53991

ANNUAL REPORT

1988

ELMIRA WATER BOARD

CITY OF ELMIRA

NEW YORK

ELMIRA WATER BOARD

Commissioners

CLAY W. HOLMES	1913-1919
ARCHIE M. BOVIER	1913-1931
HENRY J. HAASE	1913-1923
THOMAS MILAN	1913-1918
CASSIUS A. PHILLIPS	1913-1917
FRANCIS E. BALDWIN	1917-1927
CORNELIUS W. O'SHEA	1918-1928
CHARLES G. BRAND	1919-1924
M. DOYLE MARKS	1919-1954
RAYMOND A. TURNBULL, M.D.	1923-1939
SAMUEL COTTON	1927-1930
HARRY J. LAGONEGRO	1928-1952
FRANCIS G. MALONEY	1930-1937
FRANCIS A. RICHMOND	1931-1956
CLARENCE D. RICHARDS	1937-1938
JOHN M. FRENCH	1938-1942
CHARLES A. AUSTIN II	1939-1968
WILLIAM W. GREGG	1942-1955
THOMAS S. CRAIG	1952-1968
WILLIAM S. BENNETT	1954-1966
WILLIAM R. PALMER	1955-1956
JOHN F. CUSICK	1956-1957
OWEN P. McCARTHY	1956-1975
JAMES P. HUNTER	1957-1972
CLIFFORD PERRY	1967-1973
EDWARD L. KELLY	1968-1977
FRANCIS G. SCANLIN	1968*
R. KEITH MATANLE	1972-1987
ROBERT G. PROCHNOW	1973*
JOSEPH A. LYNCH	1976-1981
KATHLEEN R. PAYETTE	1978-1980
LOUISE F. POTTER, Ph.D.	1980-1983
ANN B. STREETER	1981*
ROBERT PERSONIUS	1984*
RUTH G. MURRAY	1987*

General Manager

HARRY M. BEARDSLEY	1915-1942
JOHN G. COPLEY	1942-1972
L. EDWARD CONSIDINE, JR.	1972*

Secretary

JOHN J. McNEVIN	1913-1937
JOHN G. COPLEY	1937-1942
J. L. NEWMAN	1942-1951
L. E. EYRES	1952-1961
STEWART ZIMMERMAN	1962-1983
ROBERT W. APPLEBY	1983*

* Now in Office.

ROBERT PERSONIUS

ROBERT G. PROCHNOW

FRANCIS G. SCANLIN

RUTH G. MURRAY

ANN B. STREETER

REPORT
TO
MAYOR AND COUNCIL
Elmira, New York

February 14, 1989

To the Honorable Mayor and Council
Elmira, New York

Mayor Hare and City Council:

The commissioners of the Elmira Water Board present herewith, as provided by our Charter, a report covering the activities, progress and financial condition of our water utility system for the calendar year 1988.

The Elmira Water Board has continued all approved practices in the treatment and testing of its water supply which continues to meet all requirements of the regulatory bodies having jurisdiction over the Board's treatment operations. The Elmira Water Board retains Friend Laboratories in Waverly, N.Y. and Galson Technical Services, Inc. of E. Syracuse, N.Y. to conduct the various tests on Elmira Water Board water samples which are required by the New York State Department of Health. The Elmira Water Board has its own laboratory where routine bacteriological and operational quality control analyses are run on our water on a regular basis.

The total water treated at the Filtration Plant and at the Board's wells amounted to a total of 3,565,046,000 gallons which is 114,006,000 gallons more than the 1987 production amount, for an increase of about 3.3%.

The Winter of 1987-1988 was not too severe for Elmira Water Board personnel but they did repair nine water main breaks, ranging in size from 1¼" thru 8". They also repaired one broken service line and they spent some time trying to find the location of a 1¼" main break on Homewood Avenue. This latter break was hard to find due to frost depth and the very porous soil in the area. The cost of the work mentioned above was $22,455.67. Elmira Water Board personnel repaired a total of twenty-eight main breaks in 1988. They also repaired two broken private water mains which were billed to the owners.

In advance of various area paving programs, Water Board personnel did some water distribution system construction and maintenance work. They renewed a total of fifty water service lines in various streets which were scheduled to be repaved or reconstructed. They installed 330 feet of 2" copper main to replace a similar amount of old wrought iron main in the Town of Southport. They also replaced three gate valves and three blow-offs on streets to be repaved. The total cost of this work was $62,848.79.

Elmira Water Board personnel installed 715 feet of new 6" ductile iron water

main in W. Eleventh Street. This replaced a similar amount of old 2" wrought iron main which was very old and which broke many times in recent years. On this project, Elmira Water Board personnel renewed nine water service lines and they installed a new gate valve. The total cost of this project was $27,117.47.

Elmira Water Board personnel and personnel from the Mainlining Service, Inc. did some water main cleaning and lining work in 1988. They cleaned and lined about 2,251 feet of existing 6" water main at three locations which were the source of numerous discolored water problems. On this project, Water Board personnel replaced three old gate valves with new valves and they replaced and relocated a complete hydrant installation. They also did all the temporary service installation work, did all the excavation, back-fill and water main cutting work. Elmira Water Board personnel had everything ready for the Mainlining Service, Inc. personnel to do their work as expeditiously as possible. When the lining work was done, Elmira Water Board personnel then did all the completion and cleanup work. The Elmira Water Board paid Mainlining Service, Inc. $43,316.33 for their work and the Elmira Water Board costs for the above work was $23,088.21 for a total cost of $66,404.54. The average cost for the cleaning and lining work, temporary service installation work, and related water main alteration work was about $26.78 per foot.

In the Miscellaneous Mains work order, Water Board personnel installed 768 feet of 1¼" main on six streets. 40 feet of new 2" main on Penna. Ave, and 180 feet of 1½" main on Epworth Circle. Also in this work order, they installed four new gate valves, two new blow-offs and they replaced one hydrant installation. The total cost in this work order in 1988 was $44,649.62.

In 1988, Elmira Water Board personnel replaced five hydrants which were broken or would not operate properly. They also repaired twenty-two hydrants which were observed to have certain problems in our regular hydrant inspection program. The total cost in this work order was $16,683.97.

Personnel from the Maintenance and Construction Department continue doing a significant amount of water service line construction work. In addition to what was reported above in the paving program work, they completed 143 water service line jobs, ranging in size from 3/4" thru 6" service lines.

In the Pumping and Filtration Department, a new Deming Pump and discharge piping were installed at the West Elmira Pump Station, and a chemical feed line at the Filter Plant broke and was replaced. A new tractor mounted rotary broom was purchased for reservoir cleaning work and some new filter rake arm castings were built. Some alterations were made on the boiler at the Filter Plant. These alterations were recommended by the Board's Insurance Company. The total cost of this work was $17,126.12. Personnel from the Layne, N.Y. Co. surged and developed Well #2 at Hudson Street which had lost capacity due to gravel pack blockage. This job cost $13,320.00. Shortly after Hudson Street Well #2 was returned to service, we experienced a submersible motor failure in the same well facility. Layne, N.Y. Company personnel returned to Elmira. They pulled the motor out of the well and it was shipped to a repair shop. A stand-by motor unit was installed in the well and Well #2 was once again returned to service. This latter job cost $2,706.31 which will be filed as a claim with our Insurance Company.

At the Maintenance Shop, the Gate Valve Room was completely remodeled at a total cost of $13,116.90. A cracked masonry window in the Compressor Room was replaced and an electric door operator was installed on the west overhead door to the Heavy Equipment Room at a total cost of $1,463.00. Additional work in and around the Maintenance Shop brought the total work order costs to $16,954.48.

The Elmira Water Board personnel continued to do their own permanent pavement repair work over various Water Board excavation areas. In 1988 they repaired about fifty-one excavation areas of various dimensions at a cost of $25,125.12. The permanent repair work on the W. Eleventh Street project was done by a contractor at a cost of $7,820.11. Elmira Water Board personnel were not able to do this job because it was an extensive job and they were busy on other projects at the time.

In 1988, the Elmira Water Board purchased one new car, a new Tractor-Loader-Backhoe unit, and a new one ton dump truck with a snow plow attachment at a total cost of $60,219.45.

The Elmira Water Board engaged the Hazen and Sawyer Consulting Engineering Firm to do a Water Supply Facilities Feasibility Study. This report indicated, among other things, that the Board should begin a Ground Water Testing Program which would study the Foster Island area. The study would determine to what extent ground water from future wells in Foster Island could replace water produced at the Kentucky Avenue Well Field and at the Sullivan Street Well Field. Both of these well fields have been effected by the local ground water contamination problems. Work on this study began in October of 1988 and was well underway at the end of 1988.

The Elmira Water Board continued to handle the billing for the Sewer User charges for the Chemung County Sewer District in 1988. The Sewer User charges were based on water consumption data. In 1988 the Elmira Water Board received $17,808.48 for performing this service.

The Financial Report of the Elmira Water Board, as prepared by the Devillers and Allen Certified Public Accounting firm, is appended hereto and made a part of this report.

The Elmira Water Board commissioners and the staff wish to express their gratitude for the cooperation and assistance received from the Mayor, City Council, the City Manager and his staff in connection with the work and operation of the Elmira Water Board.

Respectfully submitted,

ELMIRA WATER BOARD
Francis G. Scanlin
President

FGS/cs

DEVILLERS & ALLEN

CERTIFIED PUBLIC ACCOUNTANTS

306 E. CHURCH STREET

ELMIRA, NEW YORK 14901

(607) 734-8111

January 23, 1989

Elmira Water Board
261 West Water Street
Elmira, New York 14901

We have audited the accompanying balance sheets of the Elmira Water Board as of December 31, 1988 and 1987 and the related statements of revenues and expenses, and cash flows for the years then ended. These statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material mistatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statment presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Elmira Water Board as of December 31, 1988 and 1987, and the results of its operations and the changes in its cash flows for the years then ended in conformity with generally accepted accounting principles.

DEVILLERS & ALLEN

ELMIRA WATER BOARD
Balance Sheet

DECEMBER 31, 1988 AND 1987

	1988	1987
ASSETS		
Water plant in service, at cost		
Plant in service (Note 2)	$15,055,147	$14,724,202
Construction in progress	95,738	17,842
	15,150,885	14,742,044
Less: Accumulated depreciation	(5,483,760)	(5,275,020)
Total water plant in service	9,667,125	9,467,024
Capital reserve fund (Note 3)	291,272	276,200
Current assets		
Cash, operating	55,065	68,218
NYS Employees' Retirement Reserve Fund (Notes 3 & 5)	158,475	212,949
Temporary investments	52,793	27,343
Accounts receivable, less allowance for doubtful accounts of $2,527 in 1988 and $3,542 in 1987	212,692	213,833
Materials and supplies (Note 4)	211,734	185,325
Prepaid expenses	41,905	42,367
	732,664	750,035
	$10,691,061	$10,493,259
LIABILITIES AND INVESTMENT IN FACILITIES		
Current liabilities		
Accounts payable and accrued liabilities	$ 79,933	$ 58,789
Accrued NYS Employees' Retirement System contribution, current portion (Note 5)	156,921	145,000
Accrued vacation and sick leave, current portion	130,000	128,000
Total current liabilities	366,854	331,789
Long-term liabilities		
Accrued NYS Employees' Retirement System contribution (Note 5)	136,852	124,468
Accrued vacation and sick leave	242,000	205,000
Customer advances for construction	12,050	11,825
Total long-term liabilities	390,902	341,293
Investment in facilities		
Contributions in aid of construction	1,744,367	1,668,873
Accumulated excess of revenues over expenses reinvested in facilities	8,188,938	8,151,304
Total investment in facilities	9,933,305	9,820,177
	$10,691,061	$10,493,259

The accompanying notes are an integral part of these financial statements.

ELMIRA WATER BOARD
Statement of Revenues and Expenses

YEARS ENDED DECEMBER 31, 1988 AND 1987

	1988	1987
Operating revenues		
Water sales	$ 2,985,153	$ 2,885,967
Other customer services	107,637	79,291
	3,092,790	2,965,258
Operating expenses		
Source of supply	102,529	77,961
Power and pumping	609,687	606,212
Purification	385,759	329,910
Distribution	737,488	727,431
Cost of other customer services	76,765	64,767
Billing and collection	291,602	275,975
Administration and general	358,571	365,929
Real estate taxes	270,333	251,097
Depreciation (Note 2)	253,680	243,300
	3,086,414	2,942,582
Operating revenues over expenses	6,376	22,676
Non-operating additions		
Interest income	31,258	28,120
Revenues over expenses	37,634	50,796
Accumulated excess of revenues over expenses reinvested in facilities		
Beginning of year	8,151,304	8,100,508
End of year	$ 8,188,938	$ 8,151,304

The accompanying notes are an integral part of these financial statements.

ELMIRA WATER BOARD
Statement of Cash Flows

YEARS ENDED DECEMBER 31, 1988 AND 1987

	1988	1987
Revenues over expenses	$ 37,634	$ 50,796
Effects of all deferrals and accruals on operating receipts and payments such as:		
Changes in accounts receivable	1,141	(8,496)
Changes in materials and supplies	(26,409)	14,740
Changes in prepaid expenses	462	(1,056)
Changes in accounts payable and accrued liabilities	21,144	(6,107)
Changes in accrued NYS Employees' Retirement System	24,305	(9,600)
Changes in accrued vacation and sick leave	39,000	9,812
Changes in customer advances for construction	225	(32,650)
Effects of all items whose cash effects are investing or financing cash flows		
Depreciation	253,680	243,300
Net cash from operating activities	351,182	260,739
Cash flows from investing activities:		
Additions to water plant in service	(375,885)	(264,661)
Change in construction in progress	(77,896)	(7,768)
Change in contributions in aid of construction	75,494	71,122
Net cash from investing activities	(378,287)	(201,307)
Net increase (decrease) in cash	(27,105)	59,432
Cash, beginning	584,710	525,278
Cash, ending	$557,605	$584,710
At December 31, cash consisted of the following:		
Capital reserve fund	$291,272	$276,200
Cash operating	55,065	68,218
NYS Employees' Retirement Reserve Fund	158,475	212,949
Temporary investments	52,793	27,343
	$557,605	$584,710

The accompanying notes are an integral part of these financial statements.

ELMIRA WATER BOARD

Notes to the Financial Statements

December 31, 1988

1. SIGNIFICANT ACCOUNTING POLICIES

The Elmira Water Board's accounting policies conform, in general, to the predominant practices of medium-sized water companies and are based on generally accepted accounting principles. The policies, which are outlined in the following notes, include all policies considered especially significant to water utilities.

2. WATER PLANT IN SERVICE

	1988	1987
Source of supply	$ 1,112,210	$ 1,112,210
Power and pumping	695,423	693,780
Purification and treatment	877,348	874,265
Distribution	11,334,510	11,111,663
Other	1,035,656	932,284
	$15,055,147	$14,724,202

Depreciation is provided on the straight-line method over the estimated useful lives of the asset groups by application of composite rates ranging from .93% to 20.0% and averaging approximately 1.69%, and amounted to $253,680 and $243,300 in 1988 and 1987.

Maintenance and repairs are charged to operating expenses whereas additions, improvements, and replacements are capitalized. When facilities are retired, the cost is removed from the asset accounts and charged or credited, net of sales or salvage realization, to the accumulated depreciation account. Dismantling and other costs of retirements are also charged to the accumulated depreciation account.

3. SPECIAL FUNDS

The Capital Reserve Fund was created in 1971 as a means of funding future additions to the water plant. The New York State Employees' Retirement Reserve Fund consists of voluntary funding for the purpose of meeting required contributions to the New York State Employees' Retirement System.

ELMIRA WATER BOARD

Notes to the Financial Statements

December 31, 1988

At December 31, 1988, special funds consisted of the following assets:

	New York State Employees' Retirement Reserve Fund	Capital Reserve Fund
Cash savings	$158,475	$291,272

4. MATERIALS AND SUPPLIES

Inventories are stated at cost as determined on the average cost method.

5. NEW YORK STATE EMPLOYEES' RETIREMENT SYSTEM CONTRIBUTIONS

Substantially all of the employees of the Elmira Water Board are covered under the New York State Employees' Retirement System. Pension costs were $144,309 and $151,281 for 1988 and 1987.

The accrual at December 31, 1988, is comprised of the estimated contribution for the year ended March 31, 1988, to be paid in June of 1989 (current portion), plus the estimated contributions for the nine months ended December 31, 1988, to be paid in June of 1990 (non-current portion).

It is the Board's policy to fund pension costs currently. However, the accrual at December 31, 1988 exceeds the funding by approximately $135,298.

The State of New York and the various local governmental units and agencies which participate in the Retirement System are jointly represented, and it is not possible to determine the actuarially computed value of vested benefits for the Board on an individual basis.

REPORT
OF
GENERAL MANAGER

June 15, 1989

Commissioners
Elmira Water Board
Elmira, New York

Gentlemen, Mrs. Streeter and Mrs. Murray:

This report presents detailed information and statistics on the progress made by the Elmira Water Board in 1988. The form of this report will follow that of previous reports so that the report may serve to indicate trends in the Water Board operations over the past years.

The Report to Mayor and Council of the City of Elmira, which appears in the first part of this Annual Report, outlines some of the more significant work undertaken by the Elmira Water Board in 1988.

The Elmira Water Board normally installs new water mains to provide for new or improved customer services. In 1988, Elmira Water Board personnel installed about 2033 feet of new water mains which is slightly more than the 1410 feet of new mains installed in 1987. The NYSDOT installed about 1307 feet of new water mains in the Washington Avenue project which were contributed to the Elmira Water Board as a Contribution in Aid of Construction.

MAINS INSTALLED IN 1988

Size	Feet	Cost	Average Cost Per Foot
1¼"	768'	$15,147.66	$ 19.73
1½"	180'	3,900.00	21.67
2"	370'	8,576.53	23.18
6"	1036'	30,392.69	29.34
8"	199'	9,138.08	45.92
10"	787'	36,926.04	46.92
	3340'		

The Elmira Water Board retired about 4029 feet of old water mains in 1988. They retired about 510 feet of 6" main in Fisher Road, which served the old City Milton Street Sewage Treatment Plant. They also retired an old and abandoned 10" river crossing at Madison Avenue which has been out of service for many years. There was also some 10" main retired in the NYSDOT Washington Avenue projec which was replaced by the project contractor.

MAINS RETIRED IN 1988

Size	Feet	Cost	Average Cost Per Foot
1″	22′	$ 13.91	$ .64
1¼″	290′	118.20	.41
2″	1386′	1,575.71	1.14
6″	510′	906.72	1.78
8″	33′	8,851.62	268.23
10″	1788′	4,191.81	2.35
	4029′		

DISTRIBUTION MAIN TYPE OF MATERIAL

Wrought Iron and Steel		28 082
Copper		48 327
Plastic		6 466
Cast Iron (Bell & Spigot)	549,646	
Cast Iron (Universal Joint)	196,661	
Cast Iron (Special Joint)	24,849	
Cast Iron (Mechanical Joint)	121,669	
Cast Iron (Tyton Joint)	30,797	
Total Cast Iron	923,622	923 622
Asbestos Cement		109.210
Pre-stressed Concrete		21.203
	TOTAL	1,136 810

The table below presents the total footage of pipe in the Elmira Water Board distribution system by size:

TOTAL MAINS IN ELMIRA WATER BOARD SYSTEM
December 31, 1988

SIZE	TOTAL
¾″ to 3″	78,983
4″	19,951
6″	610,625
8″	175,501
10″	65,307
12″	111,114
16″	25,528
20″	23,453
24″	24,829
30″	1,519
	1,136,810

The progress for the gate valve installation and replacement program is noted in the table below:

1988 GATE VALVE INSTALLATION & REPLACEMENT PROGRAM

Main Gates	Jan. 1, 1988	Total Added	Replaced and Retired	Total Jan. 1, 1989
Under 4"	663	6	5	664
4"	106	1	1	106
6"	1,743	6	7	1,742
8"	508	1	1	508
10"	141	1	2	140
12"	321			321
16"	59			59
20"	46			46
24"	20			20
30"	7			7
	3,614	15	16	3,613
Hydrant Gates:				
4"	17			17
6"	1,205	4	2	1,207

Elmira Water Board personnel also installed 3 additional Blow-offs on existing deadend mains and replaced 2 Blow-offs.

2 Fire Line gates were retired, with no new or replaced gates.

Tables showing the net increase in service lines in 1988 and total services separated by sizes and political sub-division are noted as follows:

NET GAIN IN SERVICES IN ELMIRA WATER BOARD SYSTEM
December 31, 1988

Size	City of Elmira	Elmira Heights	Town of Elmira	Town of Horseheads	Town of Southport	Total
¾"	+ 7	+ 5	+ 2	+ 5	+ 6	+25
1"	+ 3	—	—	—	+ 4	+ 7
1¼"	—	+ 1	—	—	—	+ 1
1½"	+ 2	—	—	—	—	+ 2
2"	+ 1	—	—	+ 1	—	+ 2
	+13	+ 6	+ 2	+ 6	+10	+37

SERVICES IN ELMIRA WATER BOARD SYSTEM
December 31, 1988

Size	City of Elmira	Elmira Heights	Town of Elmira	Town of Horseheads	Town of Southport	Total
¾"	9,698	1,404	1,870	853	2,674	16,499
1"	433	76	256	60	75	900
1¼"	190	34	49	21	28	322
1½"	144	13	33	12	12	214
2"	196	24	23	25	20	288
3"	10	—	—	—	2	12
4"	123	10	4	6	6	149
6"	169	12	6	9	14	210
8"	24	6	2	5	8	45
10"	—	—	—	4	—	4
12"	1	—	—	1	—	2
	10,988	1,579	2,243	996	2,839	18,645

One of the tables above shows a net increase in services of 37 but does not indicate the actual amount of work done by Elmira Water Board personnel on water service lines in 1988. They renewed a total of 151 existing water service lines, they installed 39 new water service lines and they repaired 3 water service lines. The new water service line construction work in 1988 ranged in size from ¾" to 6". In the larger size lines, they installed 3 new 2" service lines and a new 6" Fire Line into a new warehouse in the City Industrial Park.

The net gain (+) or (−) in services in the Elmira Water Board system since 1972 is as follows:

Year	Net Gain (+) or loss (−)
1988	+ 37
1987	+ 24
1986	+ 33
1985	+ 37
1984	+ 28
1983	+ 23
1982	+ 8
1981	+ 8
1980	+ 22
1979	+ 25
1978	− 13
1977	− 82
1976	− 122
1975	+ 61
1974	+ 25
1973	+ 23
1972	− 93

The Elmira Water Board is 100% metered and this report indicates the Board owns 18,287 meters as of December 31, 1988. In 1988 the Board purchased 136 meters in various sizes and they retired 295 meters for a net decrease of 159 meters.

Tables showing meters by size and manufacture both in stock and in service and the net changes in 1988 are as follows:

METERS IN ELMIRA WATER BOARD SYSTEM

December 31, 1988

	⅝″	¾″	1″	1¼″	1½″	2″	3″	4″	6″	8″	10″	12″	16″	Total
Neptune Trident	8,777	112	272	121	100	172	5	31	1	3	1	—	—	9,595
Neptune Lambert	45	—	—	—	—	—	—	—	—	—	—	—	—	45
Neptune Triseal Trident	7,382	24	96	9	25	71	—	12	15	—	—	—	—	7,634
Neptune Remote	59	—	1	—	1	—	—	—	—	—	—	—	—	61
Neptune Turbine	—	—	—	—	—	—	—	—	2	—	—	—	—	2
Pittsburgh Empire	13	—	—	—	—	2	1	2	1	—	—	—	—	19
Pittsburgh IMO	6	—	—	—	—	—	—	—	—	—	—	—	—	6
Rockwell	4	—	—	—	—	—	—	2	—	—	—	—	—	6
Kent	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Full Flow Compound	—	—	—	—	—	—	—	3	1	—	—	—	—	4
Hersey-Sparling	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Crest Straight Reading	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Hanks Conversion	11	—	—	—	—	—	—	—	—	—	—	—	—	11
Badger Turbo	—	—	—	—	—	1	3	5	—	—	—	—	—	9
Badger Recordall	806	12	13	—	11	15	—	1	1	—	—	—	—	859
Badger Remote	30	—	—	—	2	—	—	—	—	—	—	—	—	32
	17,134	148	382	130	139	261	9	57	21	3	1	1	1	18,287

NET DECREASE IN METERS IN ELMIRA WATER BOARD SYSTEM 1987

	⅝"	¾"	1"	1¼"	1½"	2"	3"	4"	6"	Total
Neptune Tndent	−248	−2	−7	−1	—	−11	−1	−3	−1	−274
Neptune Trseal Tndent	− 3	—	—	—	—	—	—	—	—	− 3
Neptune Remote	− 8	—	—	—	—	—	—	—	—	− 8
Pittsburgh IMO	− 1	—	—	—	—	—	—	—	—	− 1
Rockwell	—	—	—	—	—	—	−1	—	—	− 1
Badger Turbo	—	—	—	—	—	+ 1	+1	+2	—	− 4
Badger Recordall	+ 92	—	—	—	—	—	—	—	—	− 92
Badger Remote	+ 30	—	—	—	+2	—	—	—	—	− 32
	−138	−2	−7	−1	+2	−10	−1	−1	−1	−159

Elmira Water Board personnel installed one new hydrant for the City of Elmira in Pennsylvania Avenue, South of the viaduct in the new Powell Project.

HYDRANTS IN THE SYSTEM — 1988

	City of Elmira	Elmira Heights	Town of Elmira	Town of Horseheads	Town of Southport	Total
Kennedy Safetop	679	74	111	48	132	1.044
Kennedy Standard	63	8	15	4	23	113
Kennedy Guardian	15	5	—	—	2	22
R.D. Wood Hi-Top	14	1	1	—	1	17
	771	88	127	52	158	1.196

Elmira Water Board personnel worked on 27 hydrant jobs in 1988 and the scope of this work is described in the letter to Mayor and Council in the first section of this report.

The Elmira Water Board's 1988 Safety Record was the poorest in several years. For the sake of comparison, the safety record is as follows:

	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
Lost Time Injuries	5	0	4	2	2	5	1	2	0	5	7
Days Lost	42	0[2]	81	287[1]	44	171	20	28	0	8½	37
Medical Cases	11	5	9	8	6	4	12	9	6	20	17

[1]245 days attributed to one accident on 1/22/85. The employee was off the rest of the year.

[2] Two employees had recurrent health problems from previous injuries which resulted in a total of 60 days lost time.

In 1988, the Elmira Water Board vehicles were involved in 3 minor accidents, 2 of which were on Elmira Water Board property. The third was not an employees fault.

Mr. Grady from the New York State Insurance Fund, the Board's compensation insurance carrier, conducted periodic safety meetings.

Year	TOTAL WATER TREATED Gallons	DAILY AVERAGE Gallons	PERCENT INCREASE
1955-1959 Average	2,711,825,800	7,414,200	
1960	2,675,790,000	7,310,000	6.00%
1961	2,835,589,000	7,770,000	6.00%
1962	2,840,257,000	7,781,000	.14%
1963	2,985,538,000	8,180,000	5.10%
1964	3,262,180,000	8,193,000	9.00%
1965	3,409,772,000	9,341,000	4.80%
1966	3,788,637,000	10,380,000	11.15%
1967	3,994,868,000	10,945,000	5.00%
1968	4,095,323,000	11,053,000	1.27%
1969	3,827,778,000	10,487,000	−5.10%
1970	4,050,429,000	11,096,000	6.00%
1971	4,075,704,000	11,167,000	0.25%
1972	3,810,959,000	10,400,000	−6.60%
1973	3,920,405,000	10,730,000	2.80%
1974	3,708,001,000	10,159,000	−5.73%
1975	3,720,661,000	10,190,000	.34%
1976	3,650,228,000	9,973,000	−1.90%
1977	3,663,087,000	10,036,000	.35%
1978	3,531,861,000	9,680,000	−3.70%
1979	3,445,827,000	9,440,000	−2.40%
1980	3,656,134,000	9,989,000	6.10%
1981	3,657,827,000	10,024,444	.003%
1982	3,266,498,000	8,950,000	−11.98%
1983	3,249,328,000	8,902,000	−.005%
1984	3,441,220,000	9,402,200	5.62%
1985	3,466,508,000	9,497,300	.73%
1986	3,501,843,000	9,594,000	1.02%
1987	3,451,040,000	9,455,000	−1.50%
1988	3,565,046,000	9,767,000	3.30%

During 1988, the Hoffman Creek Reservoir provided about 85,520,000 gallons of raw water. This is about 2.4% of the total water produced from this source which is slightly more than 1987. The reservoir water is extremely soft and its ph and alkalinity make it difficult to treat on a short term basis. It is also possible to produce more water over a shorter period of time from the Chemung River source of supply.

Year	Inches Annual Rainfall	Gal. from Hoffman Ck.	Percentage of Total
1955 - 1959 avg.	35.21(avg.)	775,559,000	28.6%
1960	31.23	640,000,000	24.0%
1961	36.12	745,930,000	26.3%
1962	29.86	682,396,000	24.0%
1963	26.32	377,910,000	11.3%
1964	23.16	586,660,000	18.0%
1965	22.95	338,807,000	10.0%
1966	24.79	644,010,000	17.1%
1967	34.78	898,700,000	22.0%
1968	33.41	842,344,000	21.0%
1969	25.54	643,760,000	17.0%
1970	28.09	836,440,000	20.6%
1971	26.88	782,770,000	19.2%
1972	38.81	1,095,810,000	28.7%
1973	35.50	798,980,000	20.4%
1974	28.89	740,080,000	19.96%
1975	39.36	688,600,000	18.5%
1976	31.34	763,887,000	20.9%
1977	36.83	550,470,000	15.0%
1978	32.65	426,585,000	12.0%
1979	26.04	517,530,000	15.0%
1980	19.98	142,730,000	4.0%
1981	26.18	166,189,000	4.5%
1982	24.78	270,847,000	8.3%
1983	25.90	322,865,000	9.9%
1984	39.52	89,510,000	2.6%
1985	22.66	5,660,000	0.2%
1986	31.41	6,340,000	0.2%
1987	27.32	75,525,000	2.2%
1988	27.56	85,520,000	2.4%

The Chemung River was used as a raw water source for 1,910,391,000 gallons of water which was about 53.6% of the total water produced.

The above statistics indicate that the Elmira Water Board used its surface water sources of supply to provide about 56.0% of the total water produced. The Board's well or ground water sources of supply delivered 1,569,135,000 gallons of water into the distribution system for a total of about 44% of the water produced for the year. The table below shows the water production totals from the various ground water sources since the wells were placed in service.

Year	Gal. from Sullivan St.	Gal. from Kentucky Ave.	Gal. from Hudson St.	Percent of Total
1961	264,479,000			9.3%
1962	318,527,000			9.3%
1963	559,578,000			18.7%
1964	953,140,000	10,910,000		29.5%
1965	824,118,000	301,554,000		36.0%
1966	1,014,232,000	185,709,000	179,586,000	36.4%
1967	1,006,424,000	194,221,000	312,627,000	38.0%
1968	943,147,000	5,939,000	398,172,000	33.0%
1969	883,585,000	194,708,000	362,685,000	38.0%
1970	625,739,000	362,618,000	400,902,000	34.3%
1971	509,922,000	350,079,000	381,773,000	30.5%
1972	516,428,000	336,494,000	445,107,000	34.1%
1973	596,060,000	345,095,000	392,490,000	34.0%
1974	609,787,000	302,014,000	367,040,000	34.5%
1975	812,465,000	328,819,000	655,135,000	48.3%
1976	525,005,000	336,435,000	684,351,000	42.3%
1977	950,163,000	323,044,000	590,656,000	51.0%
1978	439,735,000	337,592,000	479,994,000	35.6%
1979	498,410,000	334,561,000	452,446,000	37.0%
1980	1,085,453,000	219,794,000	445,184,000	48.0%
1981	1,042,986,000	10,211,000	484,566,000	42.1%
1982	1,010,960,000	—	482,468,000	45.7%
1983	993,173,000	—	457,601,000	44.7%
1984	1,019,816,000	—	503,379,000	44.3%
1985	1,006,632,000	—	506,122,000	43.6%
1986	1,051,956,000	—	548,640,000	45.7%
1987	1,030,448,000	—	493,637,000	44.2%
1988	1,028,279,000	—	540,856,000	44.0%

The Kentucky Ave. well has been out of service since September of 1980 when small amounts of Trichloroethylene were found in this supply. It was used briefly in 1981 for sample testing purposes. This groundwater Trichloroethylene (TCE) contamination problem continues and has spread to the Board's Sullivan Street well field supply. TCE has been detected in the Sullivan Street well water at average values of

about 8 parts per billion (p.p.b.) The new USEPA Maximum Contaminant Level (MCL) for TCE will be set at 5 p.p.b. effective in January of 1989. This new MCL for TCE will be reduced from 50 p.p.b. to 5 p.p.b. at that time. In view of this serious problem, the Elmira Water Board engaged a Hydrogeological Consulting firm and a test well drilling firm to locate a groundwater source of supply which could be used to replace the Sullivan Street supply. Work on this project began in 1988 and continues at this time.

The new standards set limits for many new volatile organic contaminants (V.O.C.'s) which require complicated analytical lab testing work on a quarterly basis. The Elmira Water Board engaged an Engineering firm to perform the necessary laboratory tests needed to meet the new requirements. They also engaged the same firm to perform an Engineering Study which would address such problems as the local groundwater contamination issue, and the Board's aging filtration system. The cost of this work in 1988 was almost $27,000. Work on the above continues into 1989.

The Elmira Water Board had a total of 47 full time employees on their last payroll in 1988 for a decrease of 1 over the past year.

The employee who retired was Robert Lynch with a 16 year, 4 month term of service. Mr. Lynch was an Automotive Mechanic in the Maintenance Department.

The Board's payroll increased from $1,252,518 in 1987 to $1,259,643 in 1988 for an increase of less than 1%. This relatively low increase was due to the fact that there was one more payroll week in 1987 as compared to 1988.

The Elmira Water Board increased the rate structures in the Town of Elmira and in the Village of Elmira Heights-Horseheads effective July 1, 1988. The rate increases were designed to offset tax increases which were levied in the above political subdivisions on the Elmira Water Board facilities in those areas in 1988. The new rate structures are shown later in this report.

The Elmira Water Board, in accordance with its Charter, furnished water to the City of Elmira and to the Elmira City School District within the City limits without charge. The free water totalled about 44,795,000 gallons of water at an approximate value of $35,600.

Respectfully submitted,

L. EDWARD CONSIDINE, P.E.
General Manager

LEC/cs

ELMIRA WATER BOARD DISTRIBUTION SYSTEM
INORGANIC SAMPLING RESULTS

ELMIRA HEIGHTS PUMP STATION
Sullivan Street Supply

Contaminant	Results	U.S.E.P.A. M.C.L. (mg/l)
Arsenic	ND<0.02 mg/l	0.05
Barium	0.14 mg/l	1.0
Cadmium	ND<0.001 mg/l	0.01
Chromium	ND<0.005 mg/l	0.05
Copper	ND<0.025 mg/l	1.3
Iron	0.08 mg/l	*
Lead	0.016 mg/l	0.05
Manganese	ND<0.025 mg/l	*
Mercury	ND<0.0002 mg/l	0.002
Selenium	ND<0.002 mg/l	0.01
Silver	ND<0.005 mg/l	0.05
Sodium	92	*
Zinc	ND<0.025 mg/l	*
Fluoride	1.03 mg/l	4.0
Alkalinity	328 mg/l	*
Chloride	125 mg/l	*
Color	ND<5	*
Hardness, Ca	196 mg/l	*
pH	7.07	*
Solids, Dissolved	627 mg/l	*
Sulfate	58.0 mg/l	*

Legend
* No Standard established
< Less Than
mg/l - Milligram per Liter
M.C.L. - Maximum Contaminant Level
ND - Non Detected

ELMIRA WATER BOARD DISTRIBUTION SYSTEM
INORGANIC SAMPLING RESULTS

CRESTVIEW PUMP STATION
Hudson Street Supply

Contaminant	Results	U.S.E.P.A. M.C.L. (mg/l)
Arsenic	ND<0.002 mg/l	0.05
Barium	0.16 mg/l	1.0
Cadmium	ND<0.001 mg/l	0.01
Chromium	0.01 mg/l	0.05
Copper	ND<0.025 mg/l	1.3
Iron	0.14 mg/l	*
Lead	0.016 mg/l	0.05
Manganese	ND<0.025 mg/l	*
Mercury	ND<0.0002 mg/l	0.002
Selenium	ND<0.002 mg/l	0.01
Silver	ND<0.005 mg/l	0.05
Sodium	20.3 mg/l	*
Zinc	ND<0.025 mg/l	*
Fluoride	0.23 mg/l	4.0
Alkalinity	146 mg/l	*
Chloride	52.2 mg/l	*
Color	ND<5	*
Hardness, Ca	196 mg/l	*
pH	7.33	*
Solids, Dissolved	301 mg/l	*
Sulfate	44.4 mg/l	*

Legend
- * No Standard established
- < Less Than
- mg/l - Milligram per Liter
- M.C.L. - Maximum Contaminant Level
- ND - Non Detected

ELMIRA WATER BOARD DISTRIBUTION SYSTEM
INORGANIC SAMPLING RESULTS

ELMIRA WATER BOARD OFFICE
Filter Plant Supply

Contaminant	Results	U.S.E.P.A. M.C.L. (mg/l)
Arsenic	ND<0.002 mg/l	0.05
Barium	0.10 mg/l	1.0
Cadmium	ND<0.001 mg/l	0.01
Chromium	ND<0.005 mg/l	0.05
Copper	ND<0.025 mg/l	1.3
Iron	0.16 mg/l	•
Lead	0.015 mg/l	0.05
Manganese	ND<0.025 mg/l	•
Mercury	ND<0.0002 mg/l	0.002
Selenium	ND<0.002 mg/l	0.01
Silver	ND<0.005 mg/l	0.05
Sodium	16	•
Zinc	ND<0.025 mg/l	•
Fluoride	1.18 mg/l	4.0
Alkalinity	104 mg/l	•
Chloride	39.2 mg/l	•
Color	ND<5	•
Hardness, Ca	157 mg/l	•
pH	7.47	•
Solids, Dissolved	262 mg/l	•
Sulfate	55.2 mg/l	•

Legend
- • No Standard established
- < Less Than
- mg/l - Milligram per Liter
- M.C.L. - Maximum Contaminant Level
- ND - Non Detected

ELMIRA WATER BOARD DISTRIBUTION SYSTEM
ORGANIC SAMPLING RESULTS

Contaminant	Location	U.S.E.P.A. M.C.L.
Endrin	ND 0.05 ug/L	0.2 ug/L
Lindane	ND<0.05 ug/L	4.0 ug/L
Methoxychlor	ND<0.25 ug/L	100 ug/L
Toxaphene	ND<1 ug/L	5 ug/L
2, 4 - D	<0.2 ug/L	100 ug/L
2,4,5 - TP Silvex	ND<0.05 ug/L	10 ug/L

Legend:
- ug/L — microgram/Liter
- < — Less Than
- Location: Main office rest room
- M.C.L. - Maximum Contaminant Level
- ND - Non Detected

ELMIRA WATER BOARD

SOURCES OF SUPPLY

The Elmira Water Board water utility system obtains water from three sources. The stored or impounded supply comes from the Hoffman Creek Reservoir. The surface supply is pumped from the Chemung River while the underground or ground water supply comes from several wells.

HOFFMAN CREEK RESERVOIR

The Hoffman Creek Reservoir is located about one mile north of the Filter Plant south of West Hill Road. The tributary water shed filling this reservoir covers about five square miles and goes as far as the Harris Hill Glider Field. The portion of the water shed owned by the Water Board has been reforested and is covered with a fine growth of evergreen trees.

The dam controlling this supply was originally constructed in 1870 and 1871. It is an earth filled dam about sixty feet high with a rip rap face. In 1930 the reservoir was cleaned and enlarged by the construction of a new spillway four feet higher than the old one. Again in 1939 the capacity was increased by excavation of the old canal bank on the east side of the reservoir. The present capacity is about 150,000,000 gallons. An additional unit has been built at the inlet of the reservoir to prevent creek gravel from washing in and decreasing the capacity. The spillway was enlarged and rebuilt in 1948 and 1949.

WELLS

The first well developed for supply purposes is located on Sullivan Street.

In 1958 an investigation was undertaken to locate an underground supply and as a result of this work a three million gallon per day well was drilled on the east side of Sullivan Street south of Thurston Street. The well was drilled in the Spring of 1960 and is ninety-eight feet deep, graveled walled, with a thirty foot shutter screen.

The well was used for a supplementary supply during the summers of 1961 and 1962. Due to the hardness of the supply a contract was let in September 1962 for the construction of a softening plant designed to bring the hardness of the water supply to the average of the rest of the supply produced by the Water Board. The softening plant was completed and went into regular operation in July 1963 and now provides a regular addition to the basic ability to serve of three million gallons per day.

The second well, required to increase basic capacity when the A&P Plant decided to locate in Chemung County was, after extensive testing, located at the north end of Kentucky Avenue in the Town of Horseheads. The well was completed in December 1962 with a capacity of one million gallons per day, pumped directly into the 24" main serving the A&P Plant. A diesel operated generator for emergency service was included in the pumping house equipment. This well is no longer used because the ground water in the area was contaminated by small amounts of Trichloroethylene. The aquifer in the area of the Kentucky Avenue Well was placed on the E.P.A. List for possible Super Fund aid.

Two wells are located on the south side of the Chemung River near West Hudson and South Hoffman Streets. These wells are each capable of producing about one million gallons of water per day and provide the only sources of water on the south side of the river. These wells greatly increase the dependability of the system by making service to the southside much less dependent upon two mains crossing under the Chemung River and the two mains suspended from the Walnut Street and Lake Street Bridges.

An additional three million gallon per day well was constructed at the Sullivan Street Well Site in 1968 which is now alternated with the first well and, in emergency situations could be used with the first well to produce six million gallons per day from that source without softening. The duration of time this site could be used to produce six million gallons of water per day as an emergency source of supply is not known at this time.

CHEMUNG RIVER

Chemung River river water must be pumped from the Chemung River to the Coagulation Basin at the Filtration Plant. The pumps for this purpose are located in the Winsor Avenue Pumping Station at the corner of Winsor Avenue and Hoffman Street.

The Chemung River has a drainage area above our intakes of about 2,050 square miles, and is the main dependable source of supply within the reach of the City of Elmira.

Water flows from the duplicate intake structures located in the river west of Walnut Street Bridge through double lines into the suction wells under the Pumping Station. Then the water is forced through a 24" pumping line to the Coagulation Basin at the Filtration Plant complex.

The first pump was installed in this location in 1883 or 1884. The present Station was erected in 1899. For many years the pumps were driven by steam, but as pumping equipment was improved the old steam plant was replaced by more efficient centrifugal pumps operated by electric power.

At the present time there are three pumping units in the Winsor Avenue Station, one eight million gallon per day unit installed in 1934, one nine million gallon per day unit installed in 1962, and a twelve million gallon per day unit installed in 1942. All units are connected with an automatic priming system. The flood of June 1972 ruined the motors and control equipment on the pumps installed in 1934 and 1942. New motors were installed on the pump units in 1972 and new motor control equipment was installed in the attic the same year. The 1962 pump unit had its motor control equipment in the attic at the time of the flood and escaped the flood water damage.

METER RATES INSIDE THE CITY OF ELMIRA

Effective July 1, 1986

First	1,200 cu. ft.	($16.08 Minimum)	$ 1.34 per 100 cu. ft.
Next	3,800 cu. ft.		1.12 per 100 cu. ft.
Next	20,000 cu. ft.		.80 per 100 cu. ft.
Next	1,200,000 cu. ft.		.46 per 100 cu. ft.
Over	1,225,000 cu. ft.		.27 per 100 cu. ft.

PRIVATE FIRE PROTECTION

With 3″ service	$ 7.00 per quarter
With 4″ service	12.00 per quarter
With 6″ service	17.00 per quarter
With 8″ service	22.00 per quarter
With 10″ service	27.00 per quarter

METER RATES OUTSIDE THE CITY OF ELMIRA
TOWN OF SOUTHPORT

Effective July 1, 1986

First	1,200 cu. ft.	($24.24 Minimum)	$ 2.02 per 100 cu. ft.
Next	3,800 cu. ft.		1.81 per 100 cu. ft.
Next	20,000 cu. ft.		1.24 per 100 cu. ft.
Next	1,200,000 cu. ft.		.65 per 100 cu. ft.
Over	1,225,000 cu. ft.		.31 per 100 cu. ft.

PRIVATE FIRE PROTECTION

With 3″ service	$ 8.00 per quarter
With 4″ service	14.00 per quarter
With 6″ service	20.00 per quarter
With 8″ service	26.00 per quarter
With 10″ service	32.00 per quarter

METER RATES OUTSIDE THE CITY OF ELMIRA
VILLAGE OF ELMIRA HEIGHTS - TOWN OF HORSEHEADS

Effective June 1, 1988

First	1,200 cu. ft.	($24.48 Minimum)	$ 2.04 per 100 cu. ft.
Next	3,800 cu. ft.		1.83 per 100 cu. ft.
Next	20,000 cu. ft.		1.25 per 100 cu. ft.
Next	1,200,000 cu. ft.		.66 per 100 cu. ft.
Over	1,225,000 cu. ft.		.31 per 100 cu. ft.

METER RATES OUTSIDE THE CITY OF ELMIRA
TOWN OF ELMIRA

Effective June 1, 1988

First	1,200 cu. ft.	($26.16 Minimum)	$ 2.18 per 100 cu. ft.
Next	3,800 cu. ft.		1.95 per 100 cu. ft.
Next	20,000 cu. ft.		1.34 per 100 cu. ft.
Next	1,200,000 cu. ft.		.70 per 100 cu. ft.
Over	1,225,000 cu. ft.		.33 per 100 cu. ft.

PRIVATE FIRE PROTECTION

With 3″ service	$ 8.00 per quarter
With 4″ service	14.00 per quarter
With 6″ service	20.00 per quarter
With 8″ service	26.00 per quarter
With 10″ service	32.00 per quarter

A laboratory fee of $25.00 per month will be charged to all customers having interconnections and private chlorination systems, necessitating sampling and inspection by the Elmira Water Board.

Bills will be rendered monthly where consumption exceeds 60,000 cu. ft. per quarter or 20,000 cu. ft. per month. All other bills are rendered quarterly. Private fire protection bills will be rendered quarterly. Ten percent discount will be allowed on all regular monthly and quarterly bills paid within the specified discount period. Private fire protection bills will be rendered in the net amount.

All bills are sent in the owner's name, and in purchasing property, be sure there are no outstanding bills. Failure of owner or customer to receive bills does not relieve him of responsibility for payment. Property owners must keep meter easily accessible for reading at all times. Water Board reserves the right at all times to shut off water temporarily without notice, for repairs, extensions or other work necessary in connection with the system, and for non-payment of bills. Where service is shut off for non-payment, a charge of $20.00 inside the city, or $25.00 outside the city will be made to cover costs of disconnecting and reconnecting service.

ELMIRA WATER SYSTEM

BRIEF HISTORY

INVESTOR OPERATION:

ELMIRA WATER COMPANY

April 14, 1859	Chartered
July 5, 1860	System Started
Dec. 11, 1860	System Completed
1861	First U.S. Water System Aerator Installed

ELMIRA WATER WORKS COMPANY

April 29, 1869	Chartered — General A. S. Diven, President
August 1872	Hoffman Creek Reservoir Constructed
1889	Chemung River Pumping Station

ELMIRA MUNICIPAL IMPROVEMENT COMPANY

1892	Purchased System
1896	Filter Plant Constructed
Jan. 19, 1897	In Operation

ELMIRA WATER LIGHT & RAILROAD COMPANY

Nov. 1904	Formed
	Included Water System — William Cole, Gen'l Mgr.
1909	Chlorination of Water Supply Started
1911	High Service Reservoir Constructed
	24″ line from Pump Station on Chemung River to Filter Plant
	Capital Improvements $500,000.00

PUBLIC OPERATION:

ELMIRA WATER BOARD

1913	Established
	Commissioners — Mr. Clay Holmes, President
	Archie Bovier, Henry Haase
	Thomas Milan, Cassius Phillips
	Gen'l Mgr. Harry M. Beardsley
	Secretary John J. McNevin
	Purchased System for $1,500,000.00
May 15, 1915	Started Operation
	Miles of Main 100.8
	Services 8,782
	Meters 4,441
1917	System 100% Metered

1924	Board cancelled $19,000.00 Annual Charge to City for fire protection and water for public purposes
1928	Shop Building on Winsor Avenue
1930	Hoffman Creek Reservoir Enlarged
1931	Southside Reservoir Constructed Aerators installed on Hi-Service Reservoir
1932	Purchased Chase-Hibbard Dam
1934	New Mains — 5,386 ft.
1937	2100 ft. 24″ and 30″ main for new Basin New Spillway on Hoffman Creek Reservoir
1938	Coagulation Basin Constructed
1942	New Services — 186
1943	Started Annual Report New Mains — 15,015 ft. New Services — 435 Total Capital Expenditure — $56,812.32
1944	New Mains — 4,384 ft. New Services — 43 Addition to Hoffman Creek Reservoir Spillway Total Capital Expenditure — $42,783.46
1945	New Mains — 5,483 ft. New Services — 58 Final Bond Payment — $60,000.00 Total Capital Expenditure — $37,192.81 In thirty years bond payments of $1,500,000.00 were paid off — plus interest of $1,227,049.55
1946	New Mains — 16,334 ft. New Services — 254 Program started replacing obsolete hydrants Rewired Pump Station — Replaced Pump and Motor, because of flood damage Total Capital Expenditure — $93,853.40
1947	New Mains — 14,698 ft. Re-roofed Filtration Plant Replaced Three Filters Prepared complete system records Total Capital Expenditure — $276,965.54

1948
New Mains — 17,672 ft.
New Services — 236
Cement Lined 24″ Main from River to Filter Plant
Reconstructed Hoffman Creek Spillway
Rebuilt Chlorine Room and Equipment
Total Capital Expenditure — $207,568.25

1949
New Mains — 15,400 ft.
New Services — 218
Filter Plant Flume Replaced
Radio Control of Emergency Trucks
Total Capital Expenditure — $193,534.83

1950
New Mains — 10,454 ft.
New Services — 182
West Elmira Reservoir Constructed
New Maintenance Shop Constructed
Total Capital Expenditure — $171,192.13

1951
New Mains — 13,652 ft.
New Services — 252
Self-propelled Backhoe Purchased
City Paving Program — $14,983.85
Total Capital Expenditure — $137,350.22

1952
New Mains — 15,607 ft.
New Services — 245
Repaired 20″ main under Chemung River
Cleaned 30″main from Hi-service Reservoir
Interconnection made with Horseheads Supply
City Paving Program — $21,855.48
New 15 MGD Pump at Filter Plant
Total Capital Expenditure — $141,888.91

1953
West Elmira Balancing Reservoir Constructed
Hi-level Pumping Station
Chemical Storage Building
New Mains — 22,880 ft.
New Services — 292
Renewed Services — 149
City Paving Program — $51,525.38
Fluoridation Equipment Installed
Total Capital Expenditure — $247,110.52

1954
New Mains — 29,503 ft.
New Services - 386
Renewed Services — 149
Additional Pump Hi-level District
City Paving Program — $28,800.50
Total Capital Expenditures — $260,466.02

1955 Eastside Balancing Reservoir Constructed
New Mains — 20,592 ft.
New Services — 214
Renewed Services — 220
Total Capital Expenditures — $273,093.23

1956 New Mains — 22,155 ft.
New Services — 273
Renewed Services — 216
Large Mains on Hoffman Street Cleaned
Additional Section Hoffman Creek Reservoir Spillway
Cleaned Gravel Basin Hoffman Creek Reservoir
City Paving Program — $35,556.80
Total Capital Expenditures — $404,196.62

1957 New Mains — 7,537 ft.
New Services — 220
Renewed Services — 212
State Highway Relocations — $75,869.00
City Paving Program — $32,437.00
Total Capital Expenditures — $141,944.36

1958 New Mains — 13,914 ft.
New Services — 136
Renewed Services — 506
City Paving Program — $61,208.65
Addition made on Maintenance Shop
Engineering and Investigation for Well Supply
Total Capital Expenditures — $240,458.34

1959 Reconstruction for Office at 261 W. Water St.
City Paving Program — $65,020.47
New Mains — 7,441 ft.
New Services — 131
Renewed Services — 352
Total Capital Expenditures — $232,319.63

1960 New 16″ Main across Lake Street Bridge
City Paving Program — $131,433.96
New Mains — 9,178 ft.
New Services — 161
Renewed Services — 458
Installed Sullivan Street Well
Total Capital Expenditures — $196,633.34

1961 New 3 MGD Well on Sullivan Street
New Mains — 9,723 ft.
New Services — 118
Renewed Services — 429
City Paving Program — $117,257.52
Placed Sullivan Street Well in Service
Renewed Section of Chase-Hibbard Dam
Total Capital Expenditures — $$400,510.82

1962
New Mains — 6,510 ft.
Replaced Mains — 5,430 ft.
New Services — 40
Renewed Services — 286
New Pump and Motor at Pump Station
Paving Program — $29,937.00
Total Capital Expenditures — $233,041.10

1963
New Treatment Plant Constructed on Sullivan St.
Installed 24" Main to new A&P Plant
Started Caird Reservoir
Started new Well Construction
New Mains — 7,630 ft.
Replaced Mains — 1,902 ft.
New Services — 72
Replaced Services — 200
City Paving Program — $15,529.88
Total Capital Expenditures — $482,122.02

1964
Caird Reservoir — 2 Million Gals. — Completed
Kentucky Avenue Well — 1 MGD — Completed
Paving Program Rehabilitation Costs — $82,097.75
New Mains — 32,124 ft.
Replaced Mains — 2,816 ft.
New Services — 87
Replaced Services — 490
Total Capital Expenditures — $975,546.29

1965
Cleaned and Cement Lined:
1,506 ft. of 30" Main
6,417 ft. of 20" Main
3,667 ft. of 16" Main
1,278 ft. of 12" Main
Drilled Production Well #3 at W. Hudson and S. Hoffman St.
City Paving Program — $127,000.00
New Mains — 10,892 ft.
Replaced Mains — 1,830 ft.
New Services — 188
Replaced Services — 424
Total Capital Expenditures — $419,447.43

1966
Cleaned and Cement Lined 2,100 feet of 20" Main
Built Treatment Building and Placed in Service Hudson St. Well #1, Cost $139,000, in Service
Deerfield Rd. Booster Station, Cost $20,000,00
City Paving Program — $165,000.00
New Mains — 2,198 ft.
Replaced Mains — 7,211 ft.
New Services — 80
Replaced Services — 615
Total Capital Expenditures — $420,803.00

1967
Cleaned and Cement Lined 4,831 feet of 20" Main
Paving Program — Rehabilitation Costs $217,917.00
New Mains — 1,334 feet
Replaced Mains — 3,116 feet
New Services — 40
Renewed Services — 457
Total Capital Expenditures — $305,358.12

1968
Started second well on Sullivan Street
Paving Program Rehabilitation Costs $190,401.72
New Mains — 7,016 ft.
Replaced Mains — 2,088 ft.
New Hydrants — 9
New Services — 40
Renewed Services — 433
Total Capital Expenditures — $355,012.72

1969
Completed second well on Sullivan Street
Paving Program Rehabilitation Costs $96,765.87
New Mains — 6,206 ft.
Replaced Mains — 4,495 ft.
New Hydrants — 15
1946 Program of replacing obsolete hydrants completed
New Services — 84
Renewed Services — 436
Total Capital Expenditures — $369,301.00

1970
Paving Program Rehabilitation Cost $157,669.91
New Mains — 6,473 ft.
Replaced Mains — 3,794 ft.
New Hydrants — 13
New Services — 74
Renewed Services — 269
Total Capital Expenditures — $374,419.00

1971
Paving Program Rehabilitation Cost $136,487.15
New Mains — 1872
Replaced Mains — 1772
New Hydrants — 2
New Services — 18
Renewed Services — 301
Hudson Street Well #2 Drilled

1972
Paving Program Rehabilitation and Urban Renewal Project Area Cost — $120,217.41
New Water Mains — 4,990 ft.
Replaced Water Mains — 5,600 ft.
New Hydrants — 12
New Services — 93

Renewed Services — 141
Hoffman Creek Spillway Repairs after Flood — $32,604.34
Remodel Winsor Avenue Pump Station:
New 400 H.P. Motor and Control Equipment for Pump #3 — $23,058.00
New 300 H.P. Pump, Motor and Control Equipment to replace old Pump unit #1—$41,000.00
Hudson Street Well #2 Placed in Service — $82,286.00
Other Furnishings and Furniture Returned to Pre-Flood Condition — $49,127.24

1973
Paving Program Rehabilitation Cost — $166,307.79
New Water Mains — 9,461 ft.
Replaced Water Mains — 8,405 ft.
New Hydrants — 21
New Services — 26
Renewed Services — 261
Total Capital Expenditures — $426,722.00

1974
Paving Program Rehabilitation Cost — $201,708.22
New Water Mains — 5,172 feet
Replaced Water Mains — 2,310 feet
New Hydrants — 11
New Services — 25
Renewed Services — 269
Hudson Street Well #1A — $65,780.00
Total Capital Expenditures — $315,261.00

1975
Paving Program Rehabilitation Cost — $149,974.75
New Water Mains — 4,776 feet
Replaced Water Mains — 4,181 feet
New Hydrants — 11
New Services — 61
Renewed Services — 219
Total Capital Expenditures — $281,656.00

1976
Paving Program Rehabilitation Cost — $98,976.53
Clean and Line 8,065′ of 6″ and 8″ Water Main — $87,410.03
New Roof at Filter Plant — $18,325.50
New Water Mains — 8,458 feet
Replaced Water Mains — 5,915 feet
New Hydrants — 15
New Services — 122
Renewed Services — 171
Total Capital Expenditures — $484,290.00

1977
Paving Program Rehabilitation Cost — $146,158.45
Repair of 16" Main in Chemung River — $34,687.23
New Water Mains — 8,354 feet
Replaced Water Mains — 6,362 feet
New Hydrants — 13
New Services — 49
Renewed Services — 171
Total Capital Expenditures — $364,785.00

1978
Paving Program Rehabilitation Cost — $212,215.12
Motor Replacement - Sullivan St. Well — $13,555.29
Redevelop two (2) Wells - Hudson St. — $8,346.55
Chase-Hibbard Dam Repair Work — $28,124.60
New Water Mains — 3,928 feet
Replaced Water Mains — 3,317 feet
New Hydrants — 10
New Services — 67
Renewed Services — 100
Total Capital Expenditures — $362,098.00

1979
Paving Program Rehabilitation Cost — $155,278.14
New Water Mains — 3,394 feet
Replaced Water Mains — 2,932 feet
New Hydrants — 2
New Services — 34
Renewed Services — 124
Total Capital Expenditures — $323,056.00

1980
Paving Program Rehabilitation Cost — $37,371.14
New Water Mains — 2,108 feet
Replaced Water Mains — 832 feet
New Hydrants — 1
New Services — 29
Renewed Services — 102
Total Capital Expenditures — $287,875.00

1981
Paving Program Rehabilitation Cost — $38,011.03
New Water Mains — 1,981 feet
Replaced Water Mains — 1,125 feet
New Hydrants — 1
New Services — 36
Renewed Services — 110
Total Capital Expenditures — $234,229.00

1982
Paving Program Rehabilitation Cost — $64,881.40
New Fluoridation Equipment — $12,615.78
New Roof at Maintenance Shop — $22,631.50
New Water Mains — None
Retired Water Mains — 667 feet

New Hydrants — 1
New Services — 18
Renewed Services — 130
Total Capital Expenditures — $201,059.00

1983
Paving Program Rehabilitation Cost — $78,884.00
Tractor-Shovel — $25,000.00
New Water Mains — 305 feet
Replaced Water Mains — None
New Hydrants — 1
New Services — 25
Renewed Services — 101
Total Capital Expenditures — $163,080.00

1984
Paving Program Rehabilitation Cost — $25,187.00
Hydra-hammer — $34,629.00
New Vehicles — $33,141.00
New Water Mains — 856 feet
New Hydrants — 1
New Services — 35
Renewed Services — 100
Total Capital Expenditures — $281,492.00

1985
Paving Program Rehabilitation Cost — $91,899.00
New Vehicles — $13,396.00
New Water Mains — 1,604 feet
New Services — 37
Renewed Services — 107
Total Capital Expenditures — $233,457.00

1986
Paving Program Rehabilitation Cost — $14,845.00
New Vehicles — $8,180.00
New Water Mains — 2,085 feet
New Services — 41
Renewed Services — 79
Total Capital Expenditures — $304,285.00

1987
Paving Program Rehabilitation Cost — $28,967.00
New Vehicles — $44,326.00
New Water Mains — 1,410 feet
New Services — 30
Renewed Services — 111
Total Capital Expenditures — $272,429.00

1988
Paving Program Rehabilitation Cost — $62,849.00
New Vehicles — $60,219.00
New Water Mains — 3,340 feet
New Services — 39
Renewed Services — 151
Total Capital Expenditures — $453,781.00

TABLE SHOWING AVERAGE WATER TEMPERATURE AT FILTER PLANT IN DEGREES FAHRENHEIT

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1941-60 (20 Yr. Avg.)	35	35	37	44	56	67	73	72	67	56	44	38
1961-65 (5 Yr. Avg.)	35	36	38	45	58	67	73	71	67	56	46	38
1966	36	37	41	47	53	67	77	71	65	54	46	39
1967	40	36	39	46	50	70	70	71	66	56	45	44
1968	36	36	39	51	55	61	71	73	68	58	46	38
1969	34	37	41	45	54	63	70	70	65	54	42	38
1970	35	34	36	45	58	69	73	76	68	59	47	38
1971	34	34	36	41	50	68	72	70	68	61	46	37
1972	35	34	36	40	53	61	66	69	66	52	42	38
1973	36	34	40	48	52	64	71	73	69	63	46	39
1974	36	36	39	45	57	68	73	73	65	53	46	38
1975	37	36	39	44	56	67	73	72	64	58	47	36
1976	36	40	42	45	56	66	70	71	66	53	40	36
1977	34	32	40	50	50	68	74	78	69	52	46	36
1978	33	33	34	44	54	66	71	73	66	54	45	34
1979	32	32	38	47	56	67	75	75	70	60	53	41
1980	35	34	35	38	49	57	63	66	68	53	39	36
1981	32	34	37	50	56	67	72	71	63	50	38	32
1982	32	36	39	46	61	61	70	67	65	58	45	41
1983	37	36	38	42	50	66	75	75	68	58	46	36
1984	32	35	35	44	52	64	67	71	65	57	45	38
1985	34	34	39	50	62	66	71	71	67	56	45	36
1986	33	32	35	44	61	68	75	74	67	60	47	41
1987	39	40	44	53	64	75	77	74	66	55	46	40
1988	36	37	41	50	59	70	74	77	67	55	47	37

Sullivan Street Well ..... 52-54° F
Hudson Street Well ..... 50-54° F

SUMMARY OF STATISTICS — 1988 Form Recommended by A.A.W.A.

General Statistics

Elmira Water Supply, Managed by Elmira Water Board
City of Elmira, Chemung County, New York State (Owner)
Also serves Elmira Heights and areas in Towns of Elmira, Horseheads and Southport

Population

Census 1980 City of Elmira — 35,327
Estimated population served in 1980 — 62,660

Source of Supply

Chemung River — Hoffman Creek — Sullivan Street Well
Hudson Street Well

Pumping Statistics

Pump Station
No. 1 Allis Chalmers Pump with 300 HP General Electric Motor — Electric
No. 2 DeLavel Pump with 300 HP Electric Machinery Motor — Electric
No. 3 Gould Pump with 400 HP General Electric Motor — Electric
Filter Plant
No. 1 DeLavel Pump with 350 HP General Electric Motor — Electric
No. 2 Morris Machine Works 400 HP Elliott Motor — Electric
Sullivan Street
No. 1 Layne Pump with 200 HP U.S. Motor — Electric
No. 2 Byron Jackson Submersible 200 HP Motor — Electric
Hudson Street
No. 1-A Layne-Bowler Submersible 75 HP Motor — Electric
No. 2 Layne-Bowler Submersible 75 HP Motor — Electric (Standby diesel power)

Total Water Pumped in 1988

Winsor Ave. Pump Station	1,910,391,000 gallons
High Service Pumps	85,520,000 gallons
Sullivan Street Well Pumps	1,028,279,000 gallons
Hudson Street Well Pumps	540,856,000 gallons

Maximum Dynamic Head Against Which Pump Works

Winsor Avenue Pump Station	201 feet
High Service Pumps	130 feet
Sullivan Street Well Pumps	310 feet
Hudson Street Well Pumps	235 feet

Statistics of Consumption of Water 1988

Estimated population served	62,660
Total Consumption for year (gallons)	3,565,046,000
Average daily consumption (gallons)	9,767,000
Gallons per day per capita	156
Gallons per day per meter in service	545

Statistics Relating to Distribution System

Mains

1. Kinds of pipe — Cast iron, wrought iron, copper, asbestos-cement, prestressed concrete, plastic and ductile iron		
2. Sizes		1″ to 30″
3. Extended during year		–689 feet
4. Discontinued		–4,029 feet
5. Total now in use		1,136,810 feet or 215.30 miles
6. Length of pipe under 4″ in diameter		78,605 feet or 14.89 miles
7. Number of hydrants added during year		1
8. Total hydrants now installed	City of Elmira	771
	Township	425
	Total	1,196
9. Number of services gained during year		37
10. Number of services total		18,645
11. Number of meters decreased during year		–159
12. Number of meters total in service		17,924
13. Size of meters		⅝″-16″
14. Percentage of services metered		100%