

REPORT OF
SEWAGE STUDY COMMITTEE
BARRE, MASSACHUSETTS

July, 1970

To The Citizens of The Town of Barre:

In 1967, The Town of Barre received a mandate from the State of Massachusetts setting forth a time schedule for the establishment of a sewerage system.

In 1968, this committee was appointed to aid the Board of Health in obtaining a Preliminary Sewerage Survey, this being the first step necessary to give the Town eligibility for State and Federal funds. On March 9, 1968, the sum of \$12,000 was appropriated for this survey by the Town. In December 1968, The Barre Wool Combing Company, Ltd. provided an additional \$6,000. This additional sum was to defray in whole the additional cost of expanding the survey of sanitary wastes, to include the pre-treated industrial wastes of The Barre Wool Combing Company, Ltd.

The engineering firm of Metcalf & Eddy, Inc. of Boston was retained to make this study in January, 1969.

THE NEED

Proper disposal of sewage has long been a recognized problem in Barre and each year becomes more serious. As we all know much of the land in Barre is not suitable for good sewage disposal, and many residences do not have sufficient area for proper individual septic systems. The national concern with the pollution of our streams is very real and one we must all recognize and face up to, from both a health and recreational viewpoint. Our town would be much more attractive than at present for the construction of new homes, if we had a municipal sewerage system.

The use of water has greatly increased in recent years in our modern homes where automatic dish-washers, garbage disposals, clothes washers, etc. are becoming more common. Since 1964 the consumption of water has risen from about 64 to 90 gallons per capita per day.

THE SCHEDULE

The schedule as set forth by the State Division of Water Pollution Control is as follows:

	<u>Item</u>	<u>Date</u>
1.	Completion of preliminary report and plans	February 1971
2.	Appropriation of funds for a treatment plant site, final plans and construction.	May 1971
3.	Acquisition of site for treatment plant	July 1971
4.	Completion of final plans	March 1972
5.	Start of construction	April 1972
6.	Completion of construction of treatment plant	April 1973

THE REPORT

At the request of this committee, Metcalf & Eddy was asked to submit two alternative plans and estimated costs for each.

Plan I - For domestic sewage and minor industrial wastes.

Plan II - For domestic sewage and industrial wastes of The Barre Wool Combing Company, Ltd.

As sewers are relatively permanent and expensive to build, we have tried to design the system capacity to accommodate the town's needs for the next 40 - 50 years. In addition, we have felt it necessary because of costs, to recommend the system be built in at least three phases. Phase one, which will be our major concern at this time, includes the treatment facilities and sewer lines to areas of greatest population density. The engineers have estimated that by 1973 there will be 1000 persons served by the system and by the year 1990, with the completion of Phases II and III the system will serve a population of 3300.

ALTERNATIVE PLAN I

(Not Recommended by Metcalf & Eddy, Inc.)

Under this plan, Barre would build and operate treatment facilities for handling domestic sewage and only small amounts of commercial and industrial waste from scattered locations in the town. The industrial wastes from The Barre Wool Combing Company would not be included.

The engineers have recommended that the extended aeration, activated sludge process be used for treatment, followed by chlorination of the effluent. They recommend the treatment plant be located on a plot of land in Barre Plains between Route 32 and the Penn Central Railroad tracks. If this plan was chosen by the townspeople, it would be necessary for the town to acquire title to the above property.

The design of this proposed waste treatment facility when completed will treat an average daily flow of 400,000 gallons based on a serviced population of 3300 in the year 1990. This plan would be implemented in three phases, as follows:

<u>Phase</u>	<u>Completion Date</u>
I	1975
II	1980
III	1990 or later

ESTIMATED CONSTRUCTION COSTS

<u>Phase</u>	<u>Gross Cost</u>	<u>Anticipated Federal and State Aid</u>	<u>Net Cost</u>
I	\$4,310,000	\$3,128,000	\$1,182,000
II	2,900,000	1,621,000	1,279,000
III	<u>2,460,000</u>	<u>1,200,000</u>	<u>1,260,000</u>
Total	\$9,670,000	\$5,949,000	\$3,721,000

ALTERNATIVE PLAN II
(Recommended by Metcalf & Eddy, Inc.)

This plan provides for the treatment of the pre-treated industrial waste from The Barre Wool Combing Company, in addition to the domestic wastes specified in Alternate Plan I. The design of this facility will accommodate an average daily flow of 700,000 gallons, 300,000 gallons being industrial waste, in the year 1990.

In this study, also, it is recommended that the extended aeration, activated sludge process be used for treatment, followed by chlorination of the effluent before discharge to the Ware River.

Metcalf and Eddy recommend that the lagoons and contiguous area, now used by The Barre Wool Combing Company for its present waste handling, be the site of the treatment plant for this system. This plan would be implemented in three phases also, the completion dates being the same as those in Alternative Plan I.

ESTIMATED CONSTRUCTION COSTS

<u>Phase</u>	<u>Gross Cost</u>	<u>Anticipated Federal and State Aid</u>	<u>Net Cost</u>
I	\$ 4,650,000	\$3,400,000	\$1,250,000
II	2,900,000	1,621,000	1,279,000
III	<u>2,460,000</u>	<u>1,200,000</u>	<u>1,260,000</u>
	\$10,010,000	\$6,221,000	\$3,789,000

This plan would have a net cost of \$68,000 more than Alternative Plan I. This extra cost of course, would not necessarily be borne by the town, since The Barre Wool Combing Company, obviously, should contribute to the cost of a joint treatment plant.

CONCLUSIONS

The Division of Water Pollution Control has approved the report of Metcalf & Eddy, Inc. with the following provisions relative to Alternative Plan II and The Barre Wool Combing Company:

1. No increase in the pollution load of waste water from the industry will be allowed.
2. A pilot plant study be carried out in the field at the industry to verify the results of the bench scale study carried out in the laboratory.
3. The company modify their present waste handling facility as outlined in the Metcalf & Eddy report.
4. Determine if additional storage capacity is needed, from the results of the pilot plant study.
5. An automated system be considered for regulating storage of treatment plant effluent.

This study is in accordance with the Central Regional Massachusetts Planning Commission's overall plans which concludes that it would be impractical for Barre to join with any other town in a joint sewerage system. Our report has been submitted to the Central Massachusetts Regional Planning Commission for a formal review. The approval of the commission is a pre-requisite for eligibility for funding grants under PL89-240, which have been considered in our estimated costs.

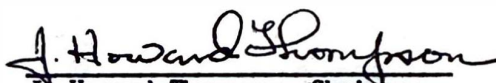
RECOMMENDATIONS

With the issuance of this report, the aims of the committee have been achieved. Accordingly, the committee is hereby dissolved.

The committee recommends the following:

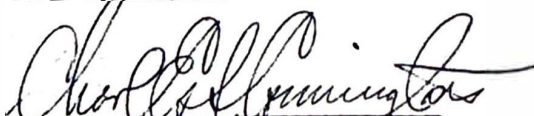
1. That a new committee be formed under the auspices of the Board of Selectmen.
2. That the new committee enter into negotiations with The Barre Wool Combing Company, relative to Alternative Plan II.
3. That the new committee report to the townspeople on the relative advantages of Alternative Plans I and II, based on the results of the negotiations with The Barre Wool Combing Company.
4. That, based on decisions of the townspeople, the new committee pursue the implimentation of the program as set forth by the Massachusetts Division of Water Pollution Control.

Respectfully submitted,

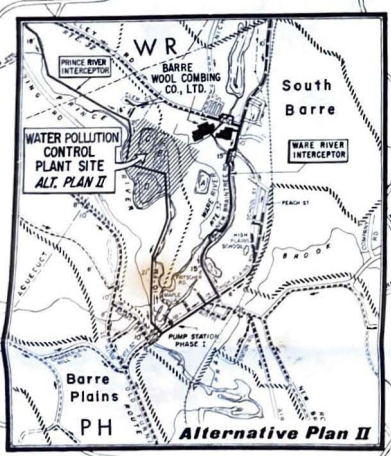
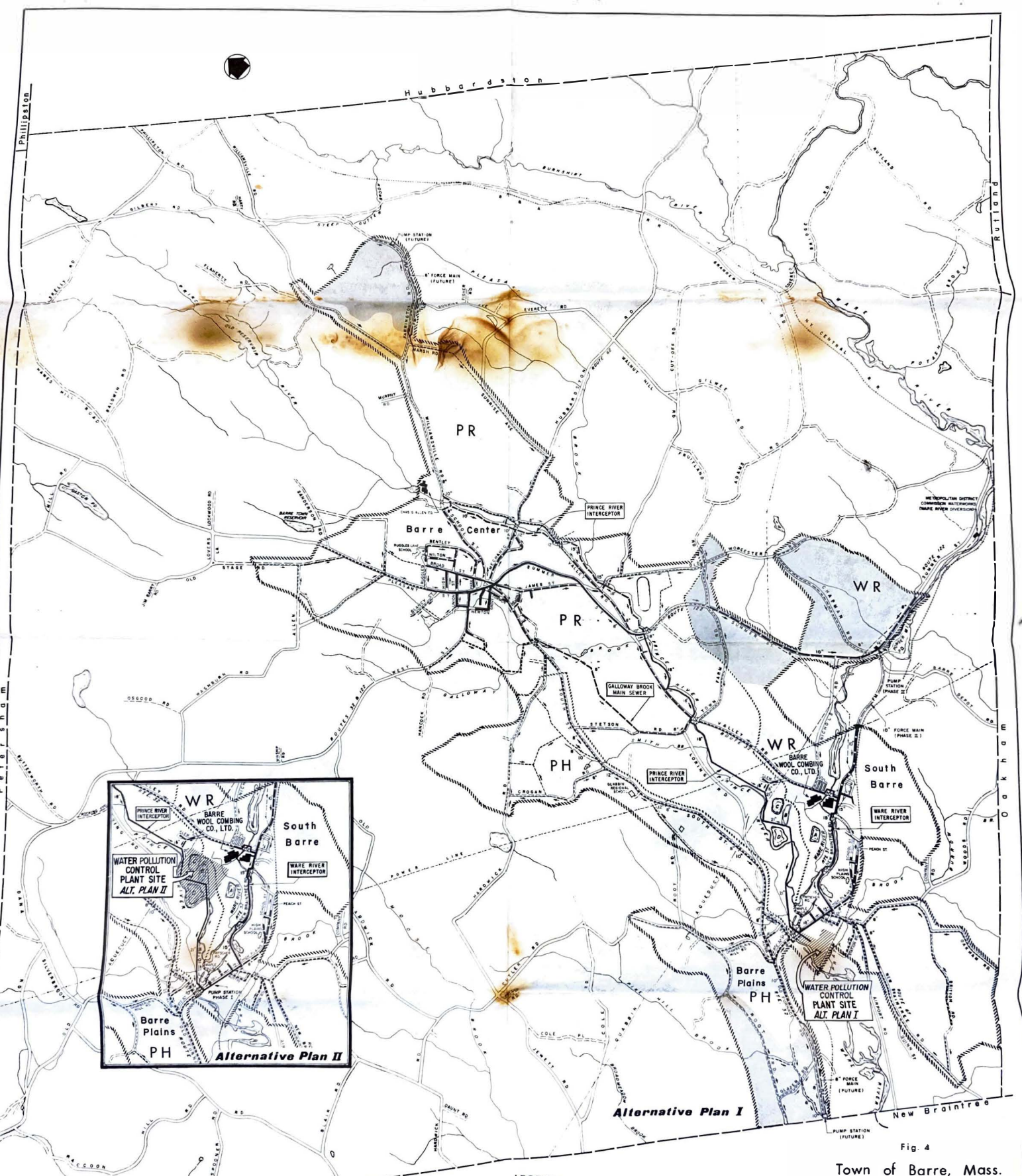

J. Howard Thompson, Chairman


Merritt E. Cutting, Clerk


Paul T. Carroll


Charles W. Connington


Richard Alan Strauss



LEGEND
Proposed Sewerage System

- PHASE I
- PHASE II
- PHASE III
- FUTURE
- FORCE MAIN
- ULTIMATE SEWER SERVICE AREA
- SEWER DISTRICTS
- AREA TRIBUTARY TO PUMP STATION
- EXISTING SEWER

WR WARE RIVER SEWER DISTRICT
 PR PRINCE RIVER SEWER DISTRICT
 PH PINE HILL-SOUTH ST. SEWER DISTRICT



NOTE: ALL SEWERS 8" UNLESS OTHERWISE INDICATED.

Fig. 4
Town of Barre, Mass.

PROPOSED MASTER PLAN FOR SEWERAGE SYSTEM

December 1969

METCALF & EDDY, INC.
 Engineers
 Boston · New York · Palo Alto · Cincinnati

SEWAGE STUDY COMM.
Beane, Mass. 01005



POSTAL PATRON LOCAL