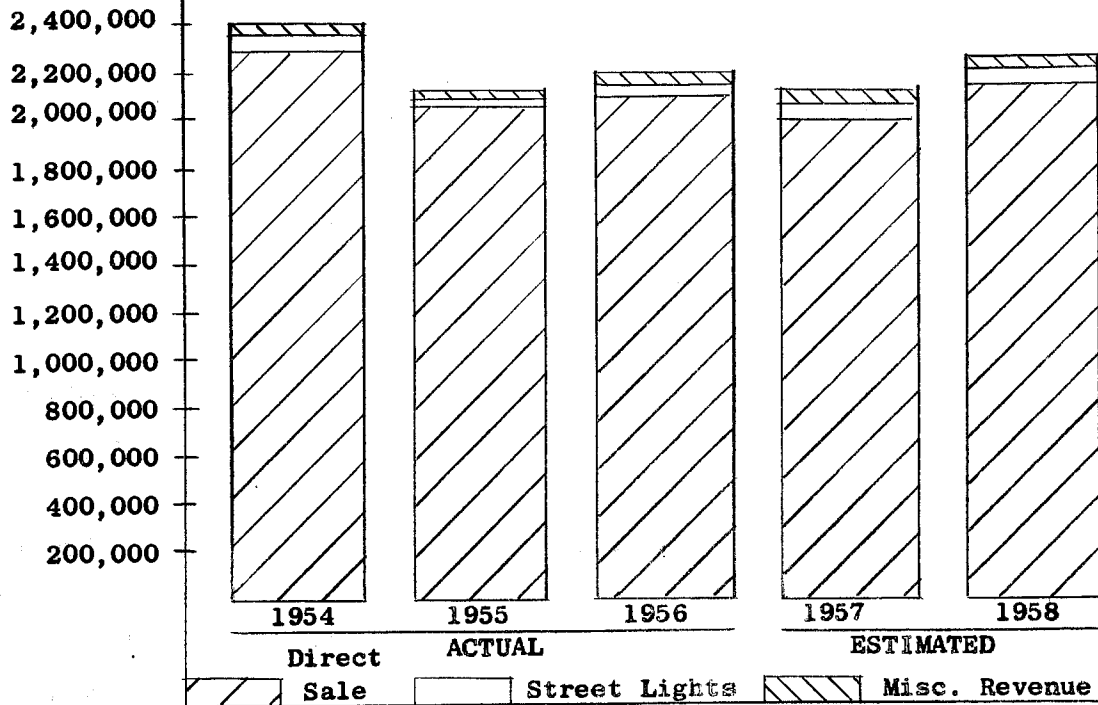


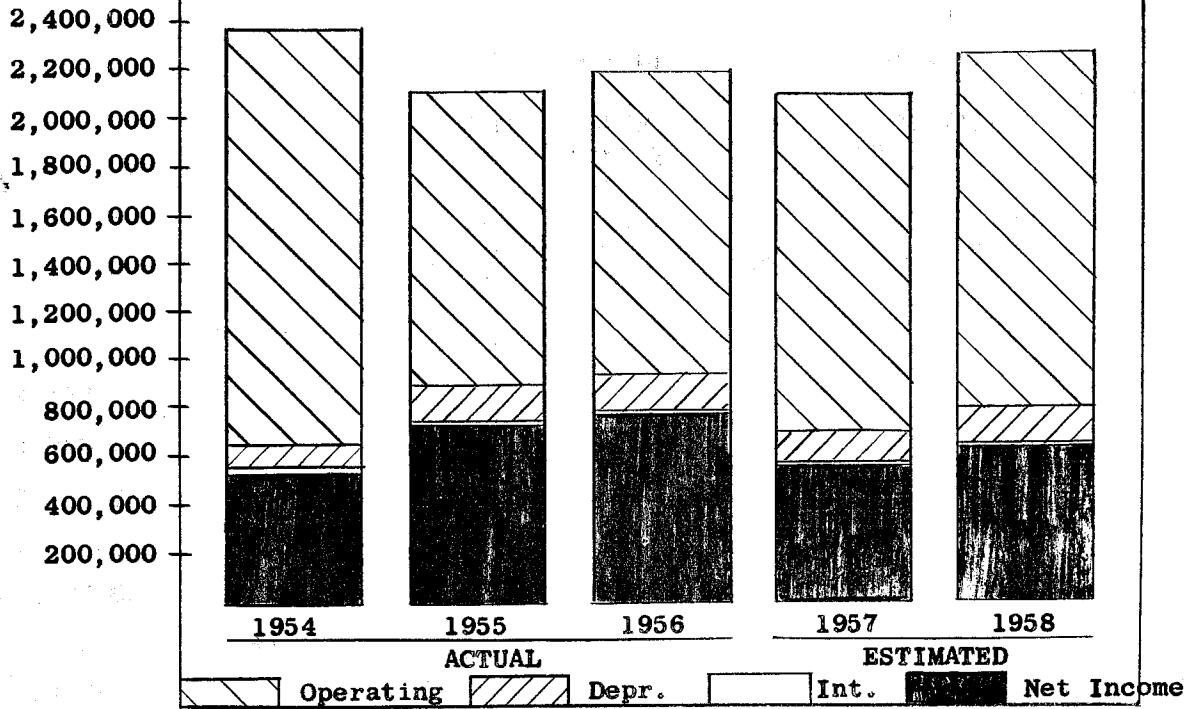
ELECTRIC UTILITY FUND BUDGET

**City of Anchorage, Alaska
1958**

**ELECTRIC UTILITY OPERATING REVENUES
FIVE YEAR COMPARISON**



**ELECTRIC UTILITY OPERATING REVENUE DISTRIBUTION
FIVE YEAR COMPARISON**



**ELECTRIC UTILITY FUND
1958 BUDGET**

BUDGET SUMMARY

	<u>Estimated 1957</u>	<u>Estimated 1958</u>
Estimated Revenues	\$ 2,138,100	\$ 2,268,200
Depreciation	<u>161,500</u>	<u>178,757</u>
TOTAL FUNDS AVAILABLE.....	\$ 2,299,600	\$ 2,446,957
ESTIMATED EXPENDITURES:		
Generation Expense	\$ 48,645	\$ 58,710
Purchased Power	<u>764,400</u>	<u>813,420</u>
TOTAL COST OF POWER	<u>813,045</u>	<u>872,130</u>
Distribution Operation	108,220	112,990
Distribution Maintenance	<u>54,920</u>	<u>60,160</u>
TOTAL DISTRIBUTION EXPENSE	<u>163,140</u>	<u>173,150</u>
Customers' Accounting & Billing Expense	146,380	152,234
Administrative and General Expense	128,019	127,075
Clearing Accounts	<u>10,864</u>	<u>10,087</u>
TOTAL ACCOUNTING & ADMINISTRATIVE	<u>285,263</u>	<u>289,396</u>
OTHER EXPENSES	220,935	259,660
TRANSFER TO THE GENERAL FUND	322,794	383,589
CONSTRUCTION FUND *	<u>379,876</u>	<u>418,500</u>
TOTAL EXPENSES.....	\$ 2,185,053	\$ 2,396,425
UNAPPROPRIATED RESERVE	<u>114,547</u>	<u>50,532</u>
TOTAL EXPENSES AND UNAPPROPRIATED RESERVE.....	\$ 2,299,600	\$ 2,446,957

* Construction Fund
5% of \$4,794,860 \$239,743
Depreciation 178,757
\$ 418,500

**ELECTRIC UTILITY FUND
1958 BUDGET**

<u>Code</u>		<u>Estimated 1957</u>	<u>Estimated 1958</u>
	<u>OPERATING REVENUES</u>		
E 600	Residential & Domestic	\$ 765,600	\$ 808,000
E 602	Commercial and Industrial	1,074,500	1,150,000
E 603	Public Street Lighting	58,800	63,000
E 604	Sales to Other Public Authorities	49,000	52,400
E 606	Water Heating	102,700	103,000
E 607	Other Department Sales	42,800	45,800
E 612	Customer's Forfeits & Discounts	15,500	16,500
E 614	Service Customers Installations	4,200	4,500
E 615	Miscellaneous Electric Revenues	25,000	25,000
	Total Operating Revenue.	<u>\$ 2,138,100</u>	<u>\$ 2,268,200</u>
	<u>NON-OPERATING REVENUE</u>		
	Depreciation Reserve	<u>161,500</u>	<u>178,757</u>
	TOTAL RESOURCES	\$ 2,299,600	\$ 2,446,957

EXPLANATION OF ELECTRIC REVENUE ESTIMATES:

Electric revenues are somewhat difficult to forecast due to the several rate changes in the past three years, since historical trends lose their value. This estimate is based upon forecast of use in the classes and the average revenue per K.W.H. for that class; this is then checked by average trends in the class.

E 600 Residential is expected to increase 7% over the estimated 1957 revenues.

E 602 Commercial is expected to increase a like amount, experience during 1957 has been somewhat less, but with the construction of new buildings, the 1958 revenues will increase over 1957 an estimated amount of 7%.

E 603 Public Street Lighting is also set at 7%. There is about this amount of additional street lights contemplated during 1958.

E 604 Sales to Other Public Authorities, which is the Civil Aeronautics Administration at International Airport, is following the general trend of 7% increase.

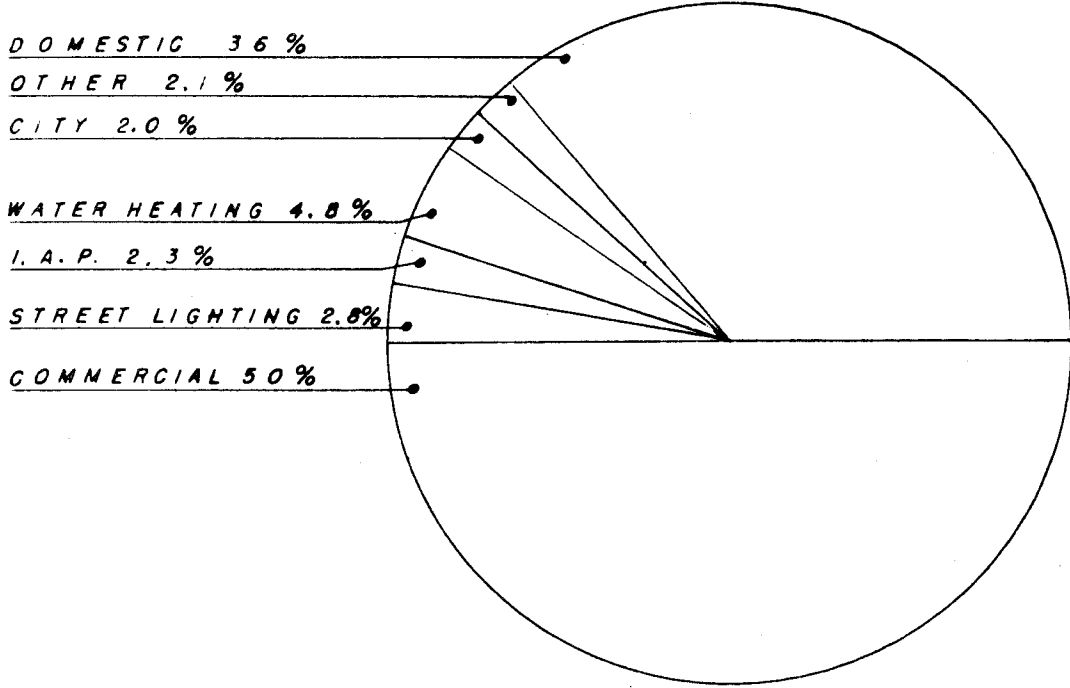
E 606 Water Heating. It is assumed there will be no change. It is expected that natural increases will be offset by change of rate from water heating to D-2 Residential.

E 607 Other Departmental Sales. It is expected this account will follow the general trend of 7% increase.

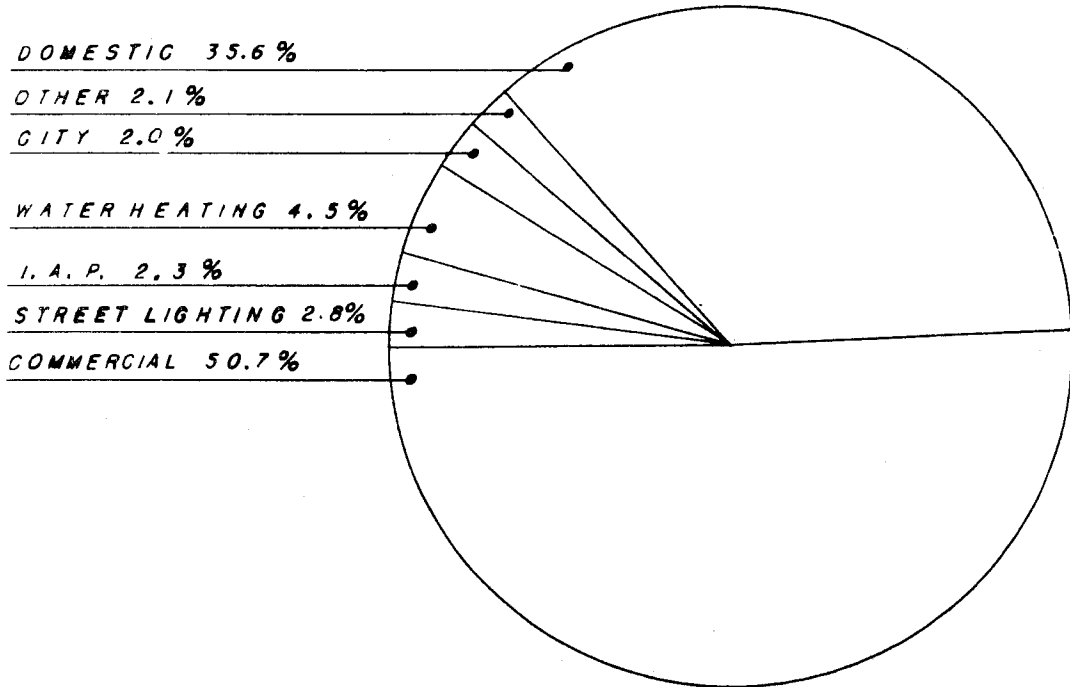
E 612 Customer's Forfeits and Discounts.

E 614 Servicing Customer's Installations

R E V E N U E D I S T R I B U T I O N



1 9 5 7 R E V E N U E D O L L A R



1 9 5 8 R E V E N U E D O L L A R

E 615 Miscellaneous Electric Revenue.

These three accounts are not affected by rates charged for electricity and are estimated on known charges and past experiences.

The revenue estimate for 1957 and 1958 indicates earnings slightly in excess of expenses, plant additions and other costs. These funds are shown as being credited to reserve account. It is suggested that a policy be established to call this reserve a reserve for emergency and it be allowed to grow to a predetermined level. Funds from this reserve to be used only for disaster such as severe storm, act of war or extreme business catastrophe.

COMPARATIVE STATISTICS

	1967		% Over 1956	1958 Estimated	% Over 1957
	1956	Actual 7 Mo. Est. 5 Mo.			
Power Sales					
Commercial	32,157,940	35,533,444	10.5	38,100,000	7.2
International Airport	2,220,800	2,466,852	11.0	2,638,000	6.9
Residential	17,904,339	20,954,755	17.0	22,200,000	5.9
Water Heating	5,879,982	5,183,084	11.9	5,046,400	2.6
City Use	2,842,070	3,262,174	14.8	3,490,400	7.0
Total K.W.H. Sold	<u>61,005,131</u>	<u>67,400,309</u>	<u>10.48</u>	<u>71,474,800</u>	<u>6.0</u>

Power Sales Revenue \$ 2,154,281. \$ 2,093,400
 Average Revenue per K.W.H. (Total) .035313 .031059

Average Number of Meters (By Class)

Commercial	1,680	1,680		1,688	.47
Residential	6,187	6,211	.38	6,230	.31
Water Heating	1,186	934	(21.24)	846	(.94)
Total Average Number of Meters	<u>9,053</u>	<u>8,825</u>	<u>(2.52)</u>	<u>8,764</u>	<u>(.69)</u>

Average Revenue per K.W.H. (By Class)

Commercial	.034962	.030239		.030183	
International Airport	.022758	.019863		.019863	
Residential	.042715	.036535		.036396	
Water Heating	.019811	.019814		.020410	
City Use	.034522	.031144		.031139	

Average KWH per Month per Customer (By Class)

Commercial	1,595.13	1,763.62		1,880.92	
International Airport	185,067.00	205,571.00		219,839.00	
Residential	241.15	281.15		296.95	
Water Heating	413.15	462.45		497.08	

ELECTRIC UTILITY EXPENDITURES

<u>Code</u>		<u>Estimated 1957</u>	<u>Estimated 1958</u>
	<u>DIESEL GENERATION OPERATION EXPENSE</u>		
727	Operation Supervision & Engr.	\$ 5,900	\$ 6,000
728.1	Engine Labor	8,000	10,800
728.3	Miscellaneous Station Labor	2,400	2,400
729	Engine Fuel	6,740	12,000
730.1	Water	165	180
730.2	Lubricants	100	300
730.3	Station Supplies	450	600
730.4	Station Expense	500	600
	Total Diesel Operation Expense. . .	\$ 24,255	\$ 32,880
	<u>DIESEL MAINTENANCE EXPENSE</u>		
731	Maintenance Supervision & Engr.	\$ 5,800	\$ 6,000
732	Structures & Improvements	700	1,200
733	Fuel Holders	600	600
734.1	Engines	16,120	15,000
734.2	Generators	180	1,200
734.3	Accessory Electric Equipment	260	600
734.4	Power Plant Equipment	700	1,200
735	Rent	30	30
	Total Diesel Maintenance Expense. . .	\$ 24,390	\$ 25,830
	TOTAL DIESEL OPERATION AND MAINTENANCE.	\$ 48,645	\$ 58,710
738	Purchased Power	\$ 764,400	\$ 813,420
	TOTAL COST OF POWER	\$ 813,045	\$ 872,130
	Estimated Kilowatt Hours	72,400,000	78,200,000
	Estimated Average cost - mills per KWH	11.2	11.1
	<u>DISTRIBUTION OPERATION EXPENSE</u>		
756	Supervision and Engineering	\$ 9,000	\$ 9,200
757	Load Dispatching	7,500	9,000
758.1	Distribution Maps & Records	16,500	20,000
758.2	Distribution Office Expense	300	360
759.1	Station Labor	700	600
759.2	Station Supplies	240	240
760.1	Station Storage Batteries	180	90
761.1	Overhead Lines	11,200	11,400
761.2	Underground Lines	900	1,200
761.3	Remove & Reset Transformers	17,000	15,000
762.1	Remove and Reset Meters	32,500	33,000

762.2	Other Services on Customers Premises	7,200	3,600
762.25	Free Services	- - -	3,600
763.1	Operation Street Lights	1,000	900
763.12	Operation Traffic Signals	4,000	4,800
	Total Distribution Operations. . .	\$ 108,220	\$ 112,990

DISTRIBUTION MAINTENANCE EXPENSE

764	Engineering and Supervision	\$ 8,400	\$ 9,200
765	Structures and Improvements	3,000	2,600
766	Station Equipment	1,500	2,400
767	Storage Battery Equipment	200	240
768.1	Poles, Towers and Fixtures	8,200	9,000
768.2	Overhead Conductors	9,600	12,000
769.2	Underground Conductor & Device	300	600
770	Distribution Transformers	4,800	4,800
771	Services	4,700	4,800
772	Meters	350	900
773	Installations on Customers' Premises	70	120
775	Street Lights	11,200	10,800
778	Signals	2,400	2,400
776	Rents	200	300
	Total Distribution Maintenance. . .	\$ 54,920	\$ 60,160

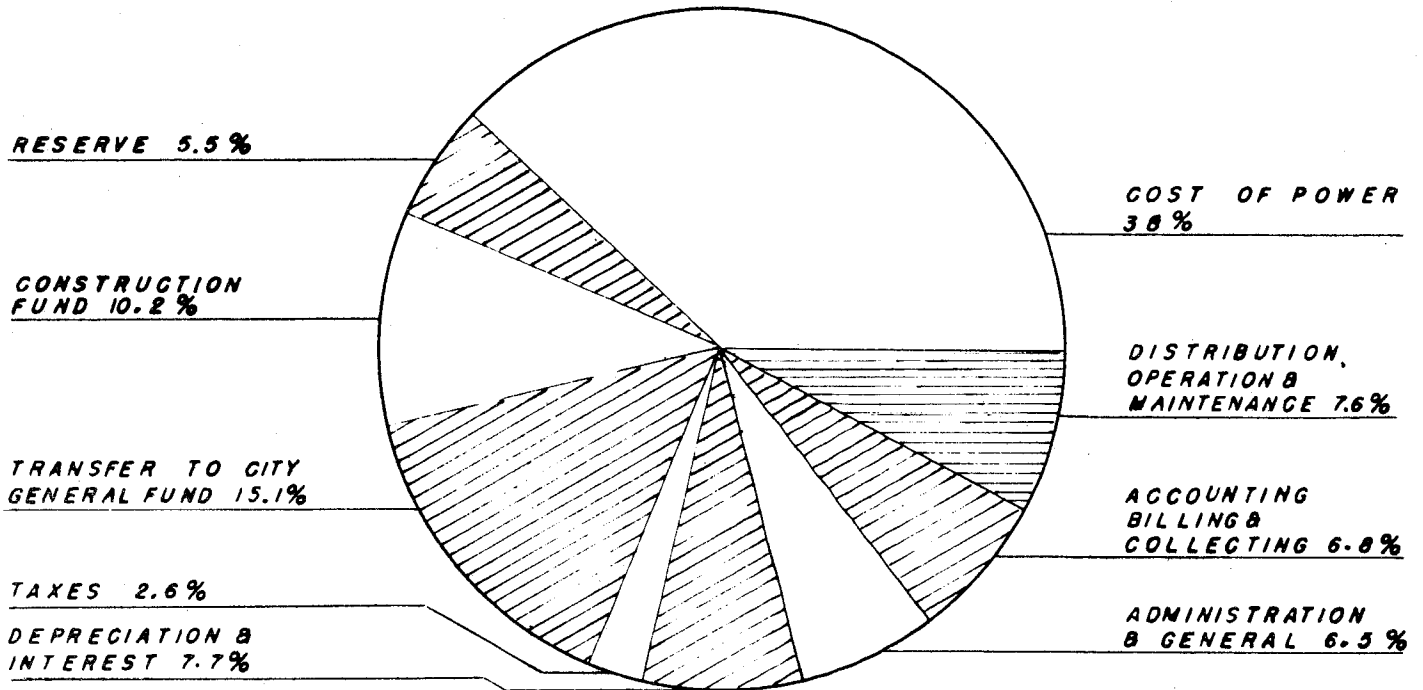
ADMINISTRATIVE & GENERAL EXPENSE

790	Salary of General Officers	\$ 14,456	\$ 15,985
791	Other General Office Salaries	16,628	16,830
792.1	Expense of General Officers	440	480
793	General Office Expense	6,000	6,000
795	Special Services	18,000	20,000
796	Legal Services	12,410	12,600
798	Insurance Loss & Damage	15,330	8,000
799	Insurance Injury & Damage	14,425	13,500
800.1	Employees Welfare	2,200	4,800
800.2	Pensions	4,260	4,260
801	Miscellaneous General Expense	500	500
802.1	Maintenance Structure & Improv.	100	300
802.2	Maintenance General Office Furniture	100	300
802.3	Maintenance of Communication Equip.	6,000	6,000
802.4	Maintenance Miscellaneous Property	250	600
803	Rents	16,920	16,920
	Total Administrative Expense. . .	\$ 128,019	\$ 127,075

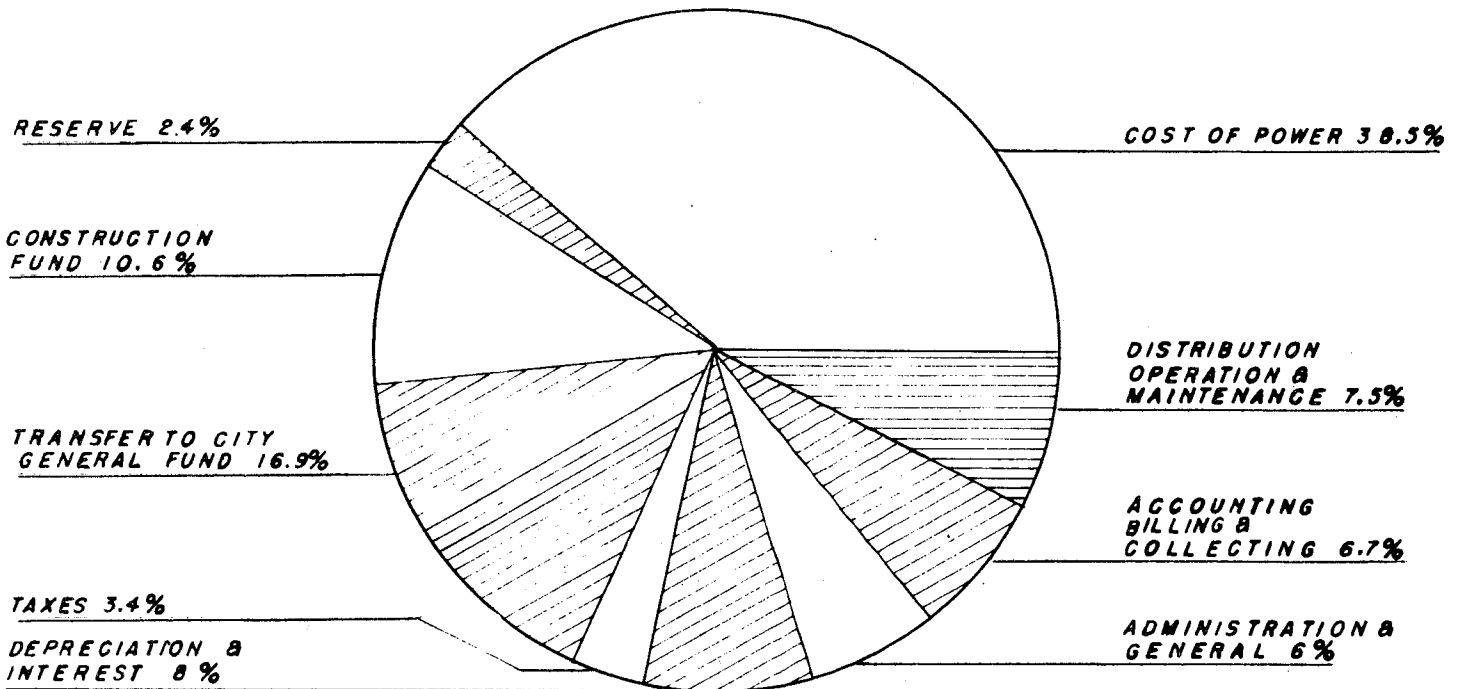
CUSTOMERS' ACCOUNTING & COLLECTING

780.3	Meter Reading	\$ 25,200	\$ 25,800
781	Billing and Collecting	112,680	119,434
783	Uncollectible	4,000	4,000
787.2	Advertising	4,500	3,000
	Total Customers' Accounting and Collecting. . .	\$ 146,380	\$ 152,234

E X P E N S E D I S T R I B U T I O N



1 9 5 7 E X P E N S E D O L L A R



1 9 5 8 E X P E N S E D O L L A R

<u>Code</u>		<u>Estimated 1957</u>	<u>Estimated 1958</u>
	<u>CLEARING</u>		
902	Stores	\$ 7,837	\$ 7,837 *
903	Transportation	-- --	-- --
904	Laboratory	800	-- --
905	Shop	2,000	2,000
909	National Guard Leave	227	250
	Total Clearing	<u>\$ 10,864</u>	<u>\$ 10,087</u>
	TOTAL ACCOUNTING & ADMINISTRATION	\$ 285,263	\$ 289,396

* \$7,837 is 35% of \$23,392

	<u>OTHER EXPENSES</u>		
503	Depreciation	\$ 161,500	\$ 178,757
507	Operating Tax	55,085	76,553
530	Interest	4,350	4,350
	Total Other Expenses	<u>\$ 220,935</u>	<u>\$ 259,660</u>
	TRANSFER TO GENERAL FUND	\$ 322,794	\$ 383,589
	CONSTRUCTION FUND	\$ 379,876	\$(239,743)
			(178,757)
			<u>\$ 418,500</u>
	TOTAL EXPENSES	\$ 2,185,053	\$ 2,396,425
	Estimated Capital	\$ 4,794,860	
	Net	3,645,373	

1958 MAINTENANCE AND OPERATION

Cost of Power: This sub-total contains complete cost of power to the City and is increased \$59,085. This increase is due to the increase in the sale of power. It is estimated the City will purchase 78,000,000 K.W.H. of electrical energy from the Bureau of Reclamation and generate 230,000 KWH. Each item represents an increase over 1957. The increase of purchased power is \$49,020 and the increase of Diesel operation and maintenance is \$10,065. The Diesel increase is mainly for engine fuel, engine operating labor and maintenance of generators and power plant equipment.

Distribution Operations: These accounts show an increase of \$4,770 which reflects only the slight increase due to increased business.

Distribution Maintenance: These accounts show an increase of \$3,240 which is in line with the growth of business. It is assumed that the City will have no large street improvement program and therefore no large pole re-location expense except for Gambell Street which will be covered by a work order.

Administrative and General Expense: These accounts show a slight decrease of \$944. This is mainly due to decrease in estimated cost of insurance.

Customers' Accounting & Billing: Customers accounting and billing shows a slight increase of \$6,754. These expenses are estimated by the Controller and City Clerk and are not subject to our control.

Clearing Accounts: These accounts remain essentially the same as last year.

Other Expenses: Depreciation shows a normal increase as it is a percentage set as a percentage of the net plant value by the Controller.

Operating tax shows an increase and is based on a 21-mill tax rate against the net plant value of the system.

Interest shows no change since the outstanding bonds are the same amount.

Transfer to General Fund: This is set by City policy as 8% of the gross plant value.

CONSTRUCTION FUND

MINOR ITEMS

<u>Work</u>		
<u>Order</u>		
1-258	Purchase and Install Transformers	\$ 25,000
2-360	Purchase and Install Meters	15,000
3-359	New Service	12,000
4-377	Purchase Tools and Equipment	400
5-372	Purchase Office Equipment	875
6-373	Transportation Equipment	1,510
7-378	Communication Equipment	9,800
8-363	Purchase and Install Street Lights	20,000
9-376	Purchase Laboratory Equipment	2,160
10	Several Install short line extensions	20,000
11	Several Miscellaneous plant replacements	25,000
	Total Blanket Work Orders	\$ 131,745

MAJOR ITEMS

Traffic Signals	\$ 31,000
Fourth Alley Cable	108,000
Sixth Avenue Street Lights	19,000
Spenard Substation	20,000
Gambell Street Rebuild	10,000
Spenard Rebuild	50,000
South Addition Primaries	20,000
Line extensions to new areas	28,755
Total Major Items	\$ 286,755

TOTAL CONSTRUCTION FUND	\$ 418,500
-------------------------	------------

Detail of Minor Construction Fund

E 1-358	Purchase and Install Transformers		\$ 25,000
E 2-360	Purchase and Install Meters		15,000
E 3-359	New Services		12,000
E 4-377	Purchase Tools and Equipment		
	1 - Ideal Therogrop Brazing Machine		400
E 5-372	Purchase Office Equipment		
	1 - 4 drawer legal file	\$ 75	
	2 - Office chairs		
	3 - Drafting Chairs	250	
	1 - Drafting Table	<u>550</u>	875
	File is additional, chairs and table replace old or broken equipment.		
E 6-373	Transportation Equipment		
	Winch for digging machine	\$ 810	
	Stabilizing jacks	<u>700</u>	1,510
E 7-378	Communication Equipment		
	Radio Channel for telemetering	1,200	
	Radio Channel for remote radio	2,500	
	City Engr. Base station	\$1,060	
	City Engr. 4 mobile units	<u>2,200</u>	3,260
	Police Dept. 4 mobile units	2,200	
	M. L. & P. Dept. added unit	<u>640</u>	9,800
E 8-363	Install Street lights & signal		20,000
E 9-376	Laboratory Equipment		
	Rubber Blanket Tester	1,250	
	Relay Tester	700	
	Radio Tube Checker	180	
	Voltmeter	<u>30</u>	2,160
E 10 Several	Install short line extensions		20,000
E 11 Several	Miscellaneous Plant replacements		<u>25,000</u>
	Total		\$ 131,745

Minor Items:

This group consists of routine work orders which are considered each year and approved as blanket work orders.

Work Order No. E1 - Purchase and Install Distribution Transformers.

Work Order No. E2 - Purchase and Install Meters. This has been increased from \$12,000 to \$15,000. This increase is necessary because the new rate structure requires use of meter types not now in stock.

Work Order No. E3 - New Services remains the same at \$12,000.

Work Order E4 - Tolls and Work Equipment has been reduced from \$5,615 to \$4,000.

Work Order E5 - Office Equipment has been reduced from \$3,840 to \$875.

Work Order E6 - Transportation Equipment. New equipment required by the department will be furnished on a rental basis by the Central Garage, except \$1,510 worth of additional equipment for the digger truck.

Work Order E7 - Communication Equipment, increased from \$1,000 to \$9,800. This work order has been increased to include new equipment required by other departments, which will be rented by them, in the amount of \$5,460. The balance is for one additional unit for department use on new line truck, plus radio channels for control of the Department transmitter on DeBarr Road and the provision of a telemeter channel from the Goose Lake Substation.

Work Order E8 - Street Lights and Signal Systems. This work order is set up at \$20,000 or \$10,000 less than 1957, and it is intended to include only miscellaneous small projects. Any large lighting or signal additions will be covered by specific work orders.

Work Order E9 - Laboratory Equipment. This work order has been increased \$1,460 to include purchase of safety equipment and a relay test device. The City now has no program or equipment to adequately test substation overload relays.

Work Order E10 - New Short Line Extensions. This work order has been increased to \$20,000 to cover cost of small extensions to new customers.

Work Order E11 - Miscellaneous Plant Replacements. This work order is essentially the same amount as 1957 and covers replacement of small major plant items due to deterioration or overload.

Major Items:

Complete purchase and installation of Radio control on traffic signals. \$ 31,000

Install primary and secondary cable in 4-5 Alley "A" to "I" Street and 3rd Alley "E" to "F" Street	108,000
Sixth Avenue Street lights	19,000
Construct new substation in Spenard	20,000
Reconstruct lines on Gambell Street due to BPR grade changes	10,000
Rehabilitate lines in Spenard. This involves replacement of numerous poles and some wire changes	50,000
Install 4160 KV loop lines in south addition due to increased load	20,000
Install new primary extensions over \$1,000 limit	28,845
Total	\$ 286,845

SYSTEM DISTRIBUTION CAPACITY

Included in this presentation is a tabulation of system substations showing the name plate capacity, the station capacity estimated peak for the winter of 1957-58 and the expected peak up to December 31 of 1958.

Distribution substation system capacity must of necessity be somewhat greater than the system peak, because some isolated station cannot be loaded to the optimum amount.

Stations located in main parts of town are interconnected and load can be transferred from one to another to accomplish a satisfactory distribution of load among the various stations.

Stations such as International Airport, Government Hill (5) and First and Sitka, (10) are separate from the main system and presently have no inter-connection with other stations to have to be studied separately.

Government Hill - number 5, is a 2,000 KVA unit. During the winter of 1956-57 the peak on this station was 1,920 KVA. The expected peak during 1957-58 is 2,100 KVA, which indicates something must be done during the budget year of 1958. Either of two or both of the following feeders should be built. (1) A tie line between station 10 and 5. This involves 2,850 feet of new line but allows only a limited load transfer because station 5 will soon be loaded. (2) A tie line between Station 5 and 3. This requires 350 feet of new line and 5,700 feet of replacement. This would allow ample load transfer at present plus running the tie line to the area proposed for the next additional substation.

The next additional substation is proposed to be installed on land leased from the railroad near First and "H" Streets where the present 34.5 KV line crosses the terminal reserve. This station will be a 3,000 KVA unit now held as a spare.

Design: Design of this station will be made during 1958 for installation in 1959. It is proposed to be a totally enclosed type with all circuits, in-going and out-going, underground. Camouflage of the station will be done in cooperation with the ideas of the Planning Commission commensurate with the aesthetic tone of the area in which it is to be installed.

The initial area served will be all west of "I" Street and North of Sixth to Ship Creek, plus a considerable portion of the industrial area now served by station 5. As station 3 becomes more fully loaded, this new station will assume some of the area now served by station 3.

International Airport substation capacity is 1,000 KVA. During 1956-57, the load was approximately 400 KVA, which indicates there is plenty of room for growth.

The accompanying graphs of energy and capacity indicate the point at which our contract committment from Eklutna will be exhausted, this point being 1957.

You will note that this fact coincides with the prediction contained in a report dated November 20, 1956. You will also note that the incremental increase used in this prediction is 8% whereas the incremental increase used in the power report of 1956 was 10%. The 8% more nearly reflects the present rate of increase, this may and probably will be changed for 1959 and subsequent years.

The point at which the existing diesel capacity and energy will be exhausted is shown on the graphs as being 1961; therefore, it is imperative that some policy be set regarding the procurement of additional capacity and this policy should be determined not later than December 1957.

There are several avenues that can be pursued that will delay the actual installation of additional generating facilities by the City; however, these are in such a nebulous state that a firm policy should be decided upon, but should any of these other sources of capability become available the actual installation of new equipment by the City could be delayed. Listed below are some of these possible sources of capacity the use of which could delay the installation of equipment by the City.

1. An extremely good water supply could provide a substantial block of power over and above our contract allocation from Eklutna.
2. The Bureau of Reclamation might be sucessful in consummating their energy exchange agreement with the Military.
3. The Chugach Electric Association might offer to sell power from the Knik Arm Steam plant at a sufficiently attractive rate to justify our entering into a contract for its purchase.
4. The formation of a power pool, if participation included all generating agencies in the area, would definitely forestall the installation of additional capacity by the City.

All of the foregoing require action by some other agency. The City has been cognizant of each of these methods as a means of obtaining additional capacity for the City for two or three years but as yet nothing concrete has developed. The day for positive action is fast approaching, to provide the additional capacity required to serve electricity to the City's customers.

Other 2400/4160 volt stations have had load transferred to keep them in good operating limits.

A 3750 KVA station was installed during 1957 at Anchor Park. This has completely relieved the situation and left room for growth.

The 1000 KVA station at Northern Lights Blvd. was overloaded during the winter of 1956-57; however, and an additional temporary 1000 KVA station is to be placed in service. Permanent arrangements for this station should be made during the 1958 budget year, if CEA-City boundary agreement can be accomplished.

DISTRIBUTION SUBSTATION CAPACITY

Station No.	4160 Volt	Station Capacity	1957-58 Est. Winter Peak
1		1500	1400
2		1500	1200
3		5000	4500
4		1500	1550
5		2000	2100
6		2000	1900
10		1500	1000
IAP		1000	500
Reserve		<u>3000</u>	<u>0</u>
Total 4160 Volt		19,000	14,150
7200 Volt System			
Anchor Park		3750	1400
Northern Lights Blvd.		1000	800
Reserve		<u>1000</u>	<u>500</u>
Total 7200 Volt		5750	2700
Total System Station Capacity		24,750 KW	16,850 KW

10 YEAR POWER FORECAST

The Department has made a 10 year power requirement forecast in the past but they have been used primarily in the preparation of generation power requirement reports, etc. Since a power forecast is vital to our overall system planning, it should be incorporated as a part of the budget. This forecast will be brought up to date annually, revising the rate of increase commensurate with the economic pulse of the area.

The forecast included in this year's budget covers the period 1948 through 1966, the figures for 1948 through 1956 being included to indicate the trend.

POWER ESTIMATE AS OF SEPTEMBER 1957

FOR 1958 BUDGET

Year	Peak Load KWH	Annual MWH
1948	6,700	23,750
1949	7,650	27,570
1950	8,450	29,895
1951	11,300	35,291
1952	12,100	43,414
1953	12,140	48,522
1954	12,040	50,222
1955	13,800	59,019
1956	15,020	67,024
1957	15,800 *	72,400 *
1958	17,000	78,200
1959	18,500	84,700
1960	19,900	91,200
1961	21,500	98,500
1962	23,200	106,400
1963	25,000	114,400
1964	26,900	123,100
1965	29,100	133,200
1966	31,300	143,400

* Base for extrapolation at 8% cumulative per annum

