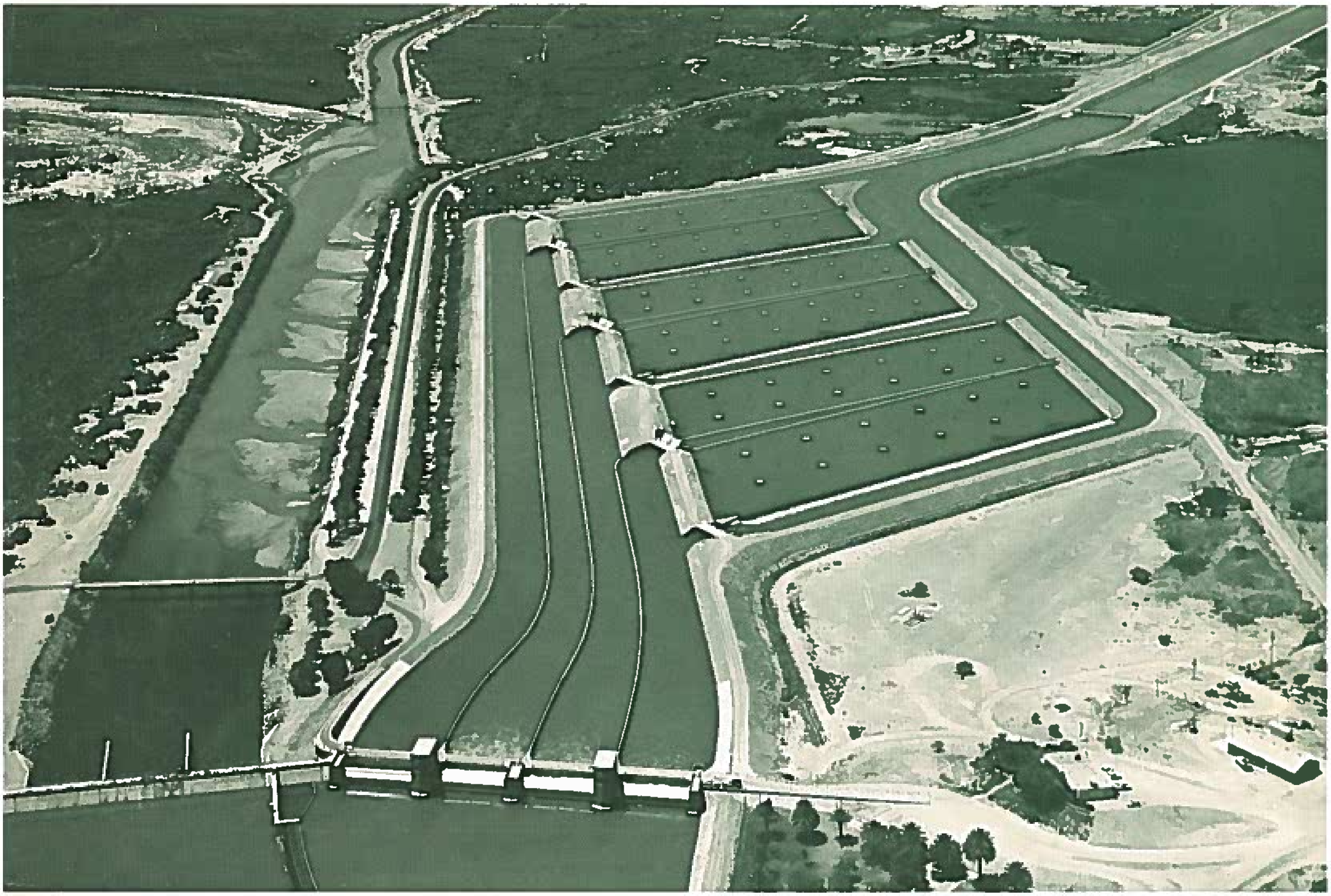


IMPERIAL IRRIGATION DISTRICT

annual report for the year 1970

THE YEAR 1970

BOARD OF DIRECTORS

Carl C. Bevins, *President*
Division 5

Raymond L. (Lom) Thompson, *Vice-President*
Division 1

Joseph D. Moore, *Division 2*

Bernard Galleano, *Division 3*

A. Neal Jack, *Division 4*

Larry Beck
Secretary to the Board

Anna T. McManus
Treasurer

MANAGEMENT

Robert F. Carter, *General Manager*

C. James Lloyd, *Assistant General Manager*

J. Fred Hesse, *Power Manager*

J. Melvin Sheldon, *Water Manager*

Robert D. Reynolds, *Operations Manager*

Richard W. Wheeler, *Finance Manager*

L. R. McGlocklin, *Personnel Manager*

Reginald L. Knox, Jr., *Chief Legal Counsel*

William J. Stadler,
Director, Community and Special Services

Cover Photo

Aerial photo shows where the lifeline of Imperial Valley begins. Here, about 18 miles north of Yuma, Arizona, is located the Imperial Dam. The dam diverts Colorado River water into the headworks of the All-American Canal. This man-made river delivers water to approximately 500,000 acres of land in Imperial Valley, 70,000 acres in Coachella Valley, and 67,000 acres of the Yuma Project in California and Arizona. Imperial Dam can be seen at the bottom of the picture. It is a reinforced-concrete structure and consists of an overflow weir with canal headworks at each end and a sluiceway between the weir and the canal headworks at the California end. The roller-type dam, extending entirely across the flood plain, is 3,485 feet long with a spillway section 1,197.5 feet long and 31 feet high from the bottom of the base to the crest at 181 feet elevation. While the Colorado River can be seen in the central portion of the photo continuing its way south to the Gulf of California, the water for the All-American Canal (upper right) is diverted into three desilting basins, each with a designed flow capacity of 4,000 cubic feet per second. The desilting basins, center right, contain 125-foot scrapers. They rotate every 13 minutes and move silt deposits to the center of the mounting pedestals, from which the silt is flushed back into the river through underground channels. The silt deposited in the Colorado River can be seen clearly in the picture. The desilted water flows into the All-American Canal.

EL CENTRO STEAM PLANT

CLEAN NATURAL GAS POWERS IID FACILITY

Seen above is the Board of Directors looking over the system's pollution-free steam power plant in El Centro. From left, President Carl C. Bevins, Joseph D. Moore, Bernard Galleano, Vice-President Raymond L. (Lom) Thompson, and A. Neal Jack. President Bevins points out the lack of any particulate matter pouring from the stacks. Two of the four stacks are in the background. The plant runs on natural gas.

President Carl C. Bevins with Senator Gordon Cologne, Indio, at the California State Capitol in Sacramento.

President's Report

A successful public utility must look constantly to the future of the area it serves. It is with considerable pride that we submit the 1970 annual report of the Imperial Irrigation District which shows that our policies during the year have been motivated not only by the desire to solidify present operations, but also to take into consideration the expected growth in population in our service area and the ever-increasing use of electricity.

The District took an important step toward assuring uninterrupted and better service to the Coachella Valley when the board approved purchase of three 20,000-kilowatt gas turbines to be installed in the Coachella Valley. The plant is expected to be placed in operation in June 1973.

Also with a view to better service to the Coachella Valley area, a new $750,000 transmission line between El Centro and Niland was placed in service on August 8 to connect to the Niland-Coachella line.

During the year, increased consideration was given to possible geothermal development. The District has been interested in the area's geothermal potential for many years, leasing its land to corporations seeking to develop the resource.

The District established a water availability charge, effective January 1, 1971, of $1.42 per acre net in an effort to maintain water revenue at a level sufficient to meet operating expenses of the irrigation and drainage systems.

Roller gate at Imperial Dam looking south to desilting basins.

Robert F. Carter
General Manager

General Manager's Report

The District entered the decade of the seventies confident of continuing the rate of progress evidenced during past decades. A solid financial structure and a thoroughly experienced manpower team have fulfilled this expectation.

A measure of water system operational efficiency is the percentage of water received at Pilot Knob which is actually delivered to water users. In 1970 this amounted to 86.13 per cent. Water diversions for all agencies served by Imperial Dam, Station 60, totalled 4,534,492 acre-feet, an increase of 57,838 acre-feet from 1969.

Further improvements were made in the internal management functions of the irrigation system. Additional telemetering and supervisory equipment was installed for operation of the Rositas Supply Canal heading on the East Highline Canal. Supervisory equipment for transmitting water surface elevation to the Water Control Office at Imperial Headquarters was installed at Orchid Check, Oak Check, Myrtle Check and Flowing Wells. Nineteen telemetering stations are now in operation.

A total of 38.7 miles of lateral canals were concrete lined for the District's continued operation and maintenance, making a total of 452.0 miles installed since 1954. Imperial Valley farmers, demonstrating confidence in the agricultural future of the area, added 66.1 miles of concrete-lined private head ditches, bringing the total to 1,724 miles since 1949, and 1,037 miles of farm tile drains, for a total of almost 16,000 miles to date.

All-electric Imperial County Services Building.

In power operations, kilowatt-hour sales to ultimate users reached 860,000,000 for the year 1970, a 100 per cent increase over 1960. Programming for new generation facilities to meet increasing load requirements is on schedule with 60 megawatts of additional capacity planned for 1973.

One measure of the efficiency of power operations is indicated by the fact that the average cost per kilowatt-hour to the residential user was 1.71 cents — 18 per cent below the national average as reported by the Edison Electric Institute.

Overall, assets of the District passed $145,000,000 with net worth comprising 75 per cent of this figure.

These brief comments, we believe, provide accurate insight into the nature of District operations. In the face of ever-expanding demands for service, the introduction of technological improvements and rigid controls over manpower staffing have permitted these achievements.

TREASURER'S AND FINANCIAL REPORTS

ANNA T. McMANUS
TREASURER

Cash receipts from all sources during 1970 totalled $21,375,018 — an increase of $468,758 over the previous year. An assessment on the lands of the District has not been levied since 1966; therefore the income from that source has been eliminated. Expenditures amounted to $20,739,547 for payment of bond principal and interest, payrolls, and operating expenses including materials and services.

Sufficient funds were set aside to meet the annual budget requirements, such as water and power department operations, payments on bonds, and coverage of various reserves and sinking funds, as required by law. Cash funds not needed for current expenses were placed in interest-bearing accounts with 19 banks in Imperial and Coachella Valleys. These accounts, together with government bond purchases and repurchase agreements with banks, provided the District with a total earned-interest income of $907,000 during the year.

Interest rates on inactive funds have changed 25 times since June 24, 1970, at which time an all-time high of 7½ per cent was paid by the banks on short and long-term inactive funds. As of January 21, 1970, one-year inactive funds earned 7½ per cent interest. On December 31, 1970, inactive funds amounted to $13,000,000, of which $11,000,000 was earning 7½ per cent interest.

Repurchase agreements (purchase and sale of U.S. securities by the District on a day-to-day or over-a-weekend basis) started January 16, 1970, at an interest rate of 8 per cent. On December 31, 1970, the interest rate was 4⅜ per cent. The District earned $75,775 in interest on this investment, which is included in the above accrued interest amount. Active funds are used for these purchases prior to commitments for District expenses.

Electric revenue bond principal and interest totalling $2,009,550 was paid during 1970, which included $1,480,000 principal and $529,550 interest.

The electric revenue bonds, issued from 1937 to 1954, amounted to $37,963,000; the total remaining unpaid on December 31, 1970, amounted to $16,312,000. These bonds were issued to aid in financing the District's long-range power development program, including additions and improvements to its expanding power system.

FIVE-YEAR FINANCIAL COMPARISON

1966 - 1970

Year	*Receipts*	*Expenditures*
1966	$20,487,399	$19,478,056
1967	19,944,036	23,444,055*
1968	19,960,416	27,321,999*
1969	20,906,260	19,800,975
1970	21,375,018	20,739,547

***Steam Plant Construction**

ELECTRIC REVENUE BONDED INDEBTEDNESS

Year	*Indebtedness Beginning of Year*	*Bonds Retired*	*Indebtedness End of Year*
1966	$23,448,000	$1,355,000	$22,093,000
1967	22,093,000	1,433,000	20,660,000
1968	20,660,000	1,430,000	19,230,000
1969	19,230,000	1,389,000	17,841,000
1970	17,841,000	1,480,000	16,312,000

Fund Balances—December 31, 1970, and December 31, 1969

POWER FUNDS	December 31, 1970	December 31, 1969	Increase or Decrease*
POWER OPERATING REVENUE FUNDS:			
Cash Balances	$ 658,571	$ 1,344,361	$ 685,790*
POWER BOND FUNDS:			
Cash Balances	3,267,763	3,260,297	7,466
POWER CONSTRUCTION FUNDS:			
Cash Balances	2,965,780	1,701,729	1,264,051
MISCELLANEOUS POWER RESERVE FUNDS:			
Cash Balances	188,476	168,256	20,220
TOTAL POWER DEPARTMENT CASH BALANCES	$ 7,080,590	$ 6,474,643	$ 605,947
WATER FUNDS			
WATER OPERATING FUNDS:			
Cash Balances	$ 3,078,723	$ 2,848,741	$ 229,982
WATER CONSTRUCTION FUNDS:			
Cash Balances	830,320	713,477	116,843
MISCELLANEOUS WATER FUNDS:			
Cash Balances	2,491,691	2,809,126	317,435*
TOTAL WATER DEPARTMENT CASH BALANCES	$ 6,400,734	$ 6,371,344	$ 29,390
ALL FUNDS			
TOTAL CASH BALANCES	$13,481,324	$12,845,987	$ 635,337

*Decrease

NOTE: Cash Balances Include Securities Held

COMPARATIVE FINANCIAL ANALYSIS

Water

Water Department Earned	1970	1969	1968	1967	1966
From: Assessments, Penalties and Costs				$1,569,961	$1,589,382
Redemption of Delinquent Assessments	$ 3,351	$ 6,248	$ 26,743		
Interest on Redemption of Delinquent Assessments	828	1,119	2,545	2,119	5,436
Sales and Rentals of Land Held Under Assessment Deeds	14,488	9,583	8,471	8,063	21,185
Water Deliveries and Gate and Pipe Service Charges	5,864,697	5,786,741	6,090,877	5,060,117	4,944,431
Rental of Land, Buildings and Equipment	164,322	148,642	186,809	184,731	129,235
Other Sources	129,678	125,014	114,382	117,302	117,011
Earned from Operations	$6,177,364	$6,077,347	$6,429,827	$6,942,293	$6,806,680
Interest on Reserves	404,830	313,367	254,465	346,878	309,820
Total Earned from All Sources	$6,582,194	$6,390,714	$6,684,292	$7,289,171	$7,116,500
Which Was Used or Set Aside for:					
Operating Expenses	$5,129,150	$4,730,587	$4,393,004	$4,153,185	$3,957,819
Interest on Bonds				100,306	125,775
Taxes	5,715	13,076	10,517	9,978	9,246
Accounting for Operating Expenses and Income Deductions of	$5,134,865	$4,743,663	$4,403,521	$4,263,469	$4,092,840
Leaving a Differential of	1,447,329	1,647,051	2,280,771	3,025,702	3,023,660
Which Was Used for:					
Retirement of Bonds				$ 795,000	$ 736,000
Additions to Canal System	$ 791,648	$ 874,761	$1,252,899	1,251,772	1,283,368
Additions to Drainage System	513,656	506,189	536,116	563,543	516,907
Additions to Buildings and Land	8,372	3,096	19,978	51,108	29,500
New Equipment	62,617	159,106	326,244	317,843	328,401
Additions to Operating Funds	71,036	103,899	145,534	46,436	129,484
	$1,447,329	$1,647,051	$2,280,771	$3,025,702	$3,023,660
Which Accounts in Full for	$6,582,194	$6,390,714	$6,684,292	$7,289,171	$7,116,500

COMPARATIVE FINANCIAL ANALYSIS

Power

Power Department Earned	1970	1969	1968	1967	1966
From: Power Sales	$13,652,153	$13,147,188	$12,150,519	$11,861,881	$11,486,319
Rental of Electric Property	26,340	25,749	22,507	21,492	21,883
Other Sources	133,466	126,769	129,852	124,503	133,030
Earned from Operations	$13,811,959	$13,299,706	$12,302,878	$12,007,876	$11,641,232
Interest on Reserves	460,937	282,864	302,548	540,607	553,239
Total Earned from All Sources	$14,272,896	$13,582,570	$12,605,426	$12,548,483	$12,194,471
Which Was Used or Set Aside for:					
Operating Expenses	$ 8,207,710	$ 7,921,612	$ 7,250,647	$ 6,728,891	$ 6,293,130
Interest on Bonds	507,735	551,203	591,538	632,887	676,120
Lease of Power Rights	27,027	81,950	39,445	31,157	19,662
Taxes	22,887	21,464	20,848	19,371	17,329
Accounting for Operating Expenses and Income Deductions of	$ 8,765,359	$ 8,576,229	$ 7,902,478	$ 7,412,306	$ 7,006,241
Leaving a Differential of	5,507,537	5,006,341	4,702,948	5,136,117	5,188,230
Which Was Used for:					
Retirement of Electric Revenue Bonds	$ 1,510,000	$ 1,460,000	$ 1,380,000	$ 1,350,000	$ 1,340,133
Additions to Plant	2,078,252	1,522,959	1,993,964	1,568,749	1,638,122
Increase of Material and Supplies			113,541	48,959	86,615
Payment into Special Electric Plant Construction Fund	1,290,070	1,569,342	388,918	1,226,959	1,361,910
Additions to Other Reserve Funds	14,155	12,038	28,748	93,529	77,376
Deposit with the United States on All-American Canal Contract	101,356	237,117	171,837	140,555	110,131
Payment into Contract Fund — All-American Canal	348,644	182,883	218,163	219,445	219,869
Additions to Operating Fund	165,060	22,002	407,777	487,981	354,074
	$ 5,507,537	$ 5,006,341	$ 4,702,948	$ 5,136,177	$ 5,188,230
Which Accounts in Full for	$14,272,896	$13,582,570	$12,605,426	$12,548,483	$12,194,471

CONSOLIDATED REVENU

(January 1, 1970

OPERATING REVENUES:	*Power Dept.*	*Water Dept.*	*Consolidated*
Realized Revenue from:			
Redemption of Delinquent Assessments		$ 3,351	$ 3,351
Interest Collected on Redemptions		828	828
Total Collected by Assessor-Collector		$ 4,179	$ 4,179
Sales of Land Held Under Assessment Deeds		$ 13,267	$ 13,267
Rental of Land Held Under Assessment Deeds		1,221	1,221
Total Revenues Derived from Delinquent Assessments		$ 18,667	$ 18,667
Water Sales		$5,769,814	$ 5,769,814
Gate Service Charges		57,699	57,699
Pipe Service Charges		37,184	37,184
Rental of Buildings		87,909	87,909
Rental of Electrical Property	$ 26,340		26,340
Rental and Sales of Operative Land		50,287	50,287
Rental of Equipment		26,126	26,126
Contributions for Operation and Maintenance of All-American Canal		127,244	127,244
Power Sales:			
Residential or Domestic Sales	$ 6,023,672		$ 6,023,672
Rural Sales — Agricultural Power	570,827		570,827
Commercial Sales	5,541,697		5,541,697
Industrial Sales	1,105,430		1,105,430
Public Streets and Highway Lighting	146,558		146,558
Other Sales to Public Authorities	162,735		162,735
Interdepartmental Sales	101,234		101,234
Total Power Sales	$13,652,153		$13,652,153
Miscellaneous Revenue	133,466	2,434	135,900
TOTAL OPERATING REVENUES	$13,811,959	$6,177,364	$19,989,323

\ND EXPENSE STATEMENT

cember 31, 1970)

	Power Dept.	*Water Dept.*	*Consolidated*
Total Operating Revenue — Brought Forward	$13,811,959	$6,177,364	$19,989,323
OPERATING REVENUE DEDUCTIONS:			
Operating Expenses:			
Operation and Maintenance of Water System		$4,239,378	$ 4,239,378
Operation and Maintenance of All-American Canal		774,429	774,429
Operation and Maintenance of Imperial and Laguna Dams		62,428	62,428
Operation and Maintenance of Power System:			
Production Expenses	$ 3,039,137		$ 3,039,137
Power Purchased	2,019,844		2,019,844
Transmission Expenses	275,005		275,005
Distribution Expenses	1,232,398		1,232,398
Accounting and Collecting Expenses	518,902		518,902
Sales Promotion Expenses	109,938		109,938
Administrative and General Expenses	1,012,486		1,012,486
Total Power Operation and Maintenance	$ 8,207,710		$ 8,207,710
Miscellaneous Expenses		52,915	52,915
Total Operating Expenses	$ 8,207,710	$5,129,150	$13,336,860
Depreciation and Amortization:			
Depreciation of Equipment and Facilities		$ 52,528	$ 52,528
Depreciation of Buildings		74,606	74,606
Depreciation of Canal Structures		323,117	323,117
Depreciation of Power System	2,634,679		2,634,679
Losses on Sales and Retirements of Assets		18,687	18,687
Taxes	22,887	5,715	28,602
Total Operating Revenue Deductions	$10,865,276	$5,603,803	$16,469,079
Net Operating Revenue	$ 2,946,683	$ 573,561	$ 3,520,244
OTHER INCOME:			
Interest on Securities		$ 1,250	$ 1,250
Interest on Bank Deposits	$ 427,318	403,418	830,736
Miscellaneous Interest	33,619	162	33,781
Total Other Income	$ 460,937	$ 404,830	$ 865,767
GROSS INCOME	$ 3,407,620	$ 978,391	$ 4,386,011
INCOME DEDUCTIONS:			
Interest on District Bonds	$ 507,735		$ 507,735
Lease of Power Rights	27,027		27,027
Total Income Deductions	$ 534,762		$ 534,762
INCOME RETAINED FOR PLANT EXPANSION	$ 2,872,858	$ 978,391	$ 3,851,249

Comparative Income and Expense Statement and Balance Sheet

WATER

	1970	1969
Operating Revenue	$ 6,177,364	$ 6,077,347
Operating Deductions	5,603,803	5,225,092
Operating Income	$ 573,561	$ 852,255
Other Income	404,830	313,367
Gross Income	$ 978,391	$ 1,165,622
Retained for Plant Expansion	$ 978,391	$ 1,165,622

BALANCE SHEET

	1970	1969
Current Assets	$ 4,518,177	$ 3,910,293
Investment and Fund Accounts	3,322,011	3,522,603
Fixed Assets	70,946,189	69,640,916
Other Assets and Deferred Charges	668,156	641,705
Total Assets	$79,454,533	$77,715,517
Current Liabilities	$ 727,318	$ 785,686
Long-Term Liabilities	17,035,184	17,744,983
Deferred Credits and Reserves	511,729	115,749
Net Worth	61,180,302	59,069,099
Total Liabilities and Net Worth	$79,454,533	$77,715,517

POWER

	1970	1969
Operating Revenue	$13,811,959	$13,299,706
Operating Deductions	10,865,276	10,522,429
Operating Income	$ 2,946,683	$ 2,777,277
Other Income	460,937	282,864
Gross Income	$ 3,407,620	$ 3,060,141
Income Deductions	534,762	633,153
Retained for Plant Expansion	$ 2,872,858	$ 2,426,988

BALANCE SHEET

	1970	1969
Current Assets	$ 3,169,382	$ 3,693,776
Investments and Fund Accounts	6,095,984	4,796,290
Fixed Assets — Electric Plant	56,969,472	57,285,405
Other Assets and Deferred Charges	11,661	11,100
Total Assets	$66,246,499	$65,786,571
Current Liabilities	$ 678,100	$ 667,525
Long-Term Liabilities	17,284,217	18,855,017
Deferred Credits and Reserves	497,168	428,854
Net Worth	47,787,014	45,835,175
Total Liabilities and Net Worth	$66,246,499	$65,786,571

CONSOLIDATED STATEMENT OF ASSETS, LIABILITIES AND NET WORTH

DECEMBER 31, 1970

ASSETS

Funds for:		
Operation and Maintenance	$ 3,737,294	
Payment of Bond Principal and Interest	3,267,763	
New Construction	3,796,100	
Reserve Funds for Replacement and Emergencies	1,608,065	
Other Special Funds	1,072,102	
Total Funds		$ 13,481,324
Accounts Receivable		2,183,859
Materials and Supplies		1,390,036
Tax Deed Land		12,148
Deferred Charges and Prepaid Expenses		718,004
Properties (Water and Power Systems)		127,915,661
Total Assets		$145,701,032

LIABILITIES

Current Liabilities	$ 1,398,418	
Outstanding Bonds	16,312,000	
Deferred Contract Installments	18,014,401	
Reserves	32,925	
Deferred Credits	975,972	$ 36,733,716
NET WORTH		108,967,316
Total Liabilities and Net Worth		$145,701,032

The Net Worth is 74.8 per cent of Total Assets

CERTIFICATE

(From Audit Report)

We have examined the balance sheet of the Imperial Irrigation District as of December 31, 1970, and the related statements of revenue and surplus for the year then ended. Our examination was made in accordance with generally accepted auditing standards, except as noted, and accordingly included such tests of the accounting records and such other auditing procedures that we considered necessary in the circumstances. The verification of the physical inventories of materials and supplies was limited to a sampling of the counts shown by the perpetual inventory card records and a test of the reconciliation thereof to the general ledger balance. No written confirmation of the receivables was made. We considered the systems of controls in effect adequate to properly reflect the balances of these accounts.

In our opinion, the accompanying balance sheet and statements of revenue and surplus present fairly the financial position of the Imperial Irrigation District at December 31, 1970, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

HUTCHINSON AND BLOODGOOD

By Paul G. Taylor
Certified Public Accountant

WATER

The District's gravity-flow canal and drainage system served an area of 501,369 acres of irrigated farmland in 1970, producing a total of $257,177,900 worth of crops and livestock.

The District served 7,009 water accounts in its 1,062,290 acres. The total acreage, however, includes undeveloped areas, cities, towns, airports, feed lots, etc., the area below the –230 contour Salton Sea reserve boundary and areas covered by the Salton Sea and canals, drains, rivers and railroads.

Of the total of 2,807,817 acre-feet of water received during 1970 at Pilot Knob, 86.13 per cent was delivered to water users, a high degree of efficiency in spite of the difficult circumstances of desert irrigation.

The Water Department's responsibility includes operation and maintenance of the All-American Canal headworks and desilting basins at Imperial Dam, the 80 miles of All-American Canal leading through the Algodones sand dunes (better known as the "American Sahara") to Imperial Valley, 49 miles of the Coachella Branch of the All-American Canal, three miles of New Briar Canal, a 1,641-mile network of other main canals and laterals, and a 1,491-mile system of main and lateral drains.

Water conveyed in the District's canal system serves agricultural, industrial and domestic requirements. All cities and towns in Imperial Valley receive raw water supplied from District canals.

For the 21st straight year, a favorable salt balance was maintained in Imperial Valley soils. A gain of approximately 8.39 per cent was registered in the removal of salt from farm land in Imperial Valley through the District drainage system. A major portion of the salt removed resulted from installation of underground drain tile in individual fields.

Salton Sea collects drainage and storm runoff water from an area of about 7,500 square miles in Imperial and Riverside counties of California and Mexicali Valley, Baja California, Mexico. The present salinity of the sea is slightly greater than ocean water, with 52.47 tons of salt per acre-foot of water. This compares to an ocean water average of 47.80 tons per acre-foot.

The water surface elevation of Salton Sea on December 31, 1970 was –231.90, an increase of .05 of a foot over the preceeding year.

Environmental Safeguards

At the beginning of the century, Imperial Valley was one of the world's cruelest deserts, just a step behind its desolate brother to the north, Death Valley.

As a result of the farsightedness and hard work of its pioneers, Imperial Valley has become what it is today – an area of lush vegetation which produces agricultural crops valued at $250 million annually, attracts countless visitors, and is the permanent home for some 80,000 people.

Along with conversion of the desert to an agricultural wonderland came recreation. Today, Imperial Valley, from the colorful, rugged Chocolate Mountains on the north, to old Mexico on the south, with its famed Salton Sea, has more to offer in recreation than almost any other area in the Southwest – be it hunting, fishing or just plain relaxing in the sun.

The shimmering band of water known as the All-American Canal, with its system of main canals and laterals, has changed the environment from a forbidding desert to a garden spot. Imperial Irrigation District maintains this network of canals, bringing life-giving Colorado River water to the thirsty fields of the desert.

As the watchdog of the ecology of Imperial Valley, the District carries on a constant fight against pollution. Its program of concrete lining of laterals conserves water, at the same time improving the environmental aspects of the area.

Geothermal Development

The District continues to be involved in the development of geothermal resources in Imperial Valley, leasing its land to corporations seeking to develop the geothermal potential of the area. The District has been in constant communication with these developers and is keeping abreast of the progress made in geothermal research the world over.

Development of geothermal wells in Imperial Valley began in 1927, and while no steam was produced, limited amounts of carbon dioxide were extracted from the wells. This production was curtailed in 1954 but exploratory work was resumed three years later.

In 1960, the District leased to private developers lands in the Butte-Niland area near the Salton Sea for potential development of geothermal energy.

First local generation of electric power from geothermal resources began July 1, 1965, from two 1,500-kilowatt units. Because of the extreme corrosivity of the brines encountered and for economic reasons, the entire project had to be discontinued. However, the District continues its interest in the potential development of geothermal energy in Imperial Valley.

There was no geothermal activity in the Salton Sea area during 1970. Geothermal exploration continues in the Cerro Prieto area south of Mexicali, Baja California, Mexico, where a $12-million 75-megawatt plant is now under construction.

DISPOSITION OF WATER DIVERTED AT IMPERIAL DAM AND TRANSPORTED THROUGH ALL-AMERICAN CANAL DURING 1970

	Acre-Feet	Total Acre-Feet
Diverted at Imperial Dam, metered at Station 60		4,534,492
*Diversions at Yuma Projects	532,903	
Diverted to River at Pilot Knob Check	695,889	
Conveyance Loss from Imperial Dam to Pilot Knob Check	54,983	
Total		1,283,775
All-American Canal Below Pilot Knob Check		3,250,717
Diversions to Coachella Branch at Drop No. 1	434,105	
Conveyance Loss from Pilot Knob to Drop No. 1	61,714	
Total		495,819
All-American Canal Below Drop No. 1		2,754,898
Diversions from All-American Canal from Drop No. 1 to and including East Highline Canal	1,169,299	
Conveyance Loss from Drop No. 1 to East Highline Canal	32,652	
Total		1,201,951
All-American Canal Below East Highline Canal		1,552,947
Diversions from All-American Canal from East Highline Canal to and including Central Main Canal	834,201	
Conveyance Loss from East Highline Canal to Central Main Canal	20,813	
Total		855,014
All-American Canal Below Central Main Canal		697,933
Diversions from Central Main Canal to and including West Side Main Canal	688,798	
Conveyance Loss from Central Main Canal to and including West Side Main Canal	9,135	
Total		697,933

**Water diverted to the Yuma Project and its proportionate share of losses are not charged to nor is it a part of water diverted from Imperial Irrigation District and Coachella Valley County Water District. Imperial Irrigation District diverts and transports through the upper section of All-American Canal the Yuma, Arizona, Project's water, in accordance with terms of the All-American Canal Contract.*

MILES OF FARM TILE DRAINS INSTALLED

Year	Miles	Cumulative Total Miles from 1929
1961	857.51	9,028.93
1962	611.01	9,639.94
1963	766.02	10,405.96
1964	993.97	11,399.93
1965	734.52	12,134.45
1966	527.38	12,661.83
1967	634.00	13,295.83
1968	754.33	14,050.16
1969	808.64	14,858.80
1970	1,036.61	15,895.41

NUMBERS OF ACRES TILED

Year	Acres	Cumulative Total Acres from 1929
1961	17,921	286,634
1962	11,485	298,119
1963	10,129	308,248
1964	12,707	320,955
1965	7,958	328,913
1966	6,634	335,547
1967	6,419	341,966
1968	6,046	348,012
1969	6,010	354,022
1970	8,230	362,252

POWER

The District on August 8 put into service a 161-kilovolt transmission line between Niland and El Centro, a vital construction designed to further insure continuity of service of the power system.

Another important construction was the installation of underground distribution facilities in the urban redevelopment area of Indio. This was done by special agreement between the District and the City of Indio. Two 34.5-kv capacitor banks were installed for voltage control at the Brawley Diesel Plant and Coachella substations.

Total capital expenditure on current additions and improvements was $2,304,568, of which $1,485,289 was for the distribution plant. Main expenditures were for transformers, poles and fixtures, station equipment, conductors and devices, meters, services and street lights.

The power load continued to grow at approximately the rate projected in a report made in 1964. The predicted generation requirements for the entire system for 1970 showed a demand of 242 megawatts, while the actual demand was 243.6 megawatts. The projected use for the year was 980,000 megawatt-hours while the actual use was 977,000 megawatt-hours.

Sales revenue during 1970 reached $13,652,153, an increase of $504,965 over the previous year. As of December 31, the District had 40,996 active meters, an increase of 651 over 1969. There were 31,485 residential accounts, 769 agricultural, 6,827 commercial and industrial, and 503 others, a total gain of 750 over the previous year.

Commercial and industrial sales amounted to 48.7 per cent of the total, followed by domestic customers with 44.1 per cent.

At the end of the year, the District had 594.7 miles of transmission and subtransmission lines and 98 substations. Peak load of 243,600 kilowatts occurred September 30 at 3:00 p.m.

The El Centro steam plant supplied 54 per cent of the District's power needs. Hydroelectric generation was 20 per cent and the balance came from contract allotments.

POWER SALES

		Per Cent 1970	Per Cent 1969
Ultimate Consumers			
Domestic	$ 6,023,672	44.1	44.2
Commercial and Industrial	6,647,127	48.7	48.3
Agricultural	570,827	4.2	4.5
Street Lighting	146,558	1.1	1.1
Public Authorities	162,735	1.2	1.2
Inter-Departmental	101,234	0.7	0.7
Total Revenue	$13,652,153	100.0	100.0

POWER REVENUE

Division	*1970*	*1969*	*Increase*
Coachella Section	$ 4,557,398	$ 4,355,637	$201,761
El Centro	3,910,607	3,733,395	177,212
Brawley	1,686,913	1,631,922	54,991
Calexico	1,068,614	1,032,066	36,548
Holtville	706,101	684,894	21,207
Imperial	652,101	636,490	15,611
Calipatria	432,499	439,027	(6,528)
Westmorland	257,298	254,839	2,459
Colorado River	236,687	231,296	5,391
Salton Sea	143,935	147,622	(3,687)
Total Revenue	$13,652,153	$13,147,188	$504,965

Modern drive-in window, El Centro Power Office.

POWER

SOURCES OF POWER REQUIREMENTS

	Per Cent
Hydroelectric	25
Steam Generation	48
U.S. Bureau of Reclamation	23
Axis Plant, Yuma	4

CAPITAL EXPENDITURES ON CURRENT ADDITIONS AND IMPROVEMENTS

Production Plant	$ 18,213
Distribution Plant	1,485,289
Transmission Plant	336,301
Engineering and Supervision	164,242
General Plant	16,368
El Centro - Niland Transmission	284,155
TOTAL	$2,304,568

MAJOR DISTRIBUTION PLANT EXPENDITURES

Transformers	$327,421
Poles and Fixtures	318,345
Conductors and Devices	183,228
Meters	61,947
Services	57,906
Station Equipment	327,049
Underground	137,726
Street Lights	28,175

SOURCES OF POWER

	Nameplate Rating In Kilowatts	
District Owned		
El Centro Steam Plant		186,000
Brawley Diesel Plant		
Diesel	12,000	
Gas Turbine	22,500	
Total Diesel Plant		34,500
Hydroelectric Plants		
Pilot Knob	33,000	
Drop No. 2	10,000	
Drop No. 3	9,800	
Drop No. 4	19,600	
Double Weir	560	
Turnip	420	
Total Hydro		73,380
Total District Owned		293,880
Other Power Sources		
U.S. Bureau of Reclamation		
Glen Canyon (CRSP)	23,200	
Davis Dam	30,000	
Total USBR		53,200
Axis Plant		25,000
Total Other Sources		78,200
TOTAL ALL SOURCES		372,080

PROGRESS IN A FISH EYE — A view through a fish-eye photo lens of the Del Safari Country Club, Coachella Valley. Fifty all-electric homes and condominiums are being built on the golf course to be ready for occupancy in 1971.

SUMMARY OF AREA SERVED

	Acres 1970	1969	1968
Field Crops	494,772	467,261	469,389
Garden Crops	75,217	85,329	78,442
Permanent Crops	7,912	6,954	5,757
Total Acres of Crops	577,901	559,544	553,588
Total Duplicate Crops	142,250	126,804	120,284
Total Net Acres in Crop	435,651	432,740	433,304
Area Being Reclaimed: Leached	1,685	8,560	7,851
Net Area Irrigated	437,336	441,300	441,155
Area Farmable But Not Farmed During Year (Fallow Land)	37,891	33,742	33,282
Total Area Farmable	475,227	475,042	474,437
Area of Farms in Homes, Feed Lots, Corrals, Cotton Gins, Experimental Farms, and Industrial Areas	13,598	14,218	15,624
Area in Cities, Towns, Airports, Cemeteries, Fairgrounds, Golf Courses, Recreational Parks and Lakes, and Rural Schools, Less Area Being Farmed	12,544	12,433	12,498
Total Area Receiving Water	501,369	501,693	502,559
Area in Drains, Canals, Rivers, Railroads, and Roads	71,596	71,563	71,818
Area Below —230 Salton Sea Reserve Boundary and Area Covered by Salton Sea, Less Area Receiving Water	36,257	36,257	35,382
Area in the Imperial Unit not Entitled to Water	63,933	63,933	63,933
Undeveloped Area of Imperial Unit, West Mesa, East Mesa, and Pilot Knob Mesa Units	301,278	300,987	300,741
Total Acreage Included — All Units	974,433	974,433	974,433
Acreage Not Included — All Units	87,857	87,857	87,857
Total Gross Acreage Within District Boundaries	1,062,290	1,062,290	1,062,290

CROP RECAPITULATION

	1969	1970
Field Crops	$ 88,551,000	$ 91,298,000
Vegetable Crops	66,522,000	60,812,000
Livestock & Dairy	88,264,000	101,030,900
Fruit & Nut Crops	988,000	1,033,000
Seed & Nursery Crops	1,939,000	2,751,000
Apiary	338,000	253,000
TOTAL	$246,602,000*	$257,177,900

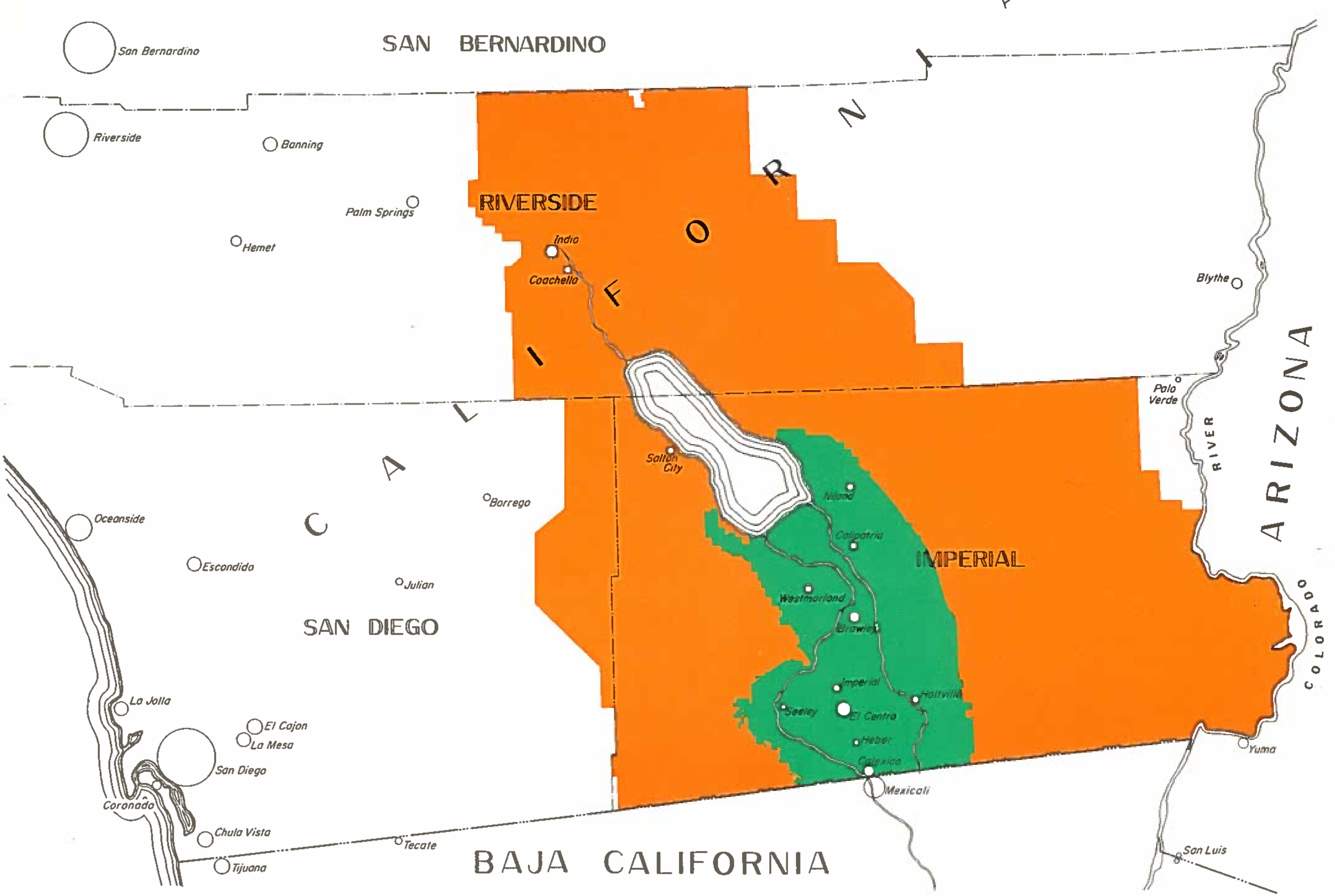
**Revised by Office of Imperial County Agricultural Commissioner*

GROSS VALUATION OF LEADING CROPS

Lettuce	$31,373,000
Hay, Alfalfa	28,182,000
Sugar Beets	22,898,000
Cotton Lint	14,550,000
Cantaloupes	10,313,000
Wheat	7,250,000
Sorghum	6,812,000
Barley	5,148,000
Pasture	4,104,000
Carrots	3,460,000
Tomatoes	3,306,000
Onions	2,547,000
Asparagus	2,371,000
Watermelons	2,102,000
Cabbage	1,705,000
Cotton Seed	1,552,000

Imperial Valley farmer inspects sugar beet field. Sugar beets continue as the Valley's third most valuable crop producing a revenue in 1970 of $22,898,000. More than 63,000 acres were planted to this crop.

GREEN — Water and Power Service Area
ORANGE — Power Service Area only



EDITED AND PUBLISHED BY
IMPERIAL IRRIGATION DISTRICT

IMPERIAL PRINTERS EL CENTRO, CALIF.