MIDDLETOWN CONSOLIDATION STUDY COMMITTEE

REPORT ON THE WATER SYSTEM AND THE SEWAGE DISPOSAL PLANT OF MIDDLETOWN, CONNECTICUT

JUNE, 1946

John S. Roth, Chairman)
)
Mrs. Richard G. Clarke) Members of
)
Robert I. Laggren) Sub-Committee
)
Robert W. Rice)

Dr. G. Albert Hill, Chairman
Middletown Consolidation
Study Committee
Middletown, Connecticut

Sir:

The committee which you appointed to "compile information regarding the water system and the sewage disposal plant of Middletown" presents its report herewith. The committee undertook to consider the problem of city ownership as compared with that of district ownership of the Middletown Water Works and the Sewage Disposal Plant. This committee consisted of Mrs. Richard G. Clarke, Messrs. Robert W. Rice, Robert I. Laggren, Clifford Wadsworth and John S. Roth, Chairman. Mr. Wadsworth has been unable to take part in any of the committee's work because shortly after his appointment he was transferred by his employer to another city.

It is not our intention to present the basic details upon which our conclusions are predicated, but such details are available in our working papers. It is assumed that any person interested in the contents of the report will have a basic knowledge of the fundamental facts and the purpose for which this survey was intended.

The report will be submitted in two parts; namely, the Historical and the Financial Sections. The conclusions will be based upon all considered factors.

As the Chairman, it pleases me to tell you that we received splendid cooperation from Mayor Cubeta and the members of the city staff. Especially are we indebted to Mr. Samuel C. Cannon, Superintendent of the Department of Public Works (Water Division) for his willingness in supplying us with data. I am also pleased to thank those members of this committee who have taken part in the undertaking.

Respectfully submitted,

John S. Roth

Mrs. Richard G. Clarke

Robert I. Laggren

Robert W. Rice

PART I - HISTORICAL SECTION

TABLE OF CONTENTS

Building of Laurel Brook Reservoir

On January 1, 1866, the contract for the building of Laurel Brook Reservoir, Middletown's first Water Works, was given out. One year later, on January 1, 1867, the new system was tested for efficiency and it was demonstrated that a single hydrant was capable of doing more effective service in one hour's time than six ordinary fire engines, throwing water in Main Street by force of gravitation 110 feet in height.

The Water Commissioners, in making their report of the project, pointed out that the system would supercede all cisterns and wells for public and private use, would supply all steam boilers, baths, hotels, stables, watering of streets, public and private fountains, etc. They concluded: "We now bid every citizen who choses (sic) to welcome the water into their own dwellings." And they predicted that the system could supply the city with water until the population had increased three-fold.

In that first year 75 services, public and private, were installed. Eight years later, in 1874, 1036 families were using the facilities.

Adequacy of Supply

The annual report of the Board of Water Commissioners, covering the year 1874, commented: "There has been some complaint during the summer, from parties living on the highest points of Cross Street, that they could not draw water at certain times in the day. The difficulty seems to be that the main pipes are not large enough to supply and retain the pressure at such times when the public are using water freely for sprinkling streets, together with all other purposes."

The report for the next year, 1875, pointed out: "The main pipe from the Reservoir (12-inch) is too small to supply all the uses for which the water is in demand. On the heights above High Street it cannot be depended on for use, and in case of fire in that locality, it could not at all times be depended on to supply the fire engines."

The Mayor's message for the year 1878 reported: "The 12-inch main laid to supply the city seems to have failed to comply with the present demands in the higher elevations. This was stated at two public meetings held to consider the expediency of laying a 16-inch main. The first meeting voted two to one to lay a 16-inch main; the second, by a vote of more than two to one, not to lay a new main, and there the matter rests."

Two years later the Commissioners' report for 1880 said: "The same complaint has been made during the past year, as heretofore, by residents in the upper part of the city, who depend upon the city water, that when there is a large general use of water their supply wholly fails. These persons pay the regular water rents, which should at least entitle them to a constant supply for domestic purposes. The problem....has been almost constantly before the Water Commissioners for several years."

Early in 1881, the Mayor appointed a committee of six to investigate the whole problem of supply to the high parts of the city. Three of the committee recommended that a new water main be laid from Laurel Brook reservoir to increase the supply and pressure. The other three members filed a separate report, taking issue with that recommendation. They said: "We take the bold ground that <u>there is an extravagant</u>

waste of water throughout the city." They pointed out that the rate of consumption was 400% in excess of the rate in cities where the meter system was in use, and that "we do recommend you to defer all other plans until the meter system be effectively tried."

Their recommendation was not followed, however, but a new main was laid in that year, and the Mayor's report for 1881 comments: "Of course it is well-known to all citizens that a debt of $19,000 has been contracted this year, in the laying of a new water main, the propriety and wisdom of which expenditure remain to be demonstrated." However, the Board of Water Commissioners reported that same year: "At the very highest elevations of the City...an uninterrupted supply of water is obtained at all hours of the day... That the new main has resulted in a decided improvement of pressure...seems to be a well attested fact."

The question of use of meters continued to come up from time to time, however, but a meter system was not installed throughout the city until 35 years later in 1916.

All through the history of the water system, not a year passed that water mains were not extended to other streets, and a steady growth not only of coverage of the system, but also of population of the city meant that 25 years after the installation of the Water Works it had become totally inadequate.

In 1891 a dry season in May and June so reduced pressure in the elevated parts of the city that water again could not be obtained for domestic uses. It was pointed out by the Water Commissioners that the present system of pipes could not supply a sufficient quantity of water

for sprinkling, manufacturing, and domestic uses at the same time. The use of hose for sprinkling between 7 a.m. and 6 p.m. was prohibited, but the Commissioners suggested that our present resources could be made adequate for present demands if unnecessary waste were to be curtailed by the use of meters.

Construction of Higby Reservoir

In 1892 they reported that it would not be safe to defer action towards securing another source of supply, and they submitted a recommendation, based on a survey and report of the City Engineer, for construction of the Higby Mountain Reservoir, which would then provide the city with two distinct and independent systems and more than triple the supply. Other locations had been considered, such as Great Hill Pond in Portland and Reed's Gap in Durham and Middlefield, but the Higby watershed was regarded as a far more desirable location than any other within the radius of the city.

The following year, in 1893, the recommendation of the Board of Water Commissioners and of the Common Council for the construction of the additional system was decided adversely by a city meeting, and the Commissioners prepared to use water from Pameacha Pond and the river in case of emergency.

In the next few years the supply continued to be low, until finally at a city meeting held in December, 1896, a resolution was adopted "to provide an additional water supply for the city....as heretofore recommended by said Board of Water Commissioners....at a cost not to exceed the sum of $215,000." In the balloting 664 were for the resolution and 230 against it.

Higby Mountain Reservoir was begun early in April, 1897, and was completed in November at a cost of $197,000, almost $18,000 less than the appropriation.

Two years later in 1899 the Commissioners reported: "The citizens have congratulated each other upon having an abundant supply of pure water during a season when all of the neighboring cities were suffering from a water famine, and also upon the fact that the city was induced to make provision for an additional supply of water at the right time... It is ascertained that the additional cost of construction would be not less than $50,000, if we now had to build Higby Mountain Ststem at the present market prices for labor and materials."

Use of Meters

However, the new system seems not to have fully answered the needs of the city, as the report for the next year, 1900, urges the gradual introduction of meters to correct the waste of water and leave a safe margin of supply. Then in 1905 a summer drought necessitated the printing of posters urging the consumer to be as economical as possible. And in 1909 the building of an additional storage reservoir north of Higby Mountain, in Adder Meadow, was recommended.

Finally in 1914, the firm of Metcalf and Eddy, Consulting Engineers, of Boston, was called in to survey the entire water system. Their recommendations included:

A. Additional Supply of Water.

1. That you have approximate surveys of Adder Swamp Meadow made at once when the work can be done at small cost.

2. That no further steps be taken towards obtaining an additional supply of water at the present time.

B. Conservation of Present Water Supply.

1. That an immediate house-to-house inspection of water services be made for the purpose of detecting and eliminating leaks.

2. That as soon as warmer weather comes the systematic work of waste detection and elimination be undertaken during the night hours by shutting off small sections of the city and determining by means of a meter the amount of water used in each section, and the location of leaks upon services or main pipes.

3. The installation of Venturi meters on the main supply pipes in order that accurate knowledge of the total consumption of water may be available.

4. That you adopt the policy of selling all water by meter, as far as possible, and that meters be installed upon services as fast as may be practicable so that the entire system may be metered in a period not exceeding five years.

The recommendations were partially acted upon at once, and from June to August 2,500 services were inspected.

In the annual report for 1915 the Commissioners asked that the City appropriate $4,400 for the coming year to enable the department to install and repair meters in certain sections.

The Mayor's message for the next year, 1916, reports: "This year began the long-awaited installation of the meters on all services and an appropriation had been made to take care of all of those east of Main Street. When the bills went out on November First the complaints were so numerous that one part of the city was being shown partiality, the Council voted to order the entire city metered as soon as possible, and the Water Department accordingly made a contract for the required number of meters."

The Mayor's message for 1917 reviewed what happened when the Commissioners undertook to install meters in the whole of the City: "Too much praise cannot be extended to the four members of the Water

Board... With the press and a great number of the public working against them, they pushed to completion the installation of meters throughout the city about August the first. Certainly no water board ever took the abuse these four men received, and they deserve the greatest credit for carrying the meter proposition right through to a finish. The November bills showed that 80% of the services were costing less than on the old flat rate, thereby justifying their entire action in the matter... It has postponed an expenditure of several hundred thousand dollars for a great many years, the cost of constructing an additional reservoir."

In 1919 it was reported: "The almost total absence of complaints during the collection periods clearly indicates that the public is satisfied and pleased with the meter system which has now been in successful operation for nearly three years."

Financial Aspects

The financial aspects of the water system are interesting since the department was self-supporting from the first, and in fact made money for the City.

Both Laurel Brook and Higby systems were financed by the issuance of bonds. The total cost of Laurel Brook in 1866 was $173,698.70, paid by an issue of bonds worth $177,000 at 6%. The cost of Higby Mountain was $197,436.87 in 1897 and bonds amounting to $200,000 at 4% were issued.

In 1866 the report of the first year's operation estimated receipts at $3,000. In 1874 over $13,000 was received from water rents, in 1896 over $30,000, in 1909 almost $46,000 and in 1923 over $52,000, which indicate the steady increase in use of water.

Surplus funds of the department, after payment of expenses and interest on bonds and loans, increased regularly. In 1877 the surplus amounted to $817, in 1878 to $1,905, in 1879 to $2,345, in 1882 to $4,329, and in 1902 to $12,290. In 1886, consequently, a sinking fund was established from the surplus to meet the payment of bonds as they came due.

In 1889, three years after the start of the sinking fund, it amounted to $15,904.30. In 1896, ten years after its start, when $64,000 worth of bonds were due, the sinking fund contained $70,095.87. In 1915, when another large portion of the issue was due, $55,000, the sinking fund contained $173,100.63. And in 1922 when the final issue of bonds, $200,000, came due and were retired the fund amounted to $201,411.67.

Extension of Mains

Before consolidation, the extension of water mains outside the city limits was encouraged as a source of revenue for the department. In 1919, however, a request for mains in a new section of South Farms, was turned down since "the Water Board made a careful study of the question with the result that the committee reported that although as private citizens they would like to aid....in any way that they could, as officials of the city they felt in duty bound to deny the request for the installation at city expense, as a permanent loss would result annually to the city." The Mayor commented that "This in my mind is a striking example of how dual form of government works as a detriment to the expansion of Middletown and furnishes a good argument for the consolidation of town and city."

After consolidation, all extensions of water service to the second district were paid for by an assessment on the property owners who were benefitted.

The Newfield Street water main is the most recent instance of such an extension of service, and is therefore of interest.

It first came up in 1938 when a petition for and a petition against a proposed water main extension resulted in a public hearing in May. Nine people attending the hearing were for, and twenty-seven were opposed.

Those in favor argued that health required extension of city water, since a private system in use by some of the residents was potentially dangerous to the community as s source of communicable disease. The Board of Health agreed with this stand. It was also pointed out that reduction in the insurance rate would be appreciable.

Of those opposed, some already had city water, some a private supply. Opposition arose mainly because of the size of the assessment, estimated at $1.00 per running foot. To the argument that city health required the water main, it was asserted that more than 30 people had lived to be over 80 years old on Newfield Street.

In August of that year, another petition for extension was received and a hearing was held by the Board of Public Works, since it had been ascertained that the City could install the main and fire hydrants with assistance from the W. P. A. at a cost of $.50 per running foot, thus cutting the assessment in half. The Board felt that the project should go through, under the circumstances, but at the hearing 28 were opposed and only 4 were in favor.

In January, 1939, a third hearing was held, in response to a petition signed by 22 in favor of the main, but a counter petition was signed by 34.

Again in March, 1943, a petition requested the extension, but was denied for the duration of the war, due to priorities.

In November, 1945, the matter once more arose. A petition signed by 35 citizens covered the following points:

1. No city water is now availabe at the north end of Newfield Street.
2. No help can be expected from the Public Utilities Commission of Connecticut as it is not considered that the Newfield water system is a public utility.
3. Water furnished by the private system up till now in use, has been declared unfit for human consumption by the Health Officer.
4. Residents who dug wells of their own found the water to be hard, brackish and unusable for domestic purposes.
5. City water is needed for fire protection as there is no hydrant north of Westfield Street.

Seventeen property owners recorded their objection to the petition and signified their intention of appearing against it at the hearing which was held on December 27. Their opposition centered on the cost of the assessment, which would amount to $1.50 per foot of frontage.

Following the hearing a compromise was reached, whereby the city paid half of the assessment until such time as the property owners should tap into the main, when they would be required to pay the full amount.

Purity of Water

One particular phase of the water supply offered a problem to which a satisfactory solution was long in being found: the matter of color, taste and odor of the water.

Annual reports from the beginning through the years referred to the "repulsive appearance and taste" of the water. It was early noted that minute water plants were the cause of its disagreeable state, but in 1881 it was reported that "the protection of our water supply from pollution is amply secured by statutes which are strictly enforced by the Board of Water Commissioners. Parties are allowed to visit the reservoir for the purpose of fishing, only two days in each week."

In 1883, 1884, 1885, again in 1895, 1897, and 1900 Wesleyan University faculty members of the Science departments were employed to examine the water. They found that the water plants were not in themselves harmful, but they feared the result of subsequent decay. One of them commented, "What I have found in the water has not prevented my using it as before."

Every year the reservoirs were cleaned out, plants raked from the bottom and swampy sections drained in an effort to keep down the growth.

Finally in 1904, correspondence was entered into with the U. S. Department of Agriculture concerning their experiments in the use of copper sulfate to remove the pest from water supplies. The Board, though interested in such treatments which were then coming into wide use, "did not deem it prudent to recommend an experiment."

During July, 1905, experiments were made with water in glass jars using copper sulfate in different quantities. The Board reported, "although a microscopic examination...showed the water to be practically free...we cannot recommend an experiment in this reservoir with copper sulfate, being fearful of the large amount of copper contained in the precipitate."

In 1910 the Board reported, "Treatment with copper sulfate is cheap and effective and is now regularly used in a great many reservoirs throughout the United States. This method has been suggested frequently as a means of improving the Middletown supply, but because of popular feeling against it the reservoirs have not been treated."

In 1911 the Mayor commented in his report: "It is to be regretted that the board has not thought best to apply the well-known and simple remedy when the quality of the water has suffered from the vegetable growth in the reservoirs. The best expert and scientific opinion is that the copper sulfate treatment is both effective and harmless; and a committee of judicious Middletown citizens has advocated its use here."

In 1914, ten years after the treatment was first considered, the Board reported: "As a result of the tests and examinations, it was found necessary to treat the water stored in each reservoir with copper sulfate... Results of these treatments were very gratifying, as the condition of the water supplies indicated."

In 1916, a chemical analysis of the water by the State Board of Health indicated contamination from sewage types of bacteria.

The Commissioners felt that chlorinators were an absolute necessity to protect the health of the community from an epidemic of typhoid fever. The next year they repeated their recommendation, and in 1918 an automatic chlorinator was installed at Higby Reservoir.

Control of Watershed

The Board had all along followed a policy leading toward eventual control by the city of the entire watershed of its reservoirs. Purchases were frequently made of land whose use might otherwise threaten the purity of the water supply.

Forestry

They also followed a plan of setting out trees on the watershed at Mount Higby, 168 acres eventually to be planted with 200,000 trees.

Adder Reservoir

Since consolidation in 1924, when the work of the Board of Water Commissioners was transferred to the Department of Public Works, the only major addition to the water system was the building of the Adder Meadow, or Roaring Brook, reservoir, which was begun in 1924 with the building of a dam, and not completed until 1934, under C.W.A., although successive reports of the Superintendent of Public Works all through the decade recommended the completion of the project.

Further Enlargement of the System

Also, in 1930, a new 16-inch pipe was laid from Laurel Brook Reservoir to replace the old 12-inch pipe. It was reported that "this new installation assures the city of an adequate supply of water for many years to come."

However, in 1941 the Board of Public Works found that "the water consumption is greater in the City than the normal safe yield of Mt. Higby reservoir, and...the consumption is steadily increasing."

In the fall of 1941, residents were requested to stop watering lawns and to curtail all unnecessary use of water until the situation was eased, and a serious shortage of water in each succeeding summer has required care in use.

In 1945 Metcalf and Eddy, Engineers, of Boston, were again asked to survey Middletown for further development of the water supply system. Their report was submitted June 26, 1945, and contains the following recommendations:

1. Undertake a preliminary ground water exploration to determine whether a suitable ground water supply can be developed.

2. Ascertain the terms under which water could be obtained from the Hartford Metropolitan District.

3. Unless either of the two foregoing investigations disclose a more favorable procedure, construct the following improvements:

    a. A 14-inch force main from Laurel Brook reservoir to Higby reservoir and a new pumping station near Laurel Brook reservoir to permit the transfer of water to Higby reservoir.

    b. An additional 20-inch supply main from Higby reservoir to the corner of High and Washington Streets to provide greater capacity for fire flow and to help insure continuous service. In the design and construction of this supply main, provision should be made for the future construction of a filter plant at Higby reservoir.

The whole history of Middletown's water system is one of continual growth and need for expansion. Every new project undertaken was bitterly fought in the beginning, but the march of progress inevitably brought the changes which farseeing citizens and officials had recommended years before their actual accomplishment.

Mrs. Richard G. Clarke
March, 1946

STATISTICAL TABLES

Water System - 1945

	Laurel Brook	Higby Mountain	Roaring Brook
Area of reservoir	72 acres	82 acres	34 acres
Area of watershed	132.4 acres	combined 2.06 sq. mi.	
Capacity of reservoir	220 million gallons	308 million gallons	66 million gallons
Transmission mains	40760 ft. or 7.07 miles (20-in. and 16-in. mains)		
Distribution mains	262701 ft. or 49.7 miles (2 in., 3 in., 4 in., 6 in., 8 in., 10 in., and 12 in. mains)		
Public hydrants	289)		
Private hydrants	34) total 323		

Consumption of Water

Year	Population	Customers	Daily per capita consumption, water	Meters in use	Rates
1866	6,000	75	40 gallons		$5 per annum to families not exceeding five persons
1880	10,000	907			
1900	14,000		89 gallons		
1908			110 gallons	90	
1914			133 gallons		
1917	16,000		78 gallons	2320	
1924	22,000		67 gallons		$15 minimum rate to consumers outside 1st taxing district. $5 minimum rate within 1st tax. dist.
1936		3434		3388	
1945	27,000	3725		3669	

PART II - FINANCIAL SECTION

TABLE OF CONTENTS

MIDDLETOWN WATER WORKS

1. It is deemed advisable to present the background of the basis upon which the following facts and conclusions are predicated.
2. The committee undertook at its first meeting with the general chairman to lay down a broad policy of its approach to the problem. The result of that meeting was that an effort would be made to gather pertinent historical facts and such financial facts as were available with reference to the costs of operation and the capital investment. That has been made possible with an unusual degree of completeness when it is considered that the original operations were started in 1866. The records for the years of 1868 to 1873 inclusive were not complete as to details, but beginning with 1874 and up to the present they were found to be very acceptable. The available financial records for the years ended December 31, 1944, are the basis for the figures appearing in this report.
3. In reviewing the financial information, it became apparent that in some years a careful segregation was not kept between capital expenditures and expenses. In the compilation of the facts an effort was made to re-classify such items in accordance with sound accounting principles. This reclassification resulted in the transfer of $354,682.53 from expense to the capital account for the years ending with 1923. In 1924, the first year that public utility reports were available, this segregation was maintained and the

capital additions from 1924 to 1944 amounted to $435,005.17. The latter figure was determined by compiling a schedule of the annual capital expenditures as disclosed by the Utility Reports.

4. The following summary of the capital cost of the Middletown Water Works is based upon the official town, city and public utility reports. The basis for the reclassification was those principles laid down by recognized accounting authorities. Wherever a question of doubt was raised, that question was resolved in favor of classifying the item as expense rather than capital. That rule was also applied in such instances where an account title indicated that it might contain capital and expense items.

SUMMARY OF CAPITAL ACCOUNT
Middletown Water Works
1866 to 1944 inclusive

Total Bond Issues and Notes Payable		$ 407,011.40
Additions paid for out of income.		
Reclassification from expense prior to 1924	$354,682.53	
As per Utility Reports subsequent to 1924	435,005.17	
Total additions to capital out of excess income		789,687.70
Total cost based upon City and Utility Reports		1,196,698.10
Total cost shown by December 31, 1944, Utility Report		1,146,958.98
Difference		$ 49,739.12

5. The difference of $49,000. may be due to the reclassification of expense items referred to in Paragraph 3. It is less than five per cent and for the purpose of this report will be recognized, but in no way will an effort be made to reconcile it. This stand is taken because it is of minor importance to the problem and, further, because the city has retained a firm of Certified Public Accounts to set up a capital account based upon an inventory. It might be further stated that without an audit it is not advisable to accept the Utility Report balance as correct, because it is not possible to determine the source of the balance which appeared in the first report filed with the State Public Utility Commission for the year ended December 31, 1924.

6. The result of this survey also disclosed that the net operating cost for the Water Works for the seventy-eight years beginning with 1867 and ending with December 31, 1944, amounted to $1,144,875.43 exclusive of Bond and Loan amortization of principal. The following summary will indicate the method used in arriving at the net operating cost:

SUMMARY OF OPERATING COST

Total disbursements 1867 to 1944 including Amortization of Bonds and Loans, interest, etc.		$1,906,569.36
LESS: Capital Assets included above as expenses - reclassified as capital assets prior to 1924	$354,682.53	
Amortization of Loans + Bonds	407,011.40	
Total Capital Assets included in expense		761,693.93
Net Operating Cost - Expenses		$1,144,875.43

7. The average annual cost of operation including interest on borrowings for the seventy-eight years ended December 31, 1944, was $14,677. The cost of operation for the calender of 1944 was $32,755.27, exclusive of depreciation.

8. The income from operations for the period prior to 1874 was not available, but for the intervening years ending December 31, 1944, the income was $3,140,997.95. Against that income was charged the total of operating expenses, repayments of loans and bond and expenditure for miscellaneous capital assets. The following summary will indicate the amount which was returned to the General Fund of the First Taxing District:

SUMMARY OF INCOME OVER EXPENSES

Total revenue from sale of water, wood, etc.		$3,140,997.95
Total expended as per "Summary of Operating Cost"	$1,906,569.36	
Total capital expenditures as per reports filed with Public Utility Commission	435,005.17	
Total expended out of Gross Income		2,341,674.53
Amount returned to General Fund - First Taxing District		$ 799,323.42

9. The conclusion drawn from the above is that the taxpayers of the First Taxing District have been receiving the benefit of an annual reduction in their tax rate because each year did show an excess of income over gross expenditures, in spite of the fact the latter included payment for capital expenditures and the repayment of borrowed monies.

No depreciation has been taken into account in any of the above figures or calculations. That matter will be left to others who are qualified to pass upon such technical matters; but it might be advisable for us to take the position that depreciation has been off-set in part at least by repairs and replacements which have not been capitalized.

10. The question of depreciation can rightly be a factor in any negotiations which might be the result of the committee's recommendations for a city-owned Water Works.

11. This committee has concluded from its deliberations and this report that it advocates a city ownership of the Water Works because it now serves far beyond the First Taxing District and, no doubt, will continue to expand. Further, city ownership should result in a fairer distribution of costs and benefits.

12. There may be a number of methods of accomplishing the sale of the Water Works to the City, but the committee presents the following data in addition to that presented above for the purpose of the record:

Total net income as determined by a reclassification of capital items which were charged as expense 1874 to 1944	$1,718,441.54
LESS: Income as revised for the period of 1874 to 1899 which was paid by First Taxing District users only	264,104.01
Total Net Income 1900 (when service was extended beyond First Taxing District) to 1944, paid by ALL users	$1,454,337.53

13. The committee in its comments above has taken the position of passing up the question of depreciation in any of its considerations for reasons previously stated, but it deems it advisable to point out that in any negotiations the First District Taxpayers should give consideration to any determinable portion of excess income which was contributed by the water users outside of the First District. The basic period for that determination begins in 1900, the year that the lines began to be extended into the outside district on a greatly expanded program.

14. The following summary will indicate what is believed to be the excess amount contributed by the users outside of the First District. The basic factor in this determination was a percentage arrived at by using ten-year periods. For each tenth year an actual determination was made of the amount paid by the users in each district. These figures were translated into percentages. For example, in 1900 it was determined that one per cent of the total water charges were paid by the users outside of the First District, and so on as indicated below:

1900	--------	1.00%
1913	--------	17.11%
1923	--------	21.74%
1933	--------	33.47%
1943	--------	36.97%
1944	--------	37.24%

15. It was not possible to get an annual percentage because the records were not available, but it was found that for the purpose of this report a progressive annual increase would be practical. For example, the actual factors for 1900 and 1913 were known; therefore, to the 1% for 1900 was added 1.22% to determine the 1901 factor. This was followed for each year until 1913 when a positive factor of 17.11% was reached. These factors were applied to the total collections and in this way it was determined that the users outside of the First District contributed $383,300.71 since 1900 toward the excess income above the operating cost of the Water Works. It was previously stated that this excess has been transferred to the General Fund of the First District, which in turn resulted in a lower rate to the property owners of that district.

16. The above detail has been presented because the Committee believes that any basis for sales negotiation should include the $383,300.71 as a credit to the users outside of the First District.

MIDDLETOWN SEWAGE DISPOSAL SYSTEM

1. The main plant located in the meadows was constructed in 1937 at a cost of $489,321.74. The City's share of that cost was $273,601.58, covered by a bond issue secured by all the property within the limits of the City of Middletown. In other words, the entire City's credit standing was the basis for the bond issue, subject to such liberal provision as are permitted by a special law dealing with river pollution problems, but the ownership and use is restricted to the residents in the area served by the North and South Interceptors.
2. Many of the financial and historical facts are so generally known to all citizens, the committee came to the conclusion that the repetition of such information would serve no useful purpose in this report.
3. To the original cost of $489,321.74 should be added additional capital outlay of $4,481.62 since 1937 to December 31, 1945. This addition makes the Capital Cost of the system as of December 31, 1945, $493,803,36.
4. The City's share of the original cost is being amortized at the rate of $17,237. per year over a period of twenty years. The bonds carry 2% interest.
5. The rate is set by the Board of Public Works. It is based on a sum necessary to operate the plant and amortize the bonded indebtedness. The rate must be approved by the Common Council.

6. The following statement for the year ended April 30, 1945, will disclose the financial facts for that year. No attempt will be made to comment upon any figures because that is not the prerogative of this committee.

INCOME		
Cash on hand May 1, 1944		$27,213.50
Receipts for year ended April 30, 1945		29,368.12
TOTAL		56,581.62
DISBURSEMENTS		
Administrative Expenses	$ 7,418.12	
Operation Expenses	6,624.15	
Maintenance Expenses	3,910.70	
Miscellaneous Expenses	386.28	
Total operating cost	18,339.25	
Finance Expenses	17,237.00	
Capital Outlay	382.55	
TOTAL EXPENDED		35,958.80
BALANCE as per bank balance, April 30, 1945		$20,622.82

7. In discussing the question of sewage disposal with city officials, it was disclosed that there are ten known private sewers, six of which are connected to the present system, whereas four are still flowing directly into streams. It is understood that these private systems cannot be compelled to connect to the present system until they are declared a public health nuisance or that their outlet pollutes the river.

8. The committee finds no reason to offer any recommendations in light of the facts which caused the creation of the plant. Pollution of the river was of state-wide concern, and because of the power of the State Water Commission the City deemed it advisable to construct the present system. The City's portion was financed under provision of a state statute which allowed the bond issue to be floated beyond the five per cent of the Grand List if that were necessary. In the financial setup the City has agreed to extend its credit for the issue, and the users of the system are providing the income to pay off the issue by an annual contribution out of income of $17,237. Ten per cent of that amount is set aside as a reserve against default, but the result of that accumulation will be applied against the final balance or can be refunded in total to the City. At the time the final payment on the bond indenture is made the title to the system will vest in the City.

9. The disposal of sewage seems to present no serious problem at this time. All private sewer owners could, if they so choose, connect up with the present interceptors. Any area which has potential development possibilities can, if it so desires, create a sewage disposal district and construct its own plant. Such a step, of course, must conform to the requirements of the existing statutes. The Committee has been informed that the present facilities are capable of providing disposal for a city of forty thousand inhabitants, whereas our present population is somewhere near twenty-five thousand.