for the year 1960.^{4/} The recreation demand is established by multiplying the estimated population by the per capita demand in the respective mileage zones and is numbered in visitor-days per year.

TABLE 6

ESTIMATED POPULATION WITHIN MILEAGE
ZONES SURROUNDING KINGS COUNTY PARKS

Mileage Zone	Census County Divisions	Population		
		1970	1980	1990
0-10	Kings	51,000	83,000	125,000
	Fresno	<u>27,000</u>	<u>31,000</u>	<u>34,000</u>
	Subtotal	78,000	114,000	159,000
10-20	Kings	19,000	27,000	45,000
	Fresno	61,000	65,000	69,000
	Tulare	<u>92,000</u>	<u>113,000</u>	<u>141,000</u>
	Subtotal	172,000	205,000	255,000
20-50 ^{1/}	Fresno	340,000	454,000	597,000
	Madera	52,000	59,000	49,000
	Tulare	96,000	104,000	118,000
	Kern	<u>48,000</u>	<u>57,000</u>	<u>66,000</u>
	Subtotal	516,000	654,000	830,000
	TOTAL	766,000	973,000	1,244,000

^{1/} Areas in Kings County which lie within the 20-50 mile zone have been included in the 10-20 mile zone because of the sparse population outside the 10-20 mile zone.

TABLE 8

RECREATION CAPACITIES
OF KINGS COUNTY PARKS

Site	Annual Visitor-days
1. Burris Park	45,000
2. Laton-Kingston Park	154,000
3. Cross Creek Park	122,000
4. Empire Weir No. 1 Park	46,200
5. Dutch John Cut Weir Park	36,800
6. Empire Weir No. 2 Park	36,800
7. Crescent Weir Park	36,800
8. Island Weir Park	36,800
9. Lemoore Weir Park	36,800
10. Last Chance Park	<u>36,800</u>
TOTAL	588,000

TABLE 9

ESTIMATED BUILDUP
OF PARK CAPACITY AND PARK USE
KINGS COUNTY PARK DEVELOPMENT

The capacities of the parks, except for Hickey Park, were determined through analysis of the aforementioned factors. The capacity and use of Hickey Park were not determined because, as stated in Chapter II, no benefits were attributed to the proposed development at this park. The capacities, for the parks when fully developed, are presented in Table 8.

As indicated in Table 1, the parks would be developed over the period from 1968 through 1987; therefore, the capacity of the total park development would increase with time from 45,000 in 1968 to 588,000 in 1985, as shown in Table 9.

Estimated Park Use

The recreation capacities of the planned park development for the years 1970, 1980 and 1990 (Table 9), when compared with the potential recreation demand values for the same years shown in Table 7, indicate that potential demand exceeds capacity by about three to one in each year. The use of the total park development, therefore, is expected to be limited by the capacity. Past experience indicates that several years are usually required for the use of a new recreation facility to reach its capacity. The duration of the buildup period depends on the ratio of potential recreation demand to park capacity. Since this ratio for the Kings County parks is high, experience indicates that a three-year buildup period of park use is appropriate.

As stated previously, Burris Park is already developed, and its present use is estimated by the County to be 35,000 visitor-days per year. The proposed additional development at this park is expected to increase its capacity to 45,000 visitor-days per year, which will be fully utilized by 1968. The use of the remaining parks is assumed to reach full capacity in the third year of use after construction. The

Year	Park Development Capacity Visitor-days	Park Development Use Visitor-days
1968	45,000	45,000
1969	199,000	122,000
1970	321,000	221,000
1971	321,000	290,500
1972	321,000	321,000
1973	321,000	321,000
1974	321,000	321,000
1975	367,200	344,100
1976	367,200	355,650
1977	404,000	385,600
1978	440,800	413,200
1979	440,800	431,600
1980	477,600	459,200
1981	514,400	486,800
1982	514,400	505,200
1983	551,200	532,800
1984	551,200	542,000
1985	588,000	569,600
1986	588,000	578,800
1987	588,000	588,000
1988	588,000	588,000
1989	588,000	588,000
1990	588,000	588,000

estimated use of the total Kings County park development for the years 1968 through 1990 is shown in Table 9. It

is estimated that full development of 588,000 visitor days per year will be reached by 1987.

CHAPTER VI. ECONOMIC CONSIDERATIONS

In this report the economic aspects of the Kings County recreation plan are considered from the standpoints of economic justification and financial feasibility.

Economic Justification

A project is considered economically justified if the benefits derived from the project exceed the cost of the project. In determining the economic justification of the Kings County recreation plan, it was necessary to consider the benefits and costs of each of the proposed parks.

Benefits

An analysis was made of the proposed facilities at each of the parks to determine the values of visitor-day use in dollars per visitor-day. In determining the values, consideration was given to the variety and quality of recreation (types of activities avail-

able, quality of both the development and the recreation experience, and the operation and maintenance of the facilities) and the esthetic qualities of each site.

In applying the factors of variety and quality and of esthetics to the proposed parks, primary consideration was given to the method of evaluating general recreation set forth in "Supplementary Procedures for Application of Department of Water Resources Guidelines for Evaluation of General Recreation", Department of Parks and Recreation, January 25, 1967. The visitor-day recreation values determined for the proposed Kings County parks ranged from \$1.45 to \$1.70 per visitor-day. The present worth of the estimated recreation benefits of the proposed parks are shown in Table 10. These were determined from the unit recreation values and the estimated amounts of park use shown in Table 9. The present worth of the total estimated benefits of the Kings County recreation plan is \$17,029,700.

TABLE 10
PRESENT WORTH OF BENEFITS AND COSTS OF KINGS COUNTY RECREATION PLAN
FOR REPAYMENT PERIOD 1968-2035^{1/}
(In dollars)

	Burriss Park	Laton- Kingston	Cross Creek	Empire No. 1	Dutch John	Empire No. 2	Crescent Weir	Island Weir	Lemoore Weir	Last Chance	Hickey Park	TOTAL
Benefits	1,654,900	5,885,700	3,811,800	1,165,000	873,600	836,200	765,600	732,400	692,800	611,700	<u>2/</u>	17,029,700
Costs												
Park Costs												
Land	0-	60,000	16,000	15,000	10,600	6,700	12,500	11,500	2,300	2,100	<u>2/</u>	136,700
Construction	12,300	72,400	77,800	22,500	24,400	23,100	21,700	20,600	19,000	17,600	3,000	314,400
Replacement	33,500 ^{3/}	58,000	62,300	18,000	19,500	18,400	17,100	16,100	14,700	13,400	<u>2/</u>	271,000
Oper. & Maint.	326,600	1,038,600	788,600	241,700	175,400	167,900	153,700	147,000	134,400	122,800	<u>2/</u>	3,296,700
	372,400	1,229,000	944,700	297,200	229,900	216,100	205,000	195,200	170,400	155,900	3,000	4,018,800
Water Costs												
	96,000	193,000	190,000	52,000	50,000	44,000	40,000	39,000	43,000	34,000	29,000	810,000
TOTAL	468,400	1,422,000	1,134,700	349,200	279,900	260,100	245,000	234,200	213,400	189,900	32,000	4,828,800
Benefit-Cost Ratios	3.5:1	4.1:1	3.4:1	3.3:1	3.1:1	3.2:1	3.1:1	3.1:1	3.2:1	3.2:1	<u>3/</u>	3.5:1

^{1/} Present worth calculated for 1968 at 4 percent interest rate.

^{2/} Not calculated.

^{3/} Includes annual replacement cost for existing development at Burriss Park.

Park Costs

Estimates of costs of the proposed parks as received from the County include costs for land and construction expenditures. For this report, the construction costs were increased approximately 30 percent over Kings County's estimates to cover design, engineering, and contingencies. Annual facility replacement costs during the repayment period, 1968-2035, were considered to total 3.5 percent of construction costs, and operation and maintenance expenses were assumed to be \$0.30 per visitor-day.

The present worth of the estimated park costs are presented in Table 10. The estimated annual costs for land, construction, replacement, and operation and maintenance for all parks are shown in Table 11. The present worth of total costs for all of the parks is estimated to be \$4,018,800.

Water Costs

The Cost to Kings County for water service from the State Water Project is dependent upon the allocation to the

TABLE 11
FINANCIAL ANALYSIS OF KINGS COUNTY RECREATION PLAN

Year	Land Costs	Construction Costs	Replacement Costs	Operation & Maintenance Costs	Water Costs	Total Annual Costs	Assessed Valuation (In millions)	Ad Valorem Tax per \$100 of Assessed Valuation
1968	\$91,000	\$84,700	\$ 1,000 ^{1/}	\$ 13,500	\$16,600	\$206,800	\$171.6	\$0.12
1969	11,000	80,900	3,900	36,600	18,900	151,300	176.8	0.09
1970	13,500		6,700	66,400	24,600	111,200	182.0	0.06
1971	7,500		6,700	87,100	24,100	125,400	192.4	0.07
1972	13,500		6,700	96,300	23,500	140,000	202.8	0.07
1973		9,500	6,700	96,300	24,600	137,100	213.2	0.06
1974		9,500	7,000	96,300	25,300	138,100	223.6	0.06
1975		9,500	7,400	103,200	25,800	145,900	234.0	0.06
1976		22,600	7,700	106,700	25,400	162,400	244.4	0.07
1977		22,400	8,500	115,700	26,000	172,600	254.8	0.07
1978		22,600	9,300	124,000	27,600	183,500	265.2	0.07
1979		22,600	10,100	129,500	28,300	190,500	275.6	0.07
1980		22,400	10,900	137,700	30,000	201,000	286.0	0.07
1981	4,000	22,600	11,700	146,000	30,200	214,500	301.6	0.07
1982		11,200	12,500	151,500	32,100	207,300	317.2	0.07
1983		22,600	12,900	159,700	34,400	229,600	332.8	0.07
1984	4,000	11,200	13,700	162,500	36,500	227,900	348.4	0.07
1985		22,600	14,100	170,700	39,200	246,600	364.0	0.07
1986			14,900	173,500	42,300	230,700	379.6	0.06
1987			14,900	176,200	43,800	234,900	395.2	0.06
1988			14,900	176,200	43,500	234,600	410.8	0.06
1989			14,900	176,200	43,500	234,600	426.4	0.06
1990-1996			14,900	176,200	43,500	234,600	481.0 ^{2/}	0.05
1997-2006			14,900	176,200	43,500	234,600	594.2 ^{2/}	0.04
2007-2017			14,900	176,200	43,500	234,600	756.8 ^{2/}	0.03
2018			14,900	176,200	35,700	226,800	871.0	0.03
2019			14,900	176,200	35,100	226,200	890.5	0.03
2020-2035			14,900	176,200	34,500	225,600	910.2 ^{3/}	0.02

^{1/} Replacement cost for existing development at Burris Park. Existing development capital value assumed at \$30,000 (\$30,000 x 0.035 = \$1,000).
^{2/} Average value for period.
^{3/} Assumed constant after 2020.

County of its share of the costs of project facilities for conservation and transportation in accordance with the terms of the water supply contract between the County and the State. The State Water Project is being constructed by the State with funds derived from the sale of general obligation bonds, authorized under the Water Resources Development Bond Act.^{1/} Most of the parks will receive water directly from the Kings River. Those to be located off the River will receive water from existing canals; therefore it will not be necessary to construct any new local conveyance systems.

Under terms of the contract, Kings County will be charged for such quantities of project water as it is entitled to receive each year. In addition, charges will be made for surplus water which will be available under certain conditions.

Charges under the contract will be made to secure payment of reimbursable costs of the project conservation works and of the project transportation facilities necessary to deliver water. Charges for these purposes are called, respectively, the Delta Water Charge and the Transportation Charge.

Delta Water Charge. Under the provisions of Article 222^{2/}, every contractor for project water will pay the Delta Water Charge each year as an annual charge per acre-foot of project water for the amount of its annual entitlement for the respective year. This charge, together with revenues derived from power generated in connection with the operation of project conservation facilities, will return to the State all reimbursable costs for the conservation facilities over the project repayment period.

The Delta Water Charge is established at a rate of \$3.50 per acre-foot through the year 1969 and is estimated for this report to be \$6.39 per acre-foot thereafter until supplemental conservation facilities, as defined in the contract, are constructed. Estimated charges for this component for the buildup of entitlements included in the contract are listed in Table 12.

Transportation Charge. In addition to the Delta Water Charge, contractors receiving water from the State Water Project will pay for the construction and operation of transportation facilities. Articles 23 through 28 govern the determination of the Transportation Charge.

The allocation to each contractor of costs comprising three components of the Transportation Charge, the capital cost component and the minimum and variable operation, maintenance, power and replacement components, is made on a proportionate-use-of-facilities basis. The capital (or construction) cost component and the minimum (or fixed) operation, maintenance, power and replacement component are allocated on the basis of the maximum annual entitlement and the peaking capacity provided for the contractor within each reach of the aqueduct to be used to convey water to the contractor. In the case of Kings County, this includes all reaches of the California Aqueduct from the Sacramento-San Joaquin Delta south to the reach including Tulare Lake Basin Water Storage District's Turnout A. The variable operation, maintenance, power, and replacement component is allocated on the basis of each contractor's share of water delivered through each applicable reach of the aqueduct during each year.

^{1/} Chapter 8, commencing with Section 12930, of Part 6 of Division 6 of the Water Code.

^{2/} All article references are to articles of the "Water Supply Contract Between the State of California and Kings County" dated August 31, 1967.

TABLE 12

SUMMARY OF ANNUAL CHARGES TO KINGS COUNTY
FOR WATER FROM THE STATE WATER PROJECT

Calendar Year	Annual	Transportation Charge				Delta	Total
	In Acre-feet	Capital Cost	Minimum OMP & R	Variable OMP & R	Total Transportation Charge		
1968	900	\$7,785	\$3,141	\$2,517	\$13,443	\$ 3,150	\$16,593
1969	1,200	8,388	3,285	3,075	14,748	4,200	18,948
1970	1,300	8,607	3,467	4,194	16,268	8,307	24,575
1971	1,300	8,685	3,547	3,590	15,822	8,307	24,129
1972	1,400	8,808	3,435	2,322	14,565	8,946	23,511
1973	1,500	8,915	3,462	2,598	14,975	9,585	24,560
1974	1,500	8,979	3,538	3,202	15,719	9,585	25,304
1975	1,600	8,980	3,514	3,044	15,538	10,224	25,762
1976	1,600	8,981	3,485	2,664	15,130	10,224	25,354
1977	1,700	8,981	3,473	2,686	15,140	10,863	26,003
1978	1,900	8,981	3,481	3,037	15,499	12,141	27,640
1979	2,000	8,981	3,475	3,098	15,554	12,780	28,334
1980	2,200	8,981	3,483	3,444	15,908	14,058	29,966
1981	2,300	8,981	3,479	3,540	16,000	14,697	30,697
1982	2,500	8,981	3,469	3,699	16,149	15,975	32,124
1983	2,800	9,047	3,466	4,026	16,539	17,892	34,431
1984	3,100	9,181	3,449	4,081	16,711	19,809	36,520
1985	3,400	9,454	3,452	4,552	17,458	21,726	39,184
1986	3,700	9,664	3,481	5,552	18,697	23,643	42,340
1987	4,000	9,664	3,444	5,140	18,248	25,560	43,808
1988	4,000	9,664	3,432	4,835	17,931	25,560	43,491
1989	4,000	9,664	3,433	4,841	17,938	25,560	43,498
1990	4,000	9,664	3,437	4,935	18,036	25,560	43,596
1991	4,000	9,664	3,434	4,856	17,954	25,560	43,514
1992	4,000	9,664	3,434	4,852	17,950	25,560	43,510
1993	4,000	9,664	3,434	4,850	17,948	25,560	43,508
1994	4,000	9,664	3,434	4,849	17,947	25,560	43,507
1995	4,000	9,664	3,434	4,848	17,946	25,560	43,506
1996	4,000	9,664	3,434	4,847	17,945	25,560	43,505
1997-2017	4,000	9,664	3,434	4,846	17,944	25,560	43,504
2018	4,000	1,879	3,434	4,846	10,159	25,560	35,719
2019	4,000	1,276	3,434	4,846	9,556	25,560	35,116
2020	4,000	1,057	3,434	4,846	9,337	25,560	34,897
2021	4,000	979	3,434	4,846	9,259	25,560	34,819
2022	4,000	856	3,434	4,846	9,136	25,560	34,696
2023	4,000	749	3,434	4,846	9,029	25,560	34,589
2024	4,000	685	3,434	4,846	8,965	25,560	34,525
2025	4,000	684	3,434	4,846	8,964	25,560	34,524
2026-2032	4,000	683	3,434	4,846	8,963	25,560	34,523
2033	4,000	617	3,434	4,846	8,897	25,560	34,457
2034	4,000	484	3,434	4,846	8,764	25,560	34,324
2035	4,000	210	3,434	4,846	8,490	25,560	34,050

Under the standard method of payment set forth in Article 24(c) of the contract, the capital cost component of the Transportation Charge allocated each year to Kings County will be paid in 50 equal payments of principal and interest. The project interest rate will depend upon the actual interest rates for bonds to be sold under the Water Resources Development Bond Act. The project interest rate is assumed herein to be 3.7 percent per annum.

Estimated annual values of the components of the Transportation Charge for the County are shown in Table 12.

The determination of charges under the contract, as described above and as summarized in Table 12, does not result in a uniform charge per acre-foot throughout the repayment period. Since major portions of the total charge are on a unit-rate basis, however, the total charge is fairly uniform. The weighted average unit rate of the total charge during the buildup period, 1968 through 1987, is about \$13.85 per acre-foot. During the period from 1988 through 2017, the unit rate of the total charge is essentially constant and is about \$10.90 per acre-foot. The capital cost component of the transportation charge begins to lower in 2018 and is reduced to zero by the end of 2035. During the period from 2018 to 2035, the unit rate is relatively constant and is about \$8.65 per acre-foot. The unit water cost for the year 1991 is presently estimated to be \$10.88 per acre-foot, which is about the weighted average unit rate throughout the project repayment period.

The present worth of the estimated water charges are presented in Table 10. The charges are divided among the parks in accordance with the amounts of water expected to be utilized at each park. The present worth of the total water cost is estimated to be \$810,000.

Total Costs

The estimated total costs of the proposed parks are shown in Table 10 in the form of present worth values. The estimated present worth of all costs for the Kings County recreation plan, including costs for park development, park operation and maintenance and water, is \$4,828,800.

Benefit-Cost Ratios

A benefit-cost ratio was determined for each park, except Hickey Park, for which, as discussed in Chapter II, the benefits were assumed to be zero for purposes of determining the economic justification of the recreation plan. These ratios and the benefit-cost ratio for the recreation plan (including the cost of water) are shown in Table 10. As indicated in the table, benefit-cost ratios vary from 3.1:1 to 4.1:1; for the recreation plan, the ratio is 3.5:1. Since the benefits exceed the costs, the project is considered economically justified.

If Kings County were to develop parks approximately as planned but without the use of additional water at the existing ponds, certain benefits would remain. To further test whether the provision of water to Kings County from the State Water Project was justified, costs (exclusive of water costs) were compared to the benefits which might exist without state water. In doing this, it was assumed that the County would construct the proposed parks without contributing to the water supply of the Kings River for maintenance of diversion weir ponds. This comparison indicated that the benefits would be reduced but would exceed the remaining costs at each site. The modified benefit-cost ratio for the entire development, excluding Hickey

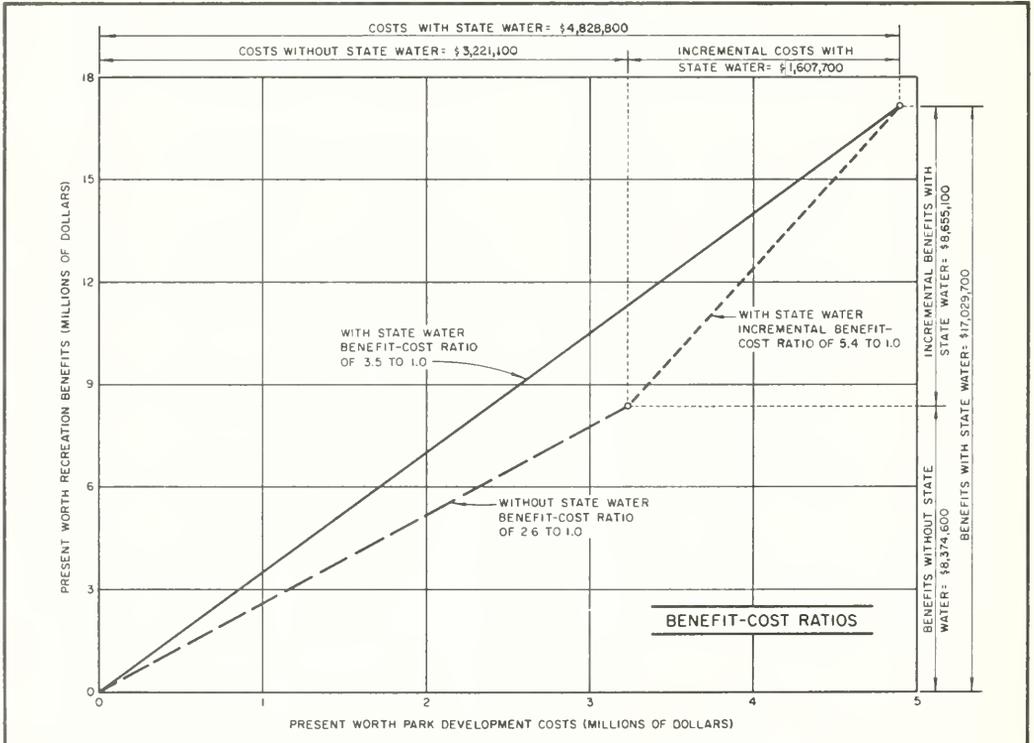
TABLE 13
KINGS COUNTY ASSESSED VALUATION

Year	Assessed Valuation ^{1/} (In Millions)	Population ^{2/}	Per Capita Valuation	Ratio of County Assessed Value to Market Value (In Percent)	Per Capita Evaluation at 25% of Market Value
1950	\$117.0	46,600	\$2,510	N.A.	N.A.
1951	112.7	46,500	2,420	N.A.	N.A.
1952	111.5	47,900	2,330	N.A.	N.A.
1953	115.3	47,200	2,440	N.A.	N.A.
1954	112.7	46,900	2,400	N.A.	N.A.
1955	117.9	47,000	2,510	N.A.	N.A.
1956	115.5	47,000	2,460	N.A.	N.A.
1957	120.4	47,600	2,530	N.A.	N.A.
1958	127.7	48,600	2,630	N.A.	N.A.
1959	127.1	49,300	2,580	25.7	\$2,510
1960	130.1	50,500	2,580	27.0	2,390
1961	133.0	54,400	2,440	22.5	2,710
1962	140.3	58,400	2,400	24.3	2,470
1963	144.3	65,000	2,220	24.3	2,280
1964	146.8	66,300	2,210	20.6	2,680
1965	145.6	67,000	2,170	20.1	2,700
1966	149.7	68,100	2,200	20.7	2,660

^{1/} Source, Board of Equalization

^{2/} As of July 1, provisional population estimates, State Department of Finance, October 1967.

FIGURE 2



Park, would be 2.6:1. The ratio of incremental benefits to incremental costs associated with providing state water is 5.4:1. Both the number and the value of the visitor-days are greater when project water is added. The relationships of benefits to costs and of incremental benefits to incremental costs are shown on Figure 2. This analysis indicates that the provision of state water is economically justified when considered either on the basis of the park development as planned or on an incremental basis.

Financial Feasibility

As previously indicated, Kings County has contracted for a maximum annual entitlement of 4,000 acre-feet of water. An analysis has demonstrated the feasibility of payment by the County of costs to develop the parks proposed in the County's recreation plan and to purchase water under the water supply contract.

Financial Analysis

During the period from 1950 to 1966, the assessed valuation of Kings County has grown from about \$117 million to about \$150 million, as shown in Table 13.

Beginning in 1971, all counties in the State will be required to assess at 25 percent of market value. The per capita valuation for each year during the period from 1960 to 1966, based on the 25 percent rate, is shown in the last column in Table 13. The average per capita valuation is about \$2,600.

Assuming the per capita valuation will remain at about \$2,600 and the population will be as shown in Table 5, assessed valuations for the years 1968 through 2035 are estimated to be as listed in Table 11. Although the County's method of collection of funds for payment of costs of the recreation plan is unknown, this analysis indicates that the costs for development of parks and purchase of water in accordance with the plan could be met annually by ad valorem taxation at reasonable rates, as shown in the last column of Table 11. With the exception of 1968 and 1969, when the tax rates would be \$0.12 and \$0.09, respectively, the total annual costs for the plan would be met by a tax rate of \$0.07, or less, per \$100 of assessed value each year of the repayment period 1968-2035.

Kings County may receive funds from state and federal sources to pay some of the purchase and development costs indicated in Table 11. To the extent that costs were met by such funds, the estimated tax rates would be reduced.

Bonded Indebtedness

Bonded indebtedness within Kings County was approximately \$17 million as of June 30, 1965. This is about 12 percent of the County's 1965 assessed valuation and represents a reasonable debt ratio.

It is believed that Kings County is in good financial condition and will be able to pay the costs for the County's recreation plan, including the cost of water.

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