Forty-seventh

ANNUAL REPORT

of the

TRUSTEES and OFFICERS

of the

Augusta Water District

For the Year Ending

December 31, 1951

OFFICERS
AUGUSTA WATER DISTRICT

Trustees

HAROLD D. JENNINGS	Term expires 1952
BROOKS NEWBERT	Term expires 1953
ADOLPHE J. GINGRAS, M.D.	Term expires 1954

President

BROOKS NEWBERT

Treasurer and Clerk

GEORGE F. GIDDINGS

Superintendent and Engineer

SIDNEY S. ANTHONY

Assistant Superintendent

BERNARD C. ELLIS

Trustees of the Augusta Water District since organization

George E. Macomber	1903 to 1924 (Resigned)
John F. Hill	1903 to 1912 (Died Mar. 16, 1912)
Thomas J. Lynch	1903 to 1916 (Died April 16, 1916)
Robert Morang	1912 to 1919
Percy V. Hill	1915 to 1924 (Resigned)
Frederick W. Plaisted	1919 to 1923 (Resigned)
Robert Morang	1923 to 1924 (Resigned)
Elmer E. Newbert	1924 to 1939 (Died Mar. 20, 1939)
William D. Hutchins	1924 to 1939 (Resigned)
Walter S. Wyman	1924 to 1942 (Died Nov. 15, 1942)
Brooks Newbert	1939 —
Adolphe J. Gingras, M.D.	1939 —
Harold D. Jennings	1942 —

Legislative Acts Relating to the Augusta Water District

Private and Special Laws 1903, Chapter 334, AN ACT to Incorporate the Augusta Water District.

Private and Special Laws 1905, Chapter 4, AN ACT to Authorize the Augusta Water District to take water from Carleton Pond.

Private and Special Laws 1905, Chapter 306, AN ACT to Amend the Charter of Augusta Water District.

(Changes compensation of Trustees from $300 to $100 each).

Private and Special Laws 1905, Chapter 360, AN ACT to prevent the Pollution of the waters of Carleton Pond.

Private and Special Laws 1907, Chapter 17, AN ACT to Amend the Charter of Augusta Water District.

(Extends powers granted by Chapter 4, Laws 1905; provides for filing of reports by Trustees with municipal officers of Augusta, annually; authorizes supplying of water in East Winthrop).

Private and Special Laws 1909, Chapter 405, AN ACT to Amend the Charter of the Augusta Water District.

(Authorizes supplying water to City of Hallowell or State Industrial School for Girls.)

Private and Special Laws 1923, Chapter 4, AN ACT to Amend the Charter of the Augusta Water District.

(Relates to territorial limits.)

Public Laws 1925, Chapter 133, AN ACT Relating to the Authorization of Issues of Stocks, Bonds and Notes by Public Utilities. (Authorization for issue of bonds of the District 1926.)

Private and Special Laws 1927, Chapter 52, AN ACT Relating to The Augusta Water District.

(Fixes salary of Board of Trustees at $1,200.)

Private and Special Laws 1929, Chapter 120, AN ACT Relating to the Pollution of the waters of Carleton Pond. (Closing Carleton Pond to the Public.)

Public Laws 1931, Chapter 128, AN ACT to Establish a Game Preserve. (Embracing Carleton Pond and land owned by Augusta Water District.)

Trustees' Report

The Trustees of the Augusta Water District submit herewith their Annual Report covering the year 1951.

We wish to call to your attention the detailed reports of the Auditor, the Superintendent and Engineer, and the Treasurer, together with their accompanying charts and tabulations which explain in detail the operations of the District.

BROOKS NEWBERT, *President*

ADOLPHE J. GINGRAS, M.D.

HAROLD D. JENNINGS

Trustees

Auditor's Report

To the Board of Trustees, Augusta Water District, Augusta, Maine

Gentlemen:

In accordance with your request, we have examined the books of account and records of the Augusta Water District as at December 31, 1951, and are herewith submitting the following exhibits and supporting schedule reflecting the results of the operations for the year, together with the financial condition as at the close of the year:

Exhibit "A"	Statement of Assets and Liabilities as at December 31, 1951
Exhibit "B"	Statement of Income and Expense for the Year Ended December 31, 1951
Exhibit "C"	Statement of Cash Receipts and Disbursements for the Year Ended December 31, 1951
Exhibit "D"	Comparative Statement of Assets and Liabilities as at December 31, 1950 and 1951
Schedule "AI"	Detail of Assets and Liabilities as at December 31, 1951

We have examined the financial statement of the Augusta Water District as at December 31, 1951, and the related statements of income, expense and surplus for the year then ended, have reviewed the system of internal control and the accounting procedures of the District. We examined or tested accounting records of the District and other supporting evidence, by methods and to the extent we deemed appropriate. Our examination was made in accordance with generally accepted auditing standards applicable in the circumstances and included all procedures which we considered necessary.

In our opinion, the accompanying Balance Sheet and related statements of Income and Surplus present fairly the financial position of the Augusta Water District at December 31, 1951, and the results of the operations for the year then ended.

Respectfully submitted

MILLETT, FISH & DRESSER
By R. M. Millett, C. P. A.

EXHIBIT "A"

Statement of Assets and Liabilities as at December 31, 1951

ASSETS

Current Assets

Cash:		
Detail Number 1	$ 30,054.61	
Materials and Supplies:		
Detail Number 2	50,950.86	
Accounts Receivable:		
Detail Number 3	16,716.41	
		$ 97,721.88

Fixed Assets

Operating Property:	
Detail Number 4	2,193,019.80

Deferred Charges

Detail Number 5	4,390.96
Total Assets	$2,295,132.64

LIABILITIES AND CAPITAL

Current Liabilities

Accounts Payable:		
Detail Number 6	$ 4,654.07	
Customers' Deposits:		
Detail Number 7	2,555.88	
Notes Payable:		
Detail Number 8	150,000.00	
Interest Accrued:		
Detail Number 9	5,919.35	
		$ 163,129.30

Long-Term Debt

Bonds Payable:	
Detail Number 10	406,500.00

Reserves

Reserve for Depreciation:	
Detail Number 11	$653,980.43
Funded Debt Retired Through Surplus:	
Detail Number 12	693,500.00
	1,347,480.43

Earned Surplus

Detail Number 13	378,022.91
Total Liabilities and Capital	$2,295,132.64

SCHEDULE AI

Detail of Assets and Liabilities

Detail Number 1:			
Cash on Deposit with:			
First National Granite Bank		$ 29,875.08	
Cash in Office		150.00	
Augusta Savings Bank — No. 69640		20.30	
Kennebec Savings Bank — No. 23008		9.23	
			$ 30,054.61
Detail Number 2:			
Materials and Supplies:			
Pipe and Fittings on Hand		$ 50,401.26	
Lumber on Hand		549.60	
			50,950.86
Detail Number 3:			
Accounts Receivable:			
Due on Water Rentals		$ 14,705.06	
Due on Service		2,011.35	
			16,716.41
Detail Number 4:			
Fixed Capital Accounts:			
Balance June 30, 1915		$ 796,835.14	
Additions Since June 30, 1915:			
Property Held for Future Utility Use	$ 4,380.46		
Land Devoted to Water Operations	15,229.76		
Forestation of Land	472.80		
Structures	115,530.43		
Intake and Suction Mains	808.47		
Purification System	22,977.40		
Electric Power Pumping Equipment	21,137.60		
Gas and Oil Pumping Equipment	2,505.60		
Transmission Mains	5,849.10		
Reservoirs and Standpipes	175,108.25		
Distribution Mains	741,638.17		
Service	130,664.68		
Meters	33,119.09		
Hydrants and Fire Cisterns	27,891.05		
General Office Equipment	8,140.68		
TransportationEquipment	21,631.10		
Other Equipment	66,680.99		
Engineering	1,113.60		
Law Expenditures	1,305.43		
		$1,396,184.66	
			$2,193,019.80

Detail Number 5:		
Deferred Charges:		
Professional Service in Connection with Study of Additional Water Supply		$ 4,390.96
Detail Number 6:		
Accounts Payable:		
Unpaid Vouchers at December 31, 1951	$ 2,610.37	
Employees' Provident Reserve	1,278.52	
Maine State Sales Tax	765.18	
		4,654.07
Detail Number 7:		
Customers' Deposits:		
Meter Deposits	$ 227.33	
Customers' Advances for Construction	2,328.55	
		2,555.88
Detail Number 8:		
Notes Payable		150,000.00
Detail Number 9:		
Interest Accrued on Bonds Payable	$ 5,053.87	
Interest Accrued on Notes Payable	865.48	
		5,919.35
Detail Number 10:		
Long-Term Debt:		
Refunding Serial 1934 Issue, 3¼% Due 1954	$ 354,500.00	
Extension and Improvement Serial, — 4% — Due 1956	12,000.00	
Improvement Serial, 2% — Due 1959	40,000.00	
		406,500.00
Detail Number 11:		
Reserve for Depreciation:		
Balance January 1, 1951	$ 613,826.52	
Add: Depreciation for the Year	40,153.91	
		653,980.43
Detail Number 12:		
Funded Debt Retired Through Surplus:		
Balance January 1, 1951	$ 668,500.00	
Retired During 1951	25,000.00	
		693,500.00
Detail Number 13:		
Earned Surplus:		
Balance January 1, 1951	$ 380,776.51	
Net Loss for the Year	2,753.60	
		378,022.91
Disposition of 1951 *Loss:*		
Assets Increased:		
Cash	$ 10,021.05	
Materials and Supplies	21,397.30	
Accounts Receivable	1,861.12	
Additions to Fixed Capital	47,918.29	
Deferred Charges	2,049.47	
Liabilities Decreased:		
Funded Debt	25,000.00	
Accounts Payable	4,673.78	
Interest Accrued	159.15	
		$ 113,080.16

Less:		
Liabilities Increased:		
Customers' Deposits	$ 679.85	
Notes Payable	50,000.00	
Long-Term Debt Retired	25,000.00	
Depreciation Reserve	40,153.91	
		115,833.76
		$ 2,753.60*

* Loss

EXHIBIT "B"

Statement of Income and Expense for the Year Ended December 31, 1951

	Income		
Water Service Revenue:			
Metered Residential Sales	$ 19,016.35		
Flat Rate Residential Sales	57,984.55		
Metered Commercial Sales	13,679.81		
Flat Rate Commercial Sales	1,230.58		
Metered Industrial Sales	18,576.30		
Sales to Governmental Agencies	17,867.08		
Public Fire Protection	8,175.26		
Private Fire Protection	1,795.68		
Sales to Other Distributors	84.90		
		$ 138,410.51	
Other Water Revenue:			
Miscellaneous Water Revenue		72.50	
			$ 138,483.01
	Expense		
Operating Expense:			
Source of Supply — Operation:			
Operating Labor		$ 1,604.15	
Purification System Expense — Operation:			
Purification Labor	$ 3,066.17		
Purification Supplies and Expense	2,578.74		
		5,644.91	
Pumping Station Expense — Operation:			
Pumping Labor	$ 3,367.16		
Power Purchased	6,045.67		
Miscellaneous Supplies and Expense	923.45		
		10,336.28	
Distribution Expense — Operation:			
Distribution Labor	$ 6,258.75		

Removing, Resetting and Testing Meters	255.01	
Inspecting Customers' Installations	50.30	
Miscellaneous Supplies and Expense	747.61	
		7,311.87
Purification System Expense — Maintenance:		
Repairs to Purification Equipment		25.95
Pumping Expense — Maintenance:		
Repairs to Pumping Station Building and Fixtures	$ 685.24	
Repairs to Pumping Equipment	1,766.47	
		2,451.71
Transmission Expense — Maintenance:		
Repairs to Transmission Mains		$ 671.61
Distribution Expense — Maintenance:		
Repairs to Reservoirs and Standpipes	$ 1,944.45	
Repairs to Distribution Mains	3,268.23	
Repairs to Services	1,810.84	
Repairs to Meters	2,861.26	
Repairs to Hydrants	343.48	
Changing Distribution Mains and Services	414.43	
		10,642.69
General Maintenance:		
General Repairs to General Office Equipment	$ 288.26	
General Shop and Equipment	135.28	
Repairs to Miscellaneous Equipment	302.44	
		725.98
Customers' Accounting and Collecting:		
Meter Reading	$ 483.41	
Collecting	105.40	
		588.81
General and Miscellaneous Expense:		
Salaries and Expenses of General Officers	$ 6,301.52	
Salaries and Expenses of General Office Employees	3,957.20	
General Office Supplies and Expense	2,158.83	

Miscellaneous General Expense	746.19		
Insurance	992.44		
Transportation Expense	774.13		
Stores Expense	55.49		
Exployees' Welfare Expense	6,382.07		
		21,367.87	
Total Operating and Maintenance Expense		$ 61,371.83	
Taxes		859.76	
Depreciation		40,153.91	
Total Operating Expense			$ 102,385.50
Net Operating Revenue			$ 36,097.51
Other Income:			
Income from Merchandising and Jobbing		$ 1,086.59	
Interest Revenue		.61	
Property Held for Future Utility Use:			
Rents	$ 1,580.00		
Less: Expense	849.12		
		730.88	
			1,818.08
			$ 37,915.59
Other Deductions:			
Interest Accrued on Long-Term Debt		$ 13,374.22	
Miscellaneous Interest Deductions		2,294.97	
Contractual Appropriation of Income		25,000.00	
			40,669.19
Net **Loss** Closed to Surplus			$ **2,753.60**

EXHIBIT "C"

Statement of Cash Receipts and Disbursements
For the Year Ended December 31, 1951

Bank Balance January 1, 1951		$ 20,033.56
Receipts		
Water Rentals	$ 137,915.64	
Operating Property — Distribution Mains	494.91	
Service Installations	6,454.01	
Materials and Supplies	183.24	
Exchange Account	309.74	
Clearing Account	11,395.95	
Notes Payable	150,000.00	

State Sales Tax	1,129.94	
Customers' Deposits	50.00	
Withholding Tax Fund	3,427.20	
Employees' Provident Reserve	1,864.14	
Customers' Advances for Construction	1,000.00	
Revenue from Non-Operating Property — Rent	1,586.00	
Interest Revenue	.61	
Source of Supply — Operating Labor	49.00	
Purification System Operation — Supplies and Expense	14.00	
Distribution Operation — Miscellaneous Supplies and Expense	72.49	
Distribution Expense Maintenance — Repairs to Meters	124.97	
General Office Supplies and Expense	.92	
General and Miscellaneous Expense — Insurance	625.01	
Transportation Expense	32.41	
		316,730.18
Total		$ 336,763.74

Disbursements

Structures — Stores Department	$ 240.94
Purification System	374.00
Electric Power Pumping Equipment	4,715.78
Transmission Mains	1,556.70
Distribution Mains	5,978.20
Services	2,214.08
Meters	608.50
Hydrants	1,231.78
General Equipment — Office	93.43
General Equipment — Shop	10.70
General Equipment — Transportation	3,278.20
General Equipment — Miscellaneous	1,209.69
Materials and Supplies	45,372.32
Exchange Account	309.74
Clearing Account	12,049.90
Deferred Debits	3,903.81
Interest Accrued	13,626.25
Notes Payable	100,000.00
State Sales Tax	364.76
Customers' Deposits	80.00
Withholding Tax Fund	3,752.40
Employees' Provident Reserve	4,636.83
Customers' Advances for Construction	300.15
Taxes	859.76
Income from Merchandise Jobbing	148.26
Non-Operating Revenue Deductions:	
Non Operating Income — Rents	6.00
Repairs	416.04
Insurance, Taxes, Water, Lights	457.59
Miscellaneous	21.82

Miscellaneous Interest Deductions	2,202.09	
Contractual Appropriation of Income	25,000.00	
Flat Rate Residential Sales	80.17	
Sales to Government Agencies	5.00	
Source of Supply — Operating Labor	1,660.82	
Purification System — Operating Labor	3,066.17	
Purification System — Supplies and Expense	2,711.22	
Pumping System — Labor	3,367.16	
Pumping System — Power Purchased	6,115.10	
Pumping System — Miscellaneous Supplies and Expense	868.67	
Distribution — Labor	7,867.39	
Distribution — Removal, Resetting, Testing Meters	250.17	
Distribution — Inspecting Customers' Installations	50.30	
Distribution — Miscellaneous Supplies and Expense	3,629.64	
Maintenance — Repairs to Purification Equipment	12.86	
Maintenance — Repairs to Pumping Station Building and Fixtures	653.61	
Maintenance — Repairs to Pumping Equipment	1,709.05	
Maintenance — Repairs to Transmission Mains	653.19	
Maintenance — Repairs to Reservoirs and standpipes	1,899.67	
Maintenance — Repairs to Distribution Mains	2,637.48	
Maintenance — Repairs to Services	1,653.64	
Maintenance — Repairs to Meters	2,902.37	
Maintenance — Repairs to Hydrants	340.45	
Maintenance — Relocating Mains and Services	285.07	
Maintenance — Repairs to General Office Equipment	305.75	
Maintenance — Repairs to General Shop Equipment	414.67	
Maintenance — Repairs to Miscellaneous Equipment	3,112.43	
Accounting and Collecting — Meter Reading	483.41	
Accounting and Collecting — Collecting	105.40	
Salaries and Expenses of General Officers	8,397.92	
Salaries and Expenses of General Office Employees	4,632.00	
General Office Supplies and Expense	2,533.22	
Miscellaneous General Expense	709.82	
Law Expense	53.37	
Insurance	2,281.26	
Transportation Expense	3,132.29	
Store Expense	354.95	
Employees' Welfare Expense	2,753.72	
		$ 306,709.13
Cash Balance December 31, 1951		30,054.61
Total		$ 336,763.74

EXHIBIT "D"

Comparative Statement of Assets and Liabilities

Assets	*December 31, 1950*	*December 31, 1951*	*Increase Decrease**
ash — General Fund	$ 20,033.56	$ 30,054.61	$10,021.05
ccounts Receivable	14,855.29	16,716.41	1,861.12
Iaterials and Supplies	29,553.56	50,950.86	21,397.30
ixed Capital	2,145,101.51	2,193,019.80	47,918.29
eferred Charges	2,341.49	4,390.96	2,049.47
	$2,211,885.41	$2,295,132.64	$83,247.23
Liabilities and Capital			
ccounts Payable	$ 9,327.85	$ 4,654.07	$ 4,673.78*
Iotes Payable	100,000.00	150,000.00	50,000.00
ccrued Interest	6,078.50	5,919.35	159.15*
ustomers' Deposits	1,876.03	2,555.88	679.85
ong-Term Debt	431,500.00	406,500.00	25,000.00*
ong-Term Debt Retired	668,500.00	693,500.00	25,000.00
epreciation	613,826.52	653,980.43	40,153.91
arned Surplus	380,776.51	378,022.91	2,753.60*
	$2,211,885.41	$2,295,132.64	$83,247.23

DISTRIBUTION OF INCOME

	%	%
Sale of Water:		
Residential	54.89	
Commercial	10.63	
Industrial	13.24	
Government Agencies	12.73	
Fire Protection	7.11	
Other Distribution	.11	98.71
Sales and Jobbing	———	.77
Non-Operating Property		.52
		100%

DISTRIBUTION OF EXPENSE

Interest Deductions	10.95
Reduction of Funded Debt	17.48
Additions to Fixed Capital	28.06
Source of Supply	1.12
Purification	3.97
Pumping	8.94
Distribution	12.55
Transmission	.47
Customers' Accounting and Collecting	.41
General Expense	9.76
Insurance	.69
Transportation	.54
Taxes	.60
Employees' Welfare Expense	4.46
	100%

Report of Superintendent

Ir. Brooks Newbert, President
r. Adolphe J. Gingras
Ir. Harold D. Jennings
rustees of the Augusta Water District:

entlemen:

I submit herewith my twenty-sixth annual report of operations the District covering the calendar year 1951.

WATER SUPPLY

While water consumption throughout the District continued to crease slightly, excessive rainfall during the year maintained ie water level in Carleton Pond at a higher point than for several ears. At no time did it reach a point lower than five feet six ches below the spillway, which point was reached on October 2. Total precipitation for the year was 52.56 inches as compared ith 39.36 inches the previous year.

During the early Summer a study of possible sources of addi- tional water supply for the system was undertaken under the rection of Metcalf & Eddy, consulting engineers of Boston. ources of surface supplies previously studied early in the present entury were again considered and all possible lakes and ponds ere found to be too far from the present system and too highly eveloped as recreational areas to be considered economically asible. The greater regular use of Lake Cobbosseecontee would quire an additional pipe line, larger pumping station and xtensive treatment works, all at a considerable expense not arranted at present.

It was considered that an underground source nearer the center the system might be found and the services of the Rev. Daniel inehan, S.J., Seismologist in Charge, Weston College, Weston, lass., were engaged to make seismological surveys of possible ources of underground water supplies.

Several sites were investigated on the outskirts of the system and two were chosen for exploratory wells. One of these, located in the valley of Riggs Brook, commonly known as Two Mile Brook off Riverside Drive, was tested and found to be unsuitable. The other, near the junction of Mount Vernon Avenue and Leighton Road, in the valley of Bond Brook was found to be capable of supplying good quality water and so situated as to be economically possible to connect to present transmission mains from Carleton Pond.

The plans for a new and larger pump at East Winthrop, made late in 1950 were fullfilled and the pump installed. It is now possible to draw as much as five million gallons of water per day from Carleton Pond or four million gallons from Lake Cobbosseecontee in case of extreme demand during a serious drought or large fire within the city.

NEW CONSTRUCTION

A comparatively small amount of new construction work was done during the year. The number of new service installations was much smaller than in any other year since 1946 and only a small amount of new main pipes were installed. The Easterly side of the Kennebec River again showed the greatest growth with 1,759 feet of new main pipe and 39 new services as compared with 1,292 feet of main pipe and 38 new services West of the river. 254 feet of new main and four new services were installed in East Winthrop.

Eight new hydrants were installed, four on the East Side, three on the West Side and one in Manchester.

An addition to the shop storage facilities at the Arsenal Street Service Building was started during the year, it being built from lumber cut on District property at Carleton Pond during the late Winter and the work being done by our own regular employees, who are most versatile in their capabilities as carpenters, painters, concrete workers and so on. Hardware and roofing are the only materials which will not be supplied from our own resources. This building will house equipment as well as provide undercover storage for gravel and street patching materials needed during cold weather.

The only other major operation carried on during the year was n connection with the extension of runways at the Augusta State Airport. This extension carries the new runway across the nain supply line from Carleton Pond to Augusta and involved very deep fill over the existing pipe line. Since it was considered hat a fill of fifty feet above the pipe was dangerous to the pipe tself and would make any future necessary repairs difficult if ot impossible, the pipe was relocated to another point so that owhere is it deeper than 12 feet from the surface.

This project involved removing and replacing about 600 feet f 24" cast iron pipe and at the same time adding about 400 feet f new pipe to the line to restore service. Since the line involved vas the sole supply for Augusta, time was important. By close ooperation with the Contractor and the Maine Aeronautics Commission the job was completed and water service restored vithin 30 hours without important loss of stored water in the eservoirs.

MAINTENANCE

During the year all property was maintained in good order. The several auxiliary pumping stations were painted inside nd out, the standpipe at Togus was cleaned and painted and perating tools and equipment kept in good repair, with the ormal amount of replacements as individual items became worn ut or obsolete.

At no time was it necessary to use our auxiliary supply at ake Cobbosseecontee, nor was the use of chemicals required to orrect unpleasant tastes or odors in Carleton Pond water. Weekly microscopic examinations of the supply in our laboratory re made to indicate in advance when treatment is likely to be eeded to prevent the development of such conditions.

Following this report are several tabulations and charts show- ng in detail the operations of the District for 1951 and others hich compare 1951 with previous years.

Respectfully submitted,

SIDNEY S. ANTHONY,
Superintendent and Engineer

TABLE I

RECORD OF WATER PRODUCTION AT EAST WINTHROP

Month	*Pumping*		*Gravity*		*Total*	*Daily*
	Hours	*Gallons*	*Hours*	*Gallons*	*Gallons*	*Average*
Jan.	509	81,710,000	0	0	81,710,000	2,636,000
Feb.	380	60,920,000	259	14,050,000	74,970,000	2,672,500
Mar.	404	65,640,000	267	15,850,000	81,490,000	2,630,000
Apr.	297	49,230,000	393	28,770,000	78,000,000	2,600,000
May	394	65,320,000	300	21,740,000	87,060,000	2,808,400
June	421	69,730,000	264	18,200,000	87,930,000	2,911,000
July	469	77,580,000	250	16,550,000	94,130,000	3,037,000
Aug.	628	102,800,000	110	6,790,000	109,590,000	3,535,100
Sept.	445	71,650,000	238	13,450,000	85,100,000	2,745,100
Oct.	520	82,970,000	167	7,970,000	90,940,000	2,933,600
Nov.	444	71,370,000	266	15,670,000	87,040,000	2,901,300
Dec.	400	64,720,000	342	21,580,000	86,300,000	2,784,200
Totals	5,311	863,640,000	2,856	180,620,000	1,044,260,000	2,860,985

TABLE II

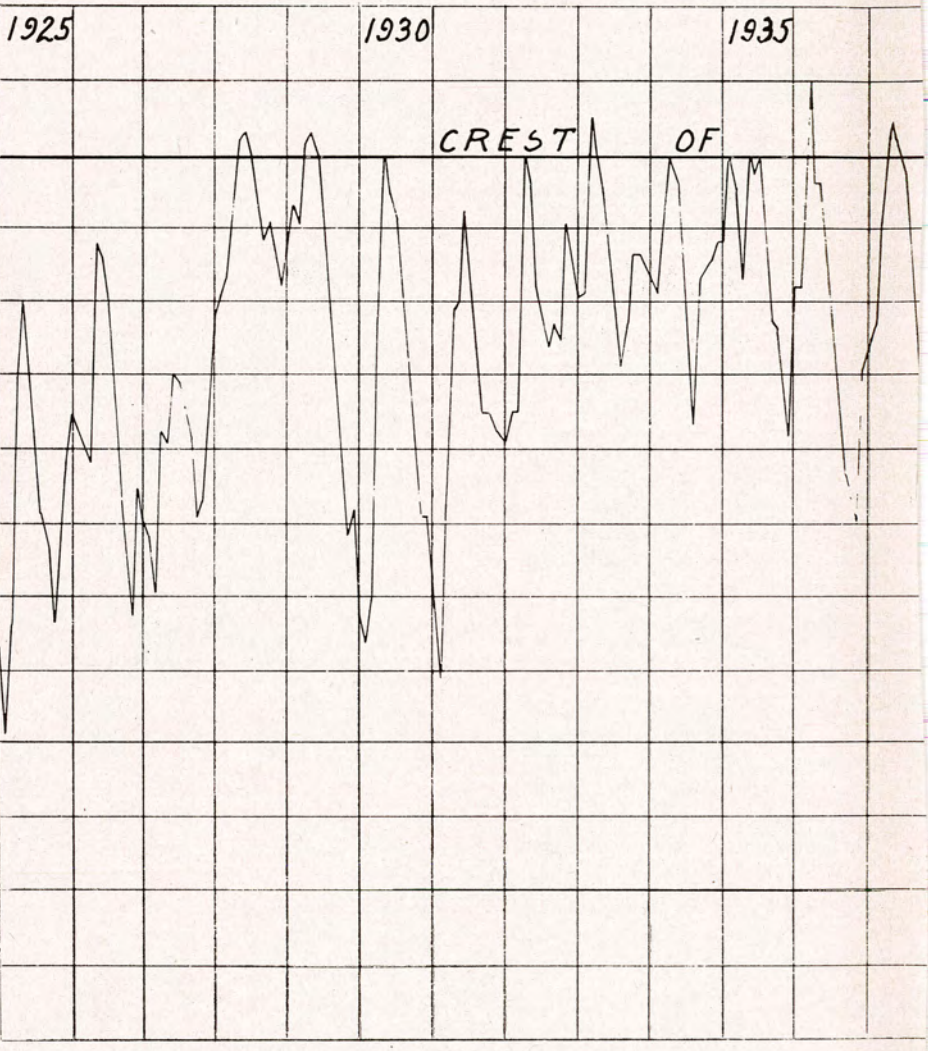
AVERAGE DAILY PRODUCTION OF WATER

(Since installation of master meter on Feb. 10, 1910)

Period ending	*Daily average gallons*	*Period ending*	*Daily average gallons*
May 31, 1910	2,035,000	Dec. 31, 1930	2,177,000
May 31, 1911	2,387,000	Dec. 31, 1931	2,177,000
May 31, 1912	2,103,000	Dec. 31, 1932	1,993,000
May 31, 1913	1,995,000	Dec. 31, 1933	1,897,000
May 31, 1914	1,992,000	Dec. 31, 1934	1,979,000
May 31, 1915	1,870,000	Dec. 31, 1935	2,103,000
June 30, 1916	1,971,000	Dec. 31, 1936	2,068,000
June 30, 1917	2,052,000	Dec. 31, 1937	2,027,000
Dec. 31, 1917	1,975,000	Dec. 31, 1938	2,073,000
Dec. 31, 1918	2,086,000	Dec. 31, 1939	2,053,000
Dec. 31, 1919	2,066,000	Dec. 31, 1940	2,083,000
Dec. 31, 1920	2,245,000	Dec. 31, 1941	2,127,000
Dec. 31, 1921	2,299,000	Dec. 31, 1942	2,264,000
Dec. 31, 1922	2,200,000	Dec. 31, 1943	2,269,000
Dec. 31, 1923	2,339,000	Dec. 31, 1944	2,428,000
Dec. 31, 1924	2,409,000	Dec. 31, 1945	2,435,000
Dec. 31, 1925	2,388,000	Dec. 31, 1946	2,529,000
Dec. 31, 1926	2,951,000	Dec. 31, 1947	2,584,000
Dec. 31, 1927	2,635,000	Dec. 31, 1948	2,660,000
Dec. 31, 1928	2,122,000	Dec. 31, 1949	2,773,000
Dec. 31, 1929	2,183,000	Dec. 31, 1950	2,792,000
		Dec. 31, 1951	2,861,000
Daily average production since 1910			2,245,350

WORK IN PROGRESS AT AIRPORT

1. New 24″ Gate Valve
2. Part of new pipe in place, ready for cover
3. Removing old pipe to move to new location
4. Interior of 24″ pipe after 46 years' service


1925
1930
1935
CREST OF

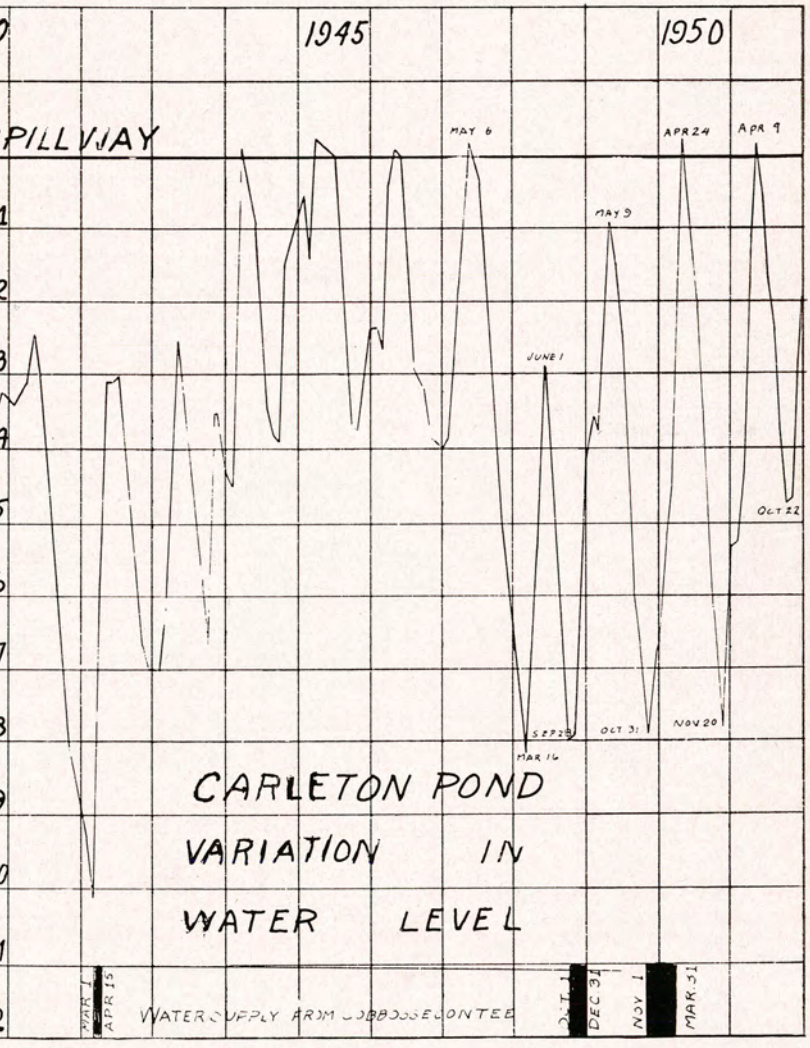

1945
1950
SPILLWAY
MAY 6
APR 24
APR 9
MAY 9
JUNE 1
OCT 22
SEPT 29
OCT 31
NOV 20
MAR 16
CARLETON POND
VARIATION IN
WATER LEVEL
APR 15
DEC 31
NOV 1
MAR 31

TABLE III

WATER SUPPLY DATA AND CHEMICAL TREATMENT

Month	*Carleton Pond level first day*	*Water temp. °F*	*Snow*	*Precipitation Melted snow and rain*	*Normal*	*Chlorine pounds per month*
Jan.	—5′ 4″	40	11.9	2.42	3.48	602.56
Feb.	—5′ 3″	39	12.7	3.81	2.90	562.37
Mar.	—4′ 4″	39	8.3	5.61	3.47	610.62
April	—1′ 3″	40		6.76	3.58	602.63
May	—0′ 2″	48		2.26	3.21	672.25
June	—0′ 7″	52		2.82	3.22	741.12
July	—1′ 8″	55		6.55	3.71	800.25
Aug.	—2′ 4″	61		3.02	2.71	974.00
Sept.	—3′ 9″	62		2.68	4.42	729.13
Oct.	—4′ 9″	60		3.97	3.29	756.50
Nov.	—4′ 8″	50	7.8	7.22	3.95	728.00
Dec.	—3′ 0″	42	23.0	5.44	3.76	681.00
Dec. 31	—1′ 11″	40				
Totals			63.7	52.56	41.70	8,460.37

TABLE IV

PRECIPITATION BY MONTHS

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
1934	1.82	3.60	2.78	4.32	2.15	2.44	5.76	1.64	10.74	2.02	2.46	4.52	44.28
1935	7.64	1.97	1.25	2.78	1.52	5.15	2.90	2.30	4.58	.81	4.61	2.14	37.65
1936	8.75	3.49	8.89	5.10	2.69	2.49	2.56	2.29	2.53	4.67	1.68	7.33	51.57
1937	3.30	3.61	4.13	4.26	6.15	3.58	2.71	.81	3.80	7.44	5.59	2.99	48.37
1938	3.85	3.06	2.81	2.47	3.89	3.10	7.24	2.21	7.64	2.62	2.89	4.47	46.07
1939	3.06	2.45	4.42	3.59	.76	2.54	3.48	5.71	3.75	2.84	1.85	4.36	37.81
1940	2.68	2.38	3.54	6.91	3.69	4.41	1.91	1.66	5.29	.47	5.12	2.77	40.46
1941	1.59	2.06	2.92	.60	2.77	.97	3.99	3.76	1.29	3.11	2.66	3.10	28.82
1942	2.21	2.72	6.17	3.15	1.81	5.46	3.71	1.66	3.13	2.28	3.44	4.75	40.49
1943	1.67	2.33	2.78	2.18	5.73	2.24	3.36	3.69	1.69	6.46	6.17	.93	41.67
1944	1.67	3.59	3.43	3.06	.68	4.71	2.70	1.52	6.56	3.43	7.02	3.30	41.67
1945	4.82	2.99	1.75	5.23	6.41	4.15	5.10	2.09	2.63	4.00	4.84	3.75	47.76
1946	3.01	3.49	1.02	2.91	3.43	1.52	2.95	5.86	3.84	2.72	2.95	4.41	38.11
1947	3.66	2.92	2.82	1.19	4.69	3.45	3.85	.64	2.74	.16	4.74	2.25	33.11
1948	3.27	1.46	2.42	2.75	7.51	3.38	1.42	1.28	.55	3.31	6.38	4.42	38.15
1949	4.10	2.81	2.45	3.59	3.09	2.46	1.11	1.03	4.69	2.76	4.41	1.59	35.09
1950	4.80	2.84	4.18	2.99	.79	2.51	2.00	3.52	1.89	2.15	2.15	4.81	39.96
1951	2.40	3.81	5.61	6.76	2.26	2.82	6.55	3.02	2.68	3.97	7.22	5.44	52.56
Average	3.57	2.87	3.52	3.55	3.33	3.18	3.52	2.48	3.89	3.06	4.18	3.72	41.30

TABLE V

DISTRIBUTION MAINS AND GATE VALVES INSTALLED IN 1951

Location	Size	Length	Gate valves	Labor	Per foot	Equipment	Per foot	Materials	Per foot	Paving charges	Per foot	Total Cost	Per foot
EASTERN DIVISION													
Bangor Street	6	77		$ 143.08	$1.86			$ 163.47	$2.12			$ 306.55	$3.98
Carlisle Avenue	6	423	2–6″	597.01	1.41	$ 11.50	$ .03	1,037.96	2.45			1,646.47	3.89
Eastern Avenue	6	583		1,157.35	1.97	905.00	1.55	1,255.39	2.15	243.25	$.42	3,560.99	6.09
Fredona Avenue	6	128		58.11	.45	27.00	.21	234.15	1.83			319.26	2.49
Kling Street	6	160		79.71	.50	26.00	.16	272.71	1.71			378.42	2.36
Malta Street	6	222	1–6″	342.62	1.61			516.76	2.44			859.38	4.05
Mayflower Road	6	78	1–6″	31.98	.41	24.00	.31	222.83	2.84			278.81	3.56
Porter Street	6	44		47.45	1.08	15.00	.34	74.58	1.70			137.03	3.12
Riverside Drive	6	44		73.43	1.67	8.00	.18	74.67	1.69	7.00	.16	163.10	3.70
WESTERN DIVISION													
Blaisdell Street	6	216		164.49	.77	53.00	.25	372.85	1.72			580.34	2.68
Farnum Street	6	231	1–6″	158.37	.69	42.00	.18	534.49	2.31			734.86	3.18
Westwood Avenue	8	499	1–8″	279.63	.56	32.00	.06	1,364.42	2.74			1,676.05	3.36
NORTHERN DIVISION													
Fontaine Street	2	84		24.08	.35	21.00	.25	32.93	.39			78.01	.93
Underhill Place	1″	162	1–1″	489.06	3.02	117.65	.73	133.78	.83			740.49	4.58
WINTHROP DIVISION	6″	254		126.87	.50	68.00	.27	453.90	1.79			648.77	2.56
TRANSMISSION MAIN	24″	400	1–24″										
Totals, summary	1″	162	1	489.06	3.02	117.65	.73	133.78	.83			740.49	4.58
	2″	84		24.08	.35	21.00	.25	32.93	.39			78.01	.93
	6″	2,460	6	2,970.47	1.21	1,179.50	.48	5,213.76	2.12	250.25	.10	9,613.98	3.91
	8″	499	1	279.63	.56	32.00	.06	1,364.42	2.74			1,676.05	3.36
	24″	400	1										
		3,605	9	$3,763.24	$1.17	$1,350.15	$.42	$6,744.89	$2.10	$250.25	$.08	$12,108.53	$3.77

TABLE VI

DISTRIBUTION MAINS IN PLACE DECEMBER 31, 1951

Type of pipe	*Size*	*Aqueducts*	*Eastern Division*	*Western Division*	*Northern Division*	*Manchester-Winthrop*	*On private property*	*Total in place Dec. 31, 1951*
Unlined cast iron	24″	34,936						34,936
	20″	12,225						12,225
	16″	9,312	1,000	4,383				14,695
Cement lined cast iron	16″	750						750
Unlined cast iron	12″	1,630		12,662				14,292
	10″	1,831	14,965	1,568	2,742		864	21,970
Cement lined cast iron	10″		7,745				217	7,962
Unlined cast iron	8″	28,640	5,028	13,088	2,867		1,561	51,184
Cement lined cast iron	8″		3,387	6,937	4,500	2,831		17,655
Bituminous lined steel	8″			4,030				4,030
Unlined cast iron	6″	404	64,800	60,515	15,643	3,514	8,326	153,202
Cement lined case iron	6″	67	27,207	14,085	1,487	6,183		49,029
Unlined cast iron	4″		806	791			2,402	3,999
Galvanized steel	2″		7,865	15,712	4,528	9,348	1,409	38,862
Bituminous lined steel	2″		90		197			287
Galvanized steel	1½″		87	296		1,161		1,544
Galvanized steel	1¼″			103		204		307
Galvanized steel	1″		25	455		1,970	550	3,000
Copper	1″		111		370			481
Galvanized steel	¾″		100				90	190
Totals		89,795	133,000	134,625	32,334	25,211	15,419	430,600

Miles of mains in place December 31, 1951	81.9
Miles of mains in place December 31, 1950	81.2
Gain in miles, 1951	0.7

TABLE VI–A

GATE VALVES IN PLACE DECEMBER 31, 1951

Size	*Aqueducts*	*Eastern Division*	*Western Division*	*Northern Division*	*Manchester Winthrop*	*On private property*	*Total in place Dec. 31, 1951*
24″	9						9
20″	6						6
16″	13	3	2				18
12″	3		21				24
10″		44	4	5		2	55
8″	11	18	39	22	2	4	99
6″	10	235	228	43	16	18	550
4″		2	5			3	10
2″		34	44	12	5	2	97
1¼″					1		1
1″		2	1	3	4		10
¾″			1				1
Totals	52	338	345	85	31	29	879

TABLE VII

SERVICE INSTALLATIONS 1951

	Residential	*Commercial*	*Industrial*	*Total*	*Renewals*
Eastern Div.	33	4	2	39	10
Western Div.	27	2	2	31	29
Northern Div.	6	1		7	6
Manchester	4			4	
Totals	70	7	4	81	45

Service for new buildings on new main installations	25
Service for new buildings on existing mains	56
	81

SERVICE ADDITIONS EACH YEAR

Year	*Number*	*Year*	*Number*	*Year*	*Number*
1904	1,486*	1921	62	1938	65
1905	55	1922	66	1939	78
1906	43	1923	97	1940	71
1907	94	1924	56	1941	64
1908	61	1925	65	1942	13
1909	69	1926	46	1943	2
1910	81	1927	42	1944	18
1911	61	1928	55	1945	19
1912	73	1929	61	1946	69
1913	67	1930	42	1947	106
1914	61	1931	67	1948	118
1915	37	1932	49	1949	135
1916	62	1933	37	1950	142
1917	68	1934	20	1951	81
1918	23	1935	37		
1919	18	1936	41		
1920	34	1937	61		
					4,278

* Number of services in place when the works were acquired by the Augusta Water District

Total service installations	4,278
Disconnected various times	157
	4,121
Public hydrants	238
Private hydrants	65
Watering troughs	2
Street sprinkling standpipes	6
Total connections to mains	4,432

TABLE VIII

FIRE HYDRANTS INSTALLATIONS 1951

Location	*Static Pressure*	*Installation Cost*
Manchester		
Prescott Road	19	$ 562.85
Augusta		
State and Riverton Streets	98	531.56
Sewall and Maine Streets	93	361.48
Ward Street and Macomber Avenue	55	509.45
Carlisle Avenue and Malta Street	30	268.23
Pinehurst Street and Longwood Avenue	70	384.46
Second Avenue and Congress Street	40	402.46
Spaulding Street and Elm Avenue	78	515.84
		$3,536.33

Treasurer's Report

To the Trustees of the Augusta Water District:

Gentlemen:

As Treasurer of the Augusta Water District, I herewith submit a summarized statement showing receipts and disbursements for the fiscal year ended December 31, 1951.

The statement is in the same general form as printed last year so that comparisons may be made.

Receipts	Schedule A
Disbursements	Schedule B
Bonds Retired	Schedule C
Bonds Outstanding	Schedule D
Notes Outstanding	Schedule E

SCHEDULE A

Receipts from Operations

1951				
Jan. 31	Fixture Rates	$ 8,245.88		
	Meter Rates	4,920.97		
	Services	208.17		
	Miscellaneous	937.20		
			$ 14,312.22	
Feb. 28	Fixture Rates	$ 692.36		
	Meter Rates	1,753.97		
	Services	339.22		
	Miscellaneous	196.79		
			$ 2,982.34	
Mar. 31	Fixture Rates	$ 189.14		
	Meter Rates	9,899.52		
	Services	122.92		
	Miscellaneous	246.29		
			$ 10,457.87	
Apr. 30	Fixture Rates	$ 167.99		
	Meter Rates	4,134.19		
	Services	492.43		
	Miscellaneous	140.42		
			$ 4,935.03	
May 31	Fixture Rates	$ 150.80		
	Meter Rates	1,705.74		
	Services	1,831.30		
	Miscellaneous	263.39		
			$ 3,951.23	

June 30	Fixture Rates	$ 30,731.60		
	Meter Rates	10,301.28		
	Services	310.28		
	Miscellaneous	1,202.07		
			$ 42,545.23	
July 31	Fixture Rates	$ 5,801.17		
	Meter Rates	4,340.11		
	Services	774.11		
	Miscellaneous	215.09		
			$ 11,130.48	
Aug. 31	Fixture Rates	$ 753.11		
	Meter Rates	2,418.44		
	Services	684.07		
	Miscellaneous	202.32		
			$ 4,057.94	
Sept. 30	Fixture Rates	$ 134.31		
	Meter Rates	11,271.43		
	Services	296.28		
	Miscellaneous	6,952.38		
			$ 18,654.40	
Oct. 31	Fixture Rates	$ 142.78		
	Meter Rates	4,988.55		
	Services	727.29		
	Miscellaneous	4,776.42		
			$ 10,635.04	
Nov. 30	Fixture Rates	$ 99.27		
	Meter Rates	2,044.32		
	Services	357.05		
	Miscellaneous	805.60		
			$ 3,306.24	
Dec. 31	Fixture Rates	$ 21,976.08		
	Meter Rates	11,052.63		
	Services	310.89		
	Miscellaneous	278.81		
			$ 33,618.41	
	Total Receipts from Operations		$160,586.43	
	Received from Rents		1,586.00	
	Withholding Tax		3,427.21	
	Sales Tax		1,129.94	
	Interest, Augusta Savings Bank		.39	
	Interest, Kennebec Savings Bank		.22	
	Notes Payable		150,000.00	
				$316,730.18

Cash on Hand and in Banks January 1, 1951

Cash on Deposit in First National Granite Bank	$ 19,854.64		
Cash in Office	150.00		
Deposit in Augusta Savings Bank	19.91		
Deposit in Kennebec Savings Bank	9.01		
		$ 20,033.56	
			$336,763.74

SCHEDULE B

Disbursements

1951				
Jan. 31	General Expense	$ 10,268.52		
	Payroll	3,876.70		
	Bond Interest	5,923.12		
			$ 20,068.34	
Feb. 28	General Expense	$ 6,020.65		
	Payrolls	3,814.86		
			$ 9,835.51	
Mar. 31	General Expense	$ 5,549.64		
	Payrolls	3,872.63		
	Bond Interest	440.00		
	Interest on Note	1,000.00		
	Notes Paid	100,000.00		
			$110,862.27	
Apr. 30	General Expense	$ 13,644.03		
	Payrolls	4,844.25		
	Bond Interest	450.00		
			$ 18,938.28	
May 31	General Expense	$ 6,753.88		
	Payrolls	4,207.21		
			$ 10,961.09	
June 30	General Expense	$ 18,751.30		
	Payrolls	4,594.51		
			$ 23,345.81	
July 31	General Expense	$ 11,121.83		
	Payrolls	5,674.40		
	Bond Interest	5,923.13		
	Bond Retirement	10,000.00		
			$ 32,719.36	
Aug. 31	General Expense	$ 6,474.09		
	Payrolls	4,456.83		
			$ 10,930.92	
Sept. 30	General Expense	$ 12,057.66		
	Payrolls	4,064.22		
	Bond Interest	440.00		
	Bond Retirement	10,000.00		
	Interest on Note	1,000.00		
			$ 27,561.88	
Oct. 31	General Expense	$ 9,095.85		
	Payrolls	5,123.27		
	Bond Interest	450.00		
	Bond Retirement	5,000.00		
	Interest on Note	200.00		
			$ 19,869.12	
Nov. 30	General Expense	$ 4,605.26		
	Payrolls	4,309.15		
			$ 8,914.41	
Dec. 31	General Expense	$ 6,407.43		
	Payrolls	4,969.54		
			$ 11,376.97	
Total Operating Disbursements			$305,383.96	
Sales Tax			1,325.17	
				$306,709.13

January 1, 1952 — Cash on Hand in Banks

First National Granite Bank	$ 29,875.08	
Cash in Office	150.00	
Augusta Savings Bank	20.30	
Kennebec Savings Bank	9.23	
		$ 30,054.61
		$336,763.74

Summary

General Expense	$110,750.14	
Payroll Expense	53,807.57	
Notes & Interest Paid	102,200.00	
Bond Interest	13,626.25	
Bonds Retired	25,000.00	
Sales Tax	1,325.17	
		$306,709.13

SCHEDULE C

Bonds Retired

1951		
July	Paid from receipts from Operations to retire 3¼% Bonds due Aug. 1, 1951	$ 10,000.00
Sept.	Paid from Receipts from Operations to retire 4% Bonds due Oct. 1, 1951	$ 10,000.00
Oct.	Paid from Receipts from Operations to retire 2% Bonds due Nov. 1, 1951	$ 5,000.00
		$ 25,000.00

SCHEDULE D

Statement of Bonds Outstanding

Dec. 31, 1951	*Total Issue*	*Retired*	*Outstanding*
* Refunding Serial 1934 — 3¼% Due 1954	$474,500.00	$120,000.00	$354,500.00
* Extension and Improvement Serial 1926 — 4% — Due 1956	300,000.00	288,000.00	12,000.00
x Improvement Serial 1939 –2% Due 1959	100,000.00	60,000.00	40,000.00

* $10,000.00 Each Year
x $ 5,000.00 Each Year

SCHEDULE E

Notes Outstanding

First National Granite Bank	2%	$120,000.00
Kennebec Savings Bank	2½%	30,000.00

Respectfully Submitted

GEORGE F. GIDDINGS,
Treasurer

History of the Augusta Water District

Not many citizens of Augusta know that they are part owners of a $2,000,000 corporation with its plant located in every street in town and in parts of neighboring towns. It carries on its work and serves every resident in the City, day and night year round, rain or shine. Very little is thought about it when things go as they should, but when something happens to interrupt service for a short time, everyone misses it and wonders what would happen if there were no Augusta Water District, or some organization of similar nature.

Without a water system there would be no city, anywhere in the world. The great cities of the ancient world were made possible only because there was a public water supply, usually publicly owned, as is the Augusta Water District.

This system with which we are all associated was not always so widely owned nor so widespread in its service. Years ago, back in 1870, there was no public supply of any kind. Most residents had wells in their back yards or piped water from springs back on the hills to small cisterns in the cellar from which they carried or pumped what little water they required.

There was some fire protection but quite limited in its capacity. On numerous street corners large wells were dug which were bricked up and covered over, into which the old hand fire pumps and later steam fire engines could drop their suction pipes and pump water enough to put out a small fire. These have mostly been filled up and abandoned as a hazard to life and property as a consequence of the heavy traffic of modern times. If a fire occurred near the river it was a simple thing to take water from it by means of pumps or bucket brigades.

In 1870 the Augusta Water Company was incorporated and Kennedy Brook was dammed up as a supply. This brook flows

from back of the Gannett Estate on Western Avenue to the river, crossing Sewall Street and State Street south of the State House. This dam made a fine swimming hole and was largely used for that purpose for many years, even while the residents of Augusta drank from its waters.

After building the Johnson Dam, pipes made of wood were laid down the brook valley and across lots to Grove and Capitol Streets, State, Winthrop, Water, East and West Crescent, Gage, Child, Green, Sewall and Bridge Streets. Fire hydrants were located at intervals on State and Water Streets.

The demand for water from this source soon exceeded the available supply and the new steam fire engine was used to pump water from the river into a Water Street hydrant. A little later pumps were installed near the railroad bridge to pump from the river into the system.

This makeshift supply was not satisfactory and in 1886 a new company was formed composed of George P. Wescott of Portland, J. H. Manley, Daniel A. Cony, Oscar Holway and J. M. Haynes of Augusta and J. R. Bodwell of Hallowell. This new company proposed to build a completely new system, using the Kennebec River as a supply, the water to be taken from a point above the dam, through a conduit, to be thoroughly screened and filtered before pumping. The Company was to put in and maintain force pumps of a capacity not less than 2,000,000 gallons in 24 hours, to build and maintain a reservoir of a capacity of 6,000,000 gallons to be located at a point where the top of the reservoir should be not less than 296 feet above low tide in the Kennebec River, to lay and maintain a system of cast iron pipes of certain sizes in certain streets, to furnish, set and maintain 80 hydrants, to furnish free water for certain purposes, to furnish water to the city and private takers at a certain schedule of rates, and to complete the works on or before October 1, 1887.

This system, the basis of the present works of the Augusta Water District, included 21.38 miles of pipe, mostly cast iron

and still in service, 86 hydrants, a six million gallon reservoir on Winthrop Hill, the pumping station and filters in the Edwards Mfg. Co. mill yard and 419 service connections to dwelling houses and business places.

In 1889 the new Company leased the previous one, then known as the Devine Water Company with 124 service connections.

During the next few years certain improvements and extensions were made to the plant, including additional pumps, filters, a new 16 inch force main from the pumping station directly to the reservoir and a 300,000 gallon standpipe at the Soldiers Home at Togus.

By 1903 the system had grown to 31.69 miles of mains, 124 hydrants and 1,528 services.

THE AUGUSTA WATER DISTRICT

For several years typhoid fever had been common in Augusta and in the Winter of 1902–1903 it became so prevalent as to be almost epidemic. There were several hundred cases and many deaths. It was the general belief of those who gave the matter careful study that the disease had its origin in the city water supply which was badly polluted by the sewage of the cities and towns above Augusta.

The Augusta Water Company was reluctant to procure a new supply or improve the one in use at the time. Accordingly a group of citizens, including among their number Governor Hill, George E. Macomber and Thomas J. Lynch, decided to present a bill to the Legislature providing for the formation of a water district in Augusta.

This Act was finally passed by the Legislature and approved by Governor Hill on March 26, 1903 and accepted by the people of the District at a special election in June of that year by a vote

of 1,416 to 209; and at a special meeting of the Board of Municipal Officers of Augusta, John F. Hill, George E. Macomber and Thomas J. Lynch were elected as Trustees of the District.

Section I of the Act defines the territorial limits of the District as follows: "The following territory and the people within the same, namely: Wards one, two, three, four, six, seven and eight in the city of Augusta, shall constitute a body politic and corporate under the name of the Augusta Water District, for the purpose of supplying the inhabitants of said District and of the towns of Chelsea, Vassalborough, China and Manchester, and such municipalities, together with the city of Augusta, with pure water for domestic and municipal purposes."

The Act further authorized the District to take and hold sufficient water of the Kennebec River, and China Lake for such purposes, to build dams and reservoirs, lay pipes in streets of certain towns and cities, and take by right of eminent domain the entire plant, rights and privileges then held by the Augusta Water Company, authorized the raising of money by bond issue to buy and improve the existing plant, and provide for rates sufficient to pay current operating expenses, extensions of service, interest on the debt and Sinking Fund. It also made the Bonds of the District legal investment for savings banks.

Other Acts authorized the District to take water from Carleton Pond in Readfield and Winthrop, controlled pollution of Carleton Pond, authorized the District to supply water in East Winthrop, Hallowell, The State School for Girls at Hallowell, and removed the towns of Chelsea and Vassalborough from the territory to be served.

Upon organization of the Board of Trustees with John F. Hill as President, negotiations for the purchase of the works of the water company were at once begun. It soon became apparent that an agreement could not be reached and condemnation proceedings were begun, with appraisers appointed by Justice Spear. A hearing was held on March 1, 1904 at which the appraisers

fixed a valuation of $427,135.20 upon the property and franchises of the Company. On May 16, 1904 the amount was paid and the works became the property of the District.

Between the time the Trustees were elected and the acquisition of the plant, investigations had been made of surrounding bodies of water for use as a possible new supply for the District. No lake east of Augusta nearer than China Lake was found suitable and the distance to that source was prohibitive as to cost. West of the river Silver Lake was found to be of suitable quality but insufficient in amount. Cobbosseecontee Lake was ample in size and quality but the cost of pumping would be great. Two miles farther west was Carleton Pond, at sufficient elevation to reduce the pumping cost to a great degree and of ample quantity and good quality.

The decision was made to use this supply with Cobbosseecontee Lake as an auxiliary supply in case Carleton Pond should be insufficient at times.

On May 17, 1905, work was started on the new line to Carleton Pond with Nichols-Magee Construction Company of Taunton, Mass., as General Contractor. The new supply consisted of a new dam at Carleton Pond, gate house, pumping station at East Winthrop containing two centrifugal pumps, driven by electricity drawing water from Carleton Pond, a steam pump drawing water from Cobbosseecontee Lake, 6 miles of 24 inch, and 2 miles of 20 inch cast iron pipe with appropriate gate valves and other fixtures.

The pipe line runs in almost a direct line from Carleton Pond to the Pumping Station on the shores of Cobbosseecontee Lake in East Winthrop then north of the Winthrop Road through Manchester near the Pope Farm around the hill now known as Pelton Hill, north of the former Pattangall Farm to the reservoir. This circuitous route was necessary due to the high elevation of the land between East Winthrop and the reservoir. It was essential that the pipe line be kept below the level of the water in

Carleton Pond to insure gravity flow and avoid air pockets at high points.

A 24 inch suction main was laid from the pumping station to a point about 500 feet off Welches Point in about 20 feet of water to take a supply from Cobbosseecontee Lake when necessary.

This new source of supply was turned into the mains of the city and the Kennebec River supply abandoned on January 18, 1906.

During this period the system in town was reinforced and improved extensively. A 16 inch pipe was laid in Water Street from the reservoir force main to the bridge, a second 10 inch main across the bridge and up Cony Street to Stone where it was connected with the 10 inch main to Togus, and other mains were laid and enlarged throughout the city.

From that period to the present time a steady program of extension and improvement of the system has been carried on by the District.

The District has increased in the value of its total assets from a little less than $800,000 in 1906 to $2,300,000 at the end of 1951. Its income has expanded from $46,000 in 1907 to $138,483 from operations in 1951.

The physical plant has much more than doubled in size, expanding at a greater rate than the population of Augusta, due to the extending of service to much of the rural area of Augusta.

In 1906 there were 31 miles of main pipes; at the end of 1951 there were more than 81 miles. Service connections increased from 1,500 to 4,000 during this same period.

The District has issued its bonds at various times to make possible the purchase and expansion of the original system, 1904, $700,000; in 1926, $300,000 in bonds were issued to make further additions and improvements and in 1939 an additional

$100,000 paid for still other improvements, the principal one of which was the underwater river crossing of 16" pipe to insure continuity of supply to the easterly section of the city in case of bridge failure.

Out of the $1,100,000 in bonds issued over the past forty years there remain outstanding at present $406,500 which are being retired annually at the rate of $25,000.

Among the additions made to the plant since the 1906 expansion program are a number of major projects, largest of which was the construction in 1926 of a ten million gallon reservoir on the hill west of the City Farm. This reservoir increased the storage capacity from six to sixteen million gallons, a sufficient amount of water to supply the city for about 5 days.

Other storage facilities, in the form of steel tanks were built near the high point of Northern Avenue, near the Camp Keyes section, and about one and one-half miles out Western Avenue, all requiring small pumping stations to provide better service to residents.

At the Veterans Hospital at Togus a new steel tank was erected in 1939 to replace an old one that had lived its useful life and was not of sufficient height to supply the top floors of the newly built hospital building.

In the early part of the 1920's a considerable amount of land was purchased on the drainage areas of Carleton Pond, buildings were removed and all the cleared land planted to pine and spruce trees to provide a better and more continuous supply of water. In 1923, at the suggestion of the State Department of Health, apparatus was purchased to sterilize the water by means of chlorine, thus eliminating all danger of a water borne outbreak of disease.

In 1925 and 1926 new buildings were erected on Arsenal and Williams Streets housing the workshops, equipment and offices of the District, which had formerly been located in the city hall and in a small building to the North of it. In 1944 the Ripley property adjacent to the Williams Street lot was purchased to provide additional storage space.

Extensions of service have been made to outlying sections of the city, in Riverside Drive to the Vassalboro line, in Northern Avenue and Townsend Road, in Mount Vernon Avenue, in Western Avenue to the foot of Pelton Hill, and in North and South Belfast Avenues as far as there is sufficient demand to make extensions practicable.

In 1925 a large cast iron pipe was installed to supply the South end of the city with better fire protection, consisting of a 16″ main from north of the Avenue Farm to Western Avenue and easterly to the residence of W. H. Gannett, then reducing to 12″ as far as Sewall Street, then 12″ to Capitol Street and State Street, and 8″ pipe northerly to Western Avenue, thus providing a much greater supply of water for all purposes in that area.

Much of the small main pipe in the thickly settled part of Augusta has been replaced by larger sizes for better service, so that at the present time there is little pipe smaller than 6″ diameter in the system except for summer lines at the lake cottage settlements. During the construction of the new toll bridge and approaches at Augusta, such pipes were installed during operations to provide adequate service along the new highways at each end of the bridge.

A considerable amount of the most modern types of construction equipment designed especially for water utility operation is owned by the District and more is being added as the need develops, so that much hand labor is eliminated and work of all kinds can be performed more rapidly and at less expense to the District than if hand labor were used exclusively.

In 1950 about four miles of the main highway to Waterville were reconstructed by the State. Water service as far as the Vassalboro line consisted of a single line of six inch pipe which had been installed over a period of about thirty years, in the westerly shoulder of the existing road.

The new road was made wider and its grade was changed in several places, so that at some points the old six inch pipe would have been buried more than 15 feet and in others it would have

been above the surface of the new road, as would many of the service connections. Most of the hydrants would have been too near the traveled part for safety.

Accordingly it was necessary to replace much of the water pipe. Where main pipe was to be replaced it was enlarged to ten inch diameter, all hydrants were relocated to a point 20 feet from the edge of the paving and all house services were changed to copper.

A considerable part of the road was built through solid rock and arrangements were made, by a system of parallel mains, to provide a main pipe on each side of the highway for part of the way. At several points branches were installed across the paving where proposed streets had been laid out.

It is hoped that with these changes service can be rendered to buildings erected on either side of the road in the future without excavating the paved surface.

The continued period of subnormal rainfall, together with increasing requirements for water service have, during the past few years, indicated that the regular supply drawn from Carleton Pond will in the future be inadequate to supply our needs. New and larger pumps have been installed at the East Winthrop pumping station to partially meet this need by supplementing Carleton Pond from Lake Cobbosseecontee. However, at certain periods of the year when large use of this lake is made for recreational purposes, it would be inadvisable to use it for drinking water.

Accordingly, during the past two years studies have been made of additional supplies which may be obtained for our use. There being no suitable ponds or lakes within easy reach of the city, studies of underground supplies were made. Certain of these have been found suitable and will be developed when need arises.

The District's affairs are governed by a board of three Trustees, one of whom is elected annually by the Municipal Officers of Augusta, to hold his office for three years. These three in turn appoint a superintendent and engineer who is responsible for the operation and maintenance of the entire system.