



1941

ANNUAL REPORT
BOARD OF PUBLIC WORKS

Grand Haven
Michigan

TWELFTH ANNUAL REPORT
OF THE
BOARD OF PUBLIC WORKS
GRAND HAVEN, MICHIGAN

For the fiscal year ended
September thirtieth
Nineteen Hundred Forty-one

**MUNICIPAL
POWER AND LIGHTING
SYSTEM**

1896 — 1941

Cover—Electric Fountain in Central Park
Page 2—Power Plant on Grand River
Page 10—Autumn Scene in Central Park



ADRIAN H. RINGELBERG
President

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ARTHUR G. WALTER
ABRAM J. WESSEL

J. BRYAN SIMS
Superintendent

THE ANNUAL REPORT

The Board of Public Works submits for your information the twelfth annual report of the operations of the Grand Haven Municipal Electric System for the fiscal year ending September 30, 1941, with comparative figures taken from the audit of the city finances recently completed by the firm of Maihofer, Moore & DeLong.

Operating revenues for the year under review increased \$37,116.36 over the previous year, an increase of 14.8%. Electrical consumption by customers increased substantially. The greatest increase was shown by the power users with an increase of 33.2%, followed by the commercial users with an increase of 18.2% and the residential users having an increase of 18%. The average yearly kilowatt hour consumption by residential users in Grand Haven increased 145 kilowatt hours over 1940. The total number of residential meters increased 111.

Power Plant operating expenses increased \$22,064.28 due principally to increased fuel consumption as a result of larger loads. It was necessary to operate the steam plant to supplement the Diesel plant which resulted in some increase of expenses. Fuel oil prices also increased compared with the previous year. General salary increases were made in all departments during the year.

Distribution and Utilization expenses for the year decreased slightly which, in addition to the reduction of \$1,248.52 in general expenses, brought the increase in total operating expenses to \$20,613.51, or an increase of 21.5% over the previous year.

Voluntary city and school taxes were paid in the amount of \$5,167.98. \$15,600.00 was paid into the general fund of the city compared with \$20,600.00 the year previous.

There was a slight increase in the per cent of net income compared to gross income in 1941 over 1940. The rate reduction put into effect in June was expected to reduce the amount of net and gross during the coming year.

Total current assets decreased \$6,851.67, and were \$82,502.96 which included operating cash on deposit, accounts receivable, inventory of materials and supplies and paid up insurance.

Other assets amounted to \$29,211.00 which was the insurance reserve at the end of the fiscal year.

Total current liabilities increased \$5,019.46, and were \$16,308.54 which represented unpaid invoices for materials, supplies and services. These amounts were paid in October 1941.

COMMENTS OF AUDITORS

The following are excerpts from comments of the yearly audit:

"Operating revenues and operating expenses increased, the increase in operating revenues being considerably greater than the increase in operating expenses, and the resulting net increase in net operating revenue was approximately the increase in the net income to surplus.

"The increase in operating revenues was represented principally by increased revenues from the sales of residence and commercial light and commercial power, although all revenue divisions showed increases.

"Operating expenses increased in some divisions and decreased in others. The very substantial increase in power plant supplies and expenses, both Diesel and steam, was the effective factor in the net increase in operating expenses. The major increase in power plant supplies and expenses was in the amount of fuel used. The increase in kilowatt hours generated necessitated the use of more fuel at increased cost.

"The number of kilowatt hours generated for the two years were as follows:

Kilowatt hours generated in the year ended September 30,
1941 14,308,600

Kilowatt hours generated in the year ended September 30,
1940 11,367,100

Increase in kilowatt hours generated—2,941,500

Moving Bedplate and Crank Shaft of New 2 Cycle, 225 RPM., 3850 BHP. Nordberg Engine into Building. Weight Approximately 60 Tons



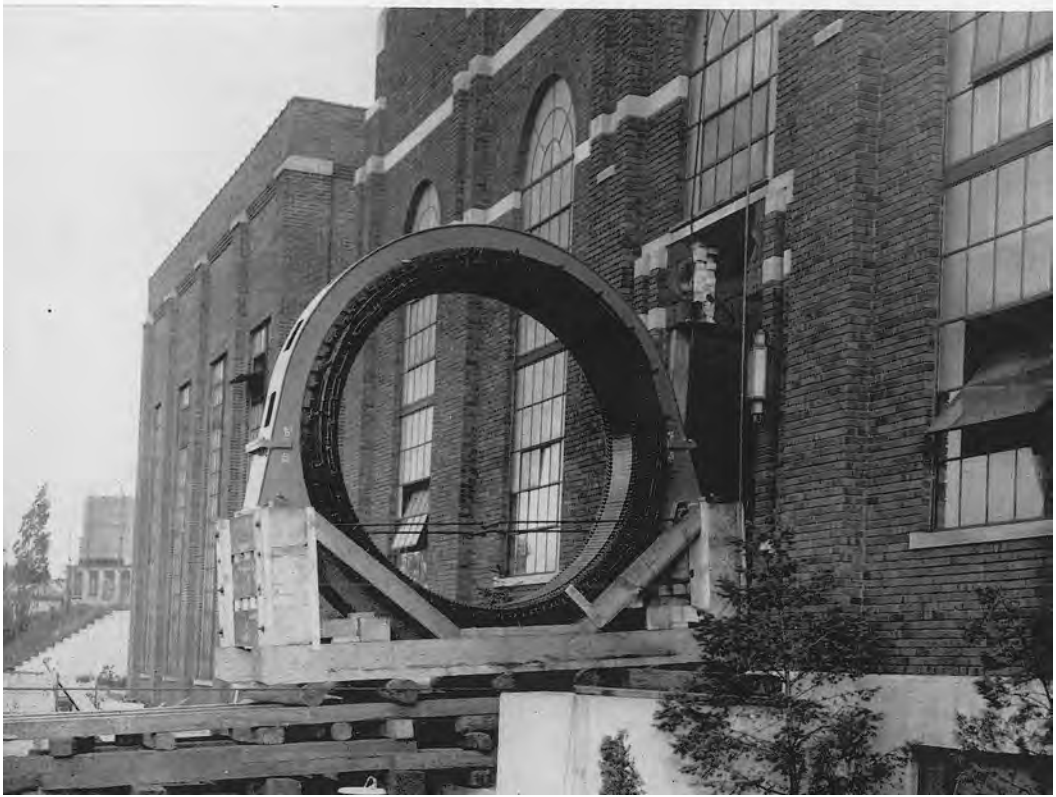
ON A KILOWATT HOUR GENERATED BASIS

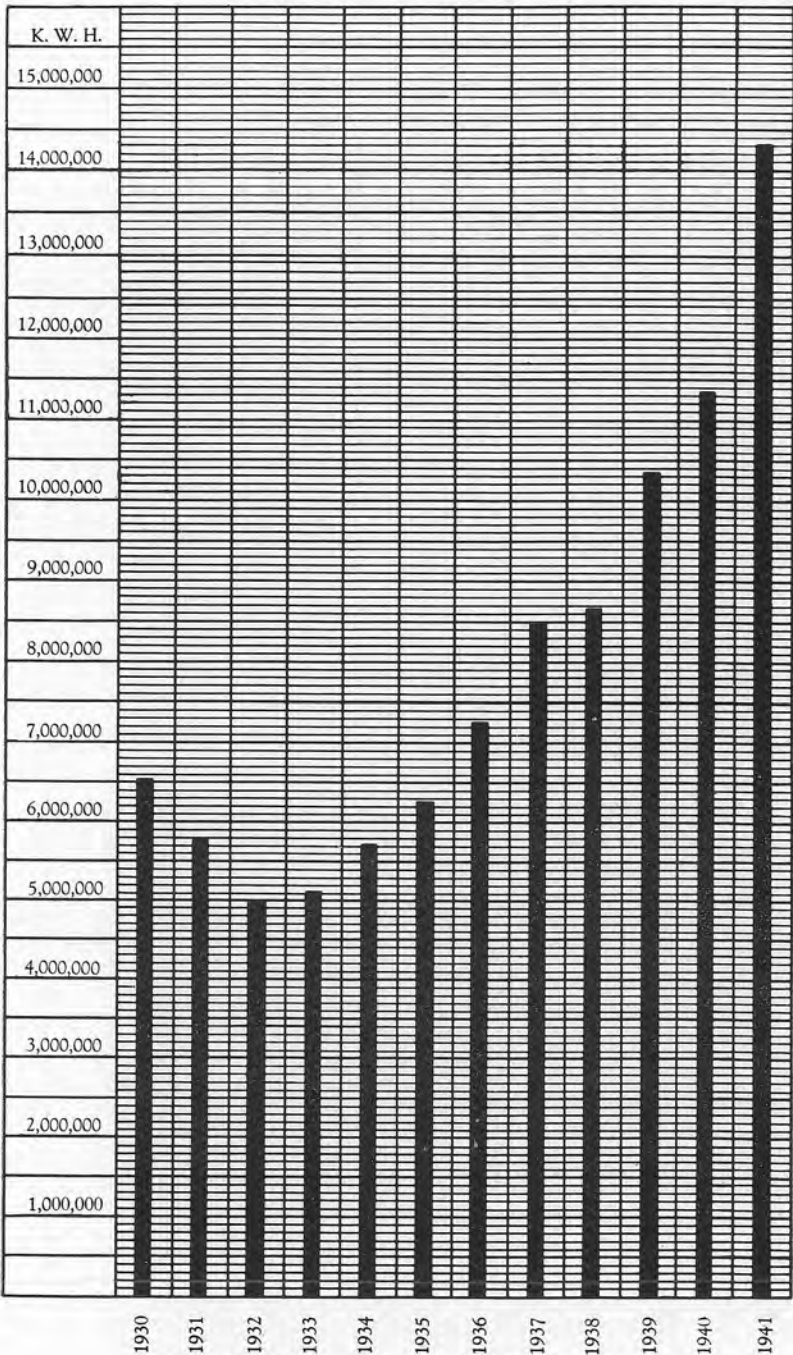
	1941	1940	Decrease
Operating revenues per KWH generated	\$0.02002	\$0.02193	\$0.00191
Operating expense per KWH generated	0.01411	0.01581	0.00170
Net operating revenue per KWH generated	0.00591	0.00612	0.00021
Operating revenues decreased	8.71%		
Operating expenses decreased	10.75%		
KWH generated increased	25.88%		

"On a kilowatt hour basis, the operating revenues decreased 8.71%, while the operating expenses decreased 10.75%.

"Summarizing the above comparisons, it is to be noted that the number of kilowatt hours generated increased 25.88%. Because of the 25.88% increase in volume, the operating revenues increased 14.9% despite the lowered rate, while the operating expenses increased 12.27%. The operating revenues per kilowatt hour, however, decreased 8.71% because of the lower rate effected during the year under review, while the operating expenses decreased 10.75%."

Moving 6900 V., 3390 KVA. Generator Stator into Building. Diameter Approximately 14-1/2 Ft.





Graph of Kilowatt Load Growth Since 1930

MUNICIPAL POWER AND LIGHT DEPARTMENT

COMPARATIVE STATEMENT OF OPERATIONS

Years Ending September 30, 1940 and 1941

	Year Ending September 30, 1941	Year Ending September 30, 1940	Increase or Decrease*
OPERATING REVENUE.....	\$286,450.21	\$249,301.93	\$37,148.28
Miscellaneous Revenue	407.80	439.72	31.92*
Total Revenue	\$286,858.01	\$249,741.65	\$37,116.36
OPERATING EXPENSES (Power Plant)			
Superintendence and Labor	\$ 21,676.86	\$ 19,993.50	\$ 1,683.36
Fuel	47,917.47	26,279.16	21,638.31
Maintenance and Repairs	5,144.89	8,521.29	3,376.40*
Supplies and Expenses	7,024.72	4,905.71	2,119.01
Total Plant Expenses	\$ 81,763.94	\$ 59,699.66	\$22,064.28
DISTRIBUTION EXPENSES (Power Lines, Etc.)			
Salaries and Labor	\$ 11,398.21	\$ 11,868.65	\$ 470.44*
Transportation (Truck Upkeep, Etc.)	550.96	289.50	261.46
Supplies and Expenses	981.48	844.03	137.45
Total Distribution Expenses	\$ 12,930.65	\$ 13,002.18	\$ 71.53*
UTILIZATION EXPENSES	\$ 2,021.17	\$ 2,257.98	\$ 236.81*
COMMERCIAL EXPENSES	\$ 1,604.07	\$ 1,497.98	\$ 106.09
GENERAL EXPENSES (Office Administration)			
Salaries	\$ 10,091.31	\$ 10,476.80	\$ 385.49*
Office Supplies and Expenses	935.83	820.83	115.00
Rent	3,600.00	3,600.00	-----
Insurance (Fire and Breakdown)	4,700.00	4,700.00	-----
Interest on Meter Deposits	518.12	466.19	51.93
Advertising	604.54	654.20	49.66*
Bad Debts	258.74	505.45	246.71*
Transportation	457.43	1,452.94	995.51*
Miscellaneous	1,439.29	1,177.37	261.92
Total General Expenses	\$ 22,605.26	\$ 23,853.78	\$ 1,248.52*
TOTAL OPERATING EXPENSES	\$120,925.09	\$100,311.58	\$20,613.51
NET INCOME (Before Taxes and Depreciation)	\$165,932.92	\$149,430.07	\$16,502.85
DEDUCT:			
Taxes (City and School)	\$ 5,167.98	\$ 6,171.36	\$ 1,003.38*
Depreciation	75,727.38	73,276.57	2,450.81
Change-over from 2 to 3 Phase	19.75	858.20	838.45*
Total Deductions	\$ 80,915.11	\$ 80,306.13	\$ 608.98
NET INCOME	\$ 85,017.81	\$ 69,123.94	\$15,893.87

* Denotes Decrease



THE FISCAL YEAR

LOAD GROWTH

The continued increase in the demand for electric power resulted in the generation of 14,308,600 KWH in 1941, or an increase of 25.88% compared with the previous fiscal year ending September 30, 1940. The number of electric meters increased from 3677 in 1940 to 3840 in 1941. 365 electric range installations were made, 342 of which were new installations, and 44 electric water heaters were installed. Due to the increased demand, a portion of the current was generated by the older and less efficient steam plant as had been done during the year 1940. It became necessary to furnish 800 to 1000 HP temporarily to the Eagle-Ottawa Leather Co., due to sudden and unusual breakdowns of one of their generating units. Other industrial customers used a substantially greater amount of power as did residential and commercial users.

PROGRESS ON NEW UNIT

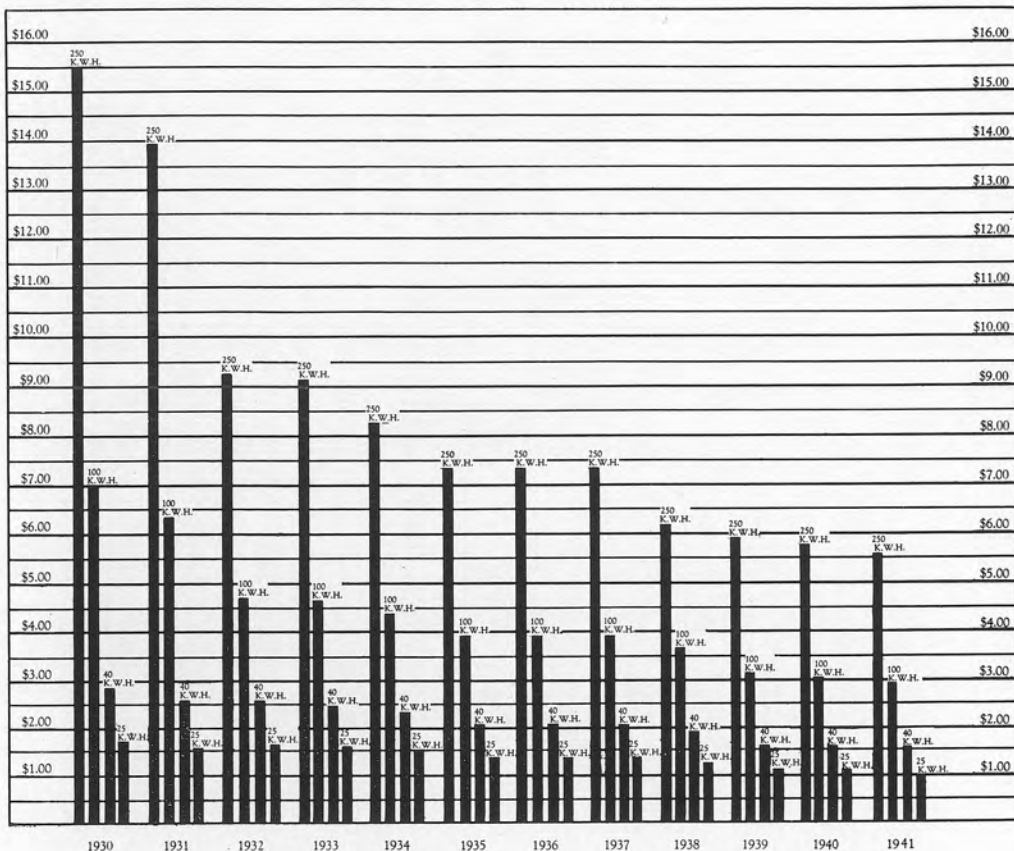
During the year 1940 the Board had instructed the Superintendent to prepare plans and specifications for a new generating unit. A contract was let to the Nordberg Mfg. Co. for a new 9 cylinder, 3850 HP, 2 cycle Diesel engine direct connected to a 3390 KVA, 2715 KW, 6900 volt Allis-Chalmers generator. This unit was scheduled for delivery early in 1941 with installation completion planned for about mid-summer. However, due to government priorities in the Nordberg factory and a prolonged strike in the Allis-Chalmers plant, the engine was not delivered until August and the generator in October.

FOUNDATION WORK

The foundation and other preliminary work was completed well in advance of the delivery of the new unit. Movement, which had existed for several years, of one of the older engine foundations located adjacent to the new unit was arrested by an underpinning job utilizing heavy steel shoring, steel sheet piling and a special pressure grouting process. Voids left by deterioration of wood sheet piling and the consequent shifting of sand under the foundation were filled with cement grout.

COMPLETION OF NEW UNIT

It is expected that the new unit will be in complete operation early in 1942. It will produce more power than the total output



Cost of 25, 40, 100 or 250 Kilowatt Hours to Residence Customers Since 1930

of the three DeLaVergne engines, two of which were installed in 1930 and the other in 1934. It will be one of the largest Diesel engines in this section of the United States and will generate power at 6900 volts, feeding directly into the industrial loop circuit which circles the city. The unit weighs over 250 tons, and rests upon a foundation which required approximately 450 yards of concrete.

One of the features of the new installation is the utilization of heat from waste gases by a newly installed Foster Wheeler waste heat boiler.

RATES AGAIN REDUCED

Rates were again reduced in 1941. This made the fourth consecutive reduction, rates having been reduced in 1938, 1939 and 1940. This reduction, based upon the previous year's sales of electricity, was estimated to be approximately \$7,000.00. Reductions were made in the residential, commercial and power brackets and in the transient lighting rate. The new residential rate in particular is unusually simple in structure and easily understood:

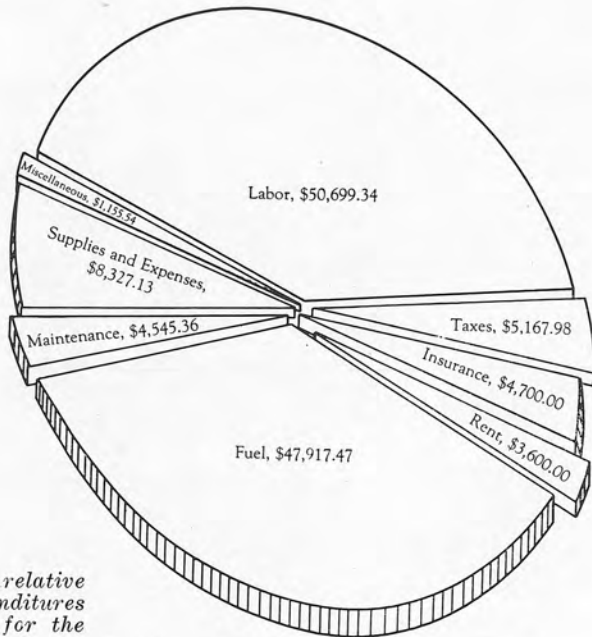
47 KWH @ .04 per KWH
133 KWH @ .02 " "
Balance @ .015 " "

SALES TAX REFUND

A refund to customers of approximately \$1,000.00 representing State Sales Tax on electricity paid from June 22 to September 29, 1939 was made. The Board of Public Works, together with municipal boards of a number of other cities, protested the payment of tax for this period, contending the legislature had not properly given immediate effect to an amendment

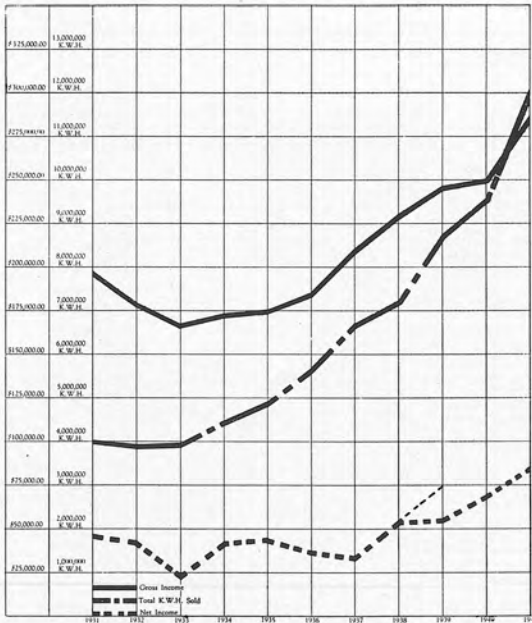
Lowering New 6900 Volt, 3390 KVA. Allis-Chalmers Generator into Position





Graph showing relative operating expenditures of the system for the fiscal year

In addition to the above, \$14,639.56 was expended for labor on new construction.



Curves showing comparison of kilowatt hours sold with gross and net revenues, illustrating greater amount of current sold with correspondingly less gross and net income. (Small dotted line on net for 1938 shows amount of retroactive rate reduction returned to users in "paid" bills).