THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

DRAFT FOR WATER RESOURCES COMMISSION DISCUSSION

New Neponset Valley Relief Sewer
Interbasin Transfer Application
WRC Staff Recommendation

I. Background

On November 22, 1991, the Massachusetts Water Resources Commission received a request for approval of an action to increase the present rate of interbasin transfer under the Interbasin Transfer Act (M.G.L. Chapter 21 ss. 8B-8D) from the Massachusetts Water Resources Authority (MWRA). The MWRA is proposing to construct relief facilities for the New Neponset Valley Sewer System (NNVSS) in order to alleviate present and future surcharge and overflow conditions by increasing the system capacity. The NNVSS services the towns of Milton, Canton, Norwood, Walpole, Stoughton, Dedham, Westwood, and Hyde Park (Boston), in the Neponset River subbasin of the Boston Harbor basin. Wastewater will be treated at the MWRA's Nut Island Sewage Treatment Plant in Quincy and discharged to the Massachusetts Coastal basin. The project will include construction of parallel gravity relief sewers for portions of the NNVSS. All construction will take place in Milton, Canton, and Norwood.

This project is designed to be used only during extreme wet weather flows, that is, when combined storm and sewer flows exceed 25 mgd. The existing rate of wastewater transfer is 57.92 mgd. The project will increase the total capacity to transfer wastewater to 71 mgd, for an increase in capacity of 13.08 mgd. **The Commission will be asked to vote on this increase in capacity.**

This increase in capacity does not represent the actual increase in the volume to be transferred out of basin on an annual basis. The actual increase in wastewater to be transferred out of basin through normal increases in water use in the communities served is estimated to be 5.16 mgd. This will be offset by DEP mandated Infiltration/Inflow reduction of 4.86 mgd, for an estimated net increase out of basin of 0.30 mgd during these peak events.

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II. Evaluation of the Proposed Interbasin Transfer

1. This interbasin transfer application was reviewed on its own merits.

2. The staff recommendation is made on facts relevant to the Interbasin Transfer Act and its regulations.

3. The staff used guidelines and interpretations which have been in effect for more than 5 years.

III. Recommendation

On May 11, 1992, the Water Resources Commission will discuss the merits of this application. The communities served by the MWRA New Neponset Valley Relief Sewer System meet five of the six applicable criteria required under the Interbasin Transfer Act (Chapter 658, Acts of 1983) and regulations (313 CMR 4.05). Criterion #3, "All practical measures have been taken in the receiving area" is not fully met by all communities. However, since these communities and the MWRA have shown a good faith effort to implement and continue existing programs to meet this criterion, **Staff recommends a conditional approval of this application.**

IV. Synopsis of Evaluation Criteria

	APPLICATION MEETS
CRITERION #1: MEPA Compliance	Yes
CRITERION #2: Viable Sources	Yes
CRITERION #3: Conservation	Yes, With Conditions
CRITERION #4: Watershed Management	Not Applicable
CRITERION #5: Reasonable Instream Flow	Yes
CRITERION #6: Groundwater	Not Applicable
CRITERION #7: Local Water Resources Management Plan	Yes
CRITERION #8: Other Transfers	Yes

V. Basis for WRC Staff Recommendation

A. Existing Accomplishments

All the towns served by the New Neponset Valley Sewer System have conservation programs in place. Conservation accomplishments include:

1. All communities perform regular leak detection surveys.
2. All communities, with the exception of Stoughton and Boston, are 100% metered. Stoughton and Boston are 99% and 98% metered, respectively. Both communities have programs in place to achieve 100% metering.
3. All communities have water and sewer rates which reflect the full cost of those services.
4. Most communities have distributed water saving plumbing fixtures to residential customers.

B. Additional Requirements

In order to fully comply with Criterion #3, All practical measures have been taken in the receiving area, certain additional actions must be undertaken. Specifically:

1. Canton must distribute water saving plumbing fixtures to residential customers in an effort to reduce residential gpcd to 80 or below
2. The Dedham-Westwood Water District must implement a plan to reduce unaccounted-for water to below 15%. The towns of Dedham and Westwood must install water saving plumbing fixtures in all public buildings.
3. Walpole must distribute water saving plumbing fixtures to residential customers in an effort to reduce residential gpcd to 80 or below
4. Stoughton must achieve 100% metering, reduce its unaccounted-for water to below 15%, and implement a program to reduce residential gpcd to less than 80.
5. Milton must implement a program to reduce unaccounted-for water to below 15%, increase frequency of meter readings to quarterly, install faucet aerators and low-flow shower heads (where appropriate) in all public buildings
6. Norwood must implement a plan to reduce unaccounted-for water to below 15%.
7. Boston must continue with its system rehabilitation and metering projects in an effort to reduce its unaccounted-for water to below 15%

C. Recommended Conditions

The MWRA has shown a commitment to assisting its member communities in implementing water conservation programs. The Authority is also under Court-mandated deadlines to complete certain portions of the Boston Harbor clean-up. Therefore Staff recommends that the project be allowed to proceed as scheduled, but that **within six months MWRA provide a schedule for the completion of the following actions for WRC review and**

approval:

1. a plan to provide assistance to the towns of Stoughton, Milton, Norwood, and the Dedham-Westwood Water District to identify sources of unaccounted-for water, with a timetable for the actions recommended within the plan to occur
2. a plan to provide assistance for the installation of water saving plumbing fixtures in public buildings in Dedham, Westwood, Milton, and Boston, and a timetable for completion of the installation program
3. a plan to provide assistance for the distribution of water saving plumbing fixtures to residential customers in Canton and a timetable for completion of the program.
4. within a year of submitting these plans, provide evidence to the WRC that they are being implemented

In addition to these conservation measures, staff recommends that the MWRA continue working with the Natural Heritage Program and the local Conservation Commissions on issues related to pipeline alignment.

VI. Reasonable Instream Flow

It is the judgement of the staff that this transfer will not have a significant effect on the instream flow of the Neponset River and that reasonable instream flows will be maintained. This relief sewer will only be used during periods of severe wet weather, when combined storm and sewer flows exceed 25 mgd. These wet weather events coincide with incidences of high flows in the river. The public health and safety benefits of relieving the sewer overflows more than outweigh the effects of the slight increases in water that may be transferred out of basin as a result of this project.

Staff is concerned that portions of the Neponset River basin are hydrologically stressed. It should be emphasized that this staff recommendation is for the construction of relief facilities for the New Neponset Valley Sewer system only. Any expansion of this sewer system which results in additional sewer hookups will be subject to the Interbasin Transfer Act and will be treated as a separate project.

INTERBASIN TRANSFER ACT
313 CMR 4.05: CRITERIA FOR EVALUATING
AN APPLICATION FOR APPROVAL

AN APPLICATION BY THE MWRA TO CONSTRUCT
RELIEF FACILITIES FOR THE NEW NEPONSET VALLEY SEWER SYSTEM

CRITERION #1 An environmental review pursuant to MGL, c.30, ss 61 and 62H, inclusive has been complied with for the proposed IBT.

The Secretary of Environmental Affairs certified the Final EIR for this project on July 18, 1990.

CRITERION #2 All reasonable efforts have been made to identify and develop all viable sources in the recieving area.

According to the Boston Harbor Supplemental Draft Environmental Inmpact Statement: Evaluation of Satellite Advanced Wastewater Treatment Facilities, prepared for the EPA, inbasin disposal of wastewater via satellite treatment facilities is not feasible due to water quality problems.

CRITERION #3 All practical measures to conserve water have been taken in the receiving area, including but not limited to the following:

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Leak Detection	Entire system surveyed every two years	Canton 12% Unaccounted-for water. Water Department's budget has line item for leak detection. Half of Town is surveyed each year. Current survey to be completed in Spring 1992.

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Leak Detection continued		Dedham-Westwood 20% Unaccounted-for water. Ongoing water main replacement program and regular leak detection survey. Last survey completed in 1991. Walpole 10% Unaccounted-for water. Complete leak detection survey performed every three to five years. Most recent survey March 89. Have budgeted to perform survey in summer 1992. Stoughton 26% Unaccounted-for water. Regular water audit. Ongoing leak detection program. Most recent survey January 1990. Milton 19% Unaccounted-for water. Complete leak detection survey performed every two years. Most recent survey completed in 1990; have a survey scheduled for FY 1993. Norwood 24% Unaccounted-for water. Complete leak detection survey performed every two years. Last survey performed in 1990; bids went out for survey to be performed this year on 4/24/92.

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Leak Detection continued		Hyde Park (Boston) 24% Unaccounted-for water. Ongoing leak detection program to survey 700 miles of pipe per year.
Metering	100% of system metered. Test all meters over 10 years old. Quarterly meter readings.	Canton 100% metered. Meter replacement program to replace 500 meters/year. Goal of 100% outside-read meters. Currently in the sixth year of a ten year program to replace all nonaccessible meters. Commercial meters read quarterly; residential meters read 3 times/year. Dedham-Westwood 100% metered. All residential meters replaced every 10 years; all 1-inch commercial meters replaced every 5 years; all commercial meters greater than 1-inch replaced every 2 years. Walpole 100% metered. Ongoing meter replacement program with goal of all meters to be no more than 10 years old. Recently tested master meters. Replaced 4. Quarterly meter readings.

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Metering continued		Stoughton 99% metered. All meters outside reading. Ongoing meter replacement program to replace all meters over 10 years old. Milton 100% metered. Ongoing meter testing and replacement program to replace every meter every 15 years. Semi-annual meter readings. Norwood 100% metered. Ongoing meter testing and replacement program to test and replace as needed 200/meters per year. Industrial meters read monthly; residential and commercial meters read quarterly. Hyde Park (Boston) 98% metered; 90% of public buildings metered. Ongoing program to achieve 100% metering. Ongoing program to replace existing meters every 15 years. Quarterly meter readings.
Rate structure which reflects and encourages conservation.	Full cost / No decreasing block rate.	MWRA Wholesale Sewer Rate Flat rate based on population and wastewater strength. Currently implementing a wastewater metering system to provide flow-based rates.

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Rate structure continued		Canton **Water Rates:** Flat Rate; Enterprise Account. **Sewer Rates:** Flat rate; Recent increase in sewer fees. Dedham-Westwood **Water Rates:** Flat Rate; are investigating conversion to increasing block rate. **Sewer Rates:** Dedham: $3.91/60 c.f.; Westwood: Increasing block rate based on meter size and usage; initial block based on 5/8" meter $15/quarter; $2.46/100 c.f for use of 0 to 2500 c.f Walpole **Water Rates:** Flat Rate: rate increase on July 1, 1991; Full cost pricing. **Sewer Rates:** $16/1,000 c.f. residential; $25.30/1,000 c.f. industrial. Stoughton **Water Rates:** Water rates reviewed each year; Enterprise Account. **Sewer Rates:** $3.42/100 c.f. Milton **Water Rates:** Flat Rate; Full cost pricing. **Sewer Rates:** minimum rate (1200 c.f. or less) $12; $1.45/100 c.f. over 1200 c.f. Norwood **Water Rates:** Flat Rate; Full cost pricing. **Sewer Rates:** $1.82/100 c.f.

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Rate structure continued		Hyde Park (Boston) **Water Rates:** Increasing block rate; Full cost pricing. **Sewer Rates:** Increasing block rate: Initial block $16.17/1,000 c.f.
Public Information Program	Bill Stuffers	Canton Bill stuffers. Participate with MWRA in a Public Awareness Program. Distribute 6000 conservation pamphlets per year. Dedham-Westwood Bill Stuffers, school programs, newsletters, news releases, meetings with various organizations, meter readers distribute information. Walpole Bill stuffers, distribute water saving devices, school programs, articles in local newspapers. Stoughton Distributed conservation information with water saving devices. Information distributed during waterworks tours. Stoughton has had conservation program for past 40 years. Milton Bill Stuffers, school program.

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Public Information Program continued		Norwood Brochure mailings, school programs, programs on local cable station. Hyde Park (Boston) Bill Stuffers.
Drought Contingency Plan		MWRA DEP-approved drought management plan. Canton DEP-approved drought management plan. Dedham-Westwood DEP-approved drought management plan. Walpole DEP-approved drought management plan. Water Management Policy limiting the outdoor use of water. Stoughton DEP-approved drought management plan. Any new construction must provide own well. Milton DEP-approved drought management plan. Norwood DEP-approved drought management plan. Hyde Park (Boston) DEP-approved drought management plan.
Implement land use controls for the sources in the receiving area that meet DEP regulations 310 CMR 22.20		Not applicable for a wastewater transfer

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Plumbing fixtures	Enforce state plumbing code/retrofit public buildings with water saving devices/ make retrofit devices available at cost if residential gpcd is over 80.	Canton Enforce plumbing code. Have installed efficient plumbing fixtures in public buildings. Residential gpcd is 108. Dedham-Westwood Plumbing code enforced by town building inspectors. Have distributed efficient plumbing fixtures to customers. Is considering working with towns to install fixtures in public buildings. Residential gpcd is 52. Walpole State plumbing code enforced. Have installed efficient plumbing fixtures in public buildings. Looking at programs for distribution to residential customers. Residential gpcd 105. Stoughton State plumbing code enforced. Have installed efficient plumbing fixtures in public buildings. Distributed fixtures to residential customers. Residential gpcd is 85. Work with commercial/industrial users to encourage water conservation (such as recycling)

CONSERVATION MEASURE	RECOMMENDATIONS	ACCOMPLISHMENTS
Plumbing fixtures continued		Milton State plumbing code enforced. Have distributed efficient plumbing fixtures to customers as part of MWRA's Operation Watersense. Have installed low flow toilets in public buildings. Residential gpcd is 67. Norwood State plumbing code enforced. Have installed efficient plumbing fixtures in public buildings. Residential gpcd is 74. Hyde Park (Boston) State plumbing code enforced. Have distributed efficient plumbing fixtures to customers and installed in public buildings as part of MWRA's Operation Watersense. Residential gpcd is 65.

CRITERION #4 A comprehensive forestry management program which balances water yields, wildlife habitat, and natural beauty on watershed lands presently serving the receiving area and under the control of the proponent has been implemented.

Not applicable to a wastewater transfer.

CRITERION #5 Reasonable instream flow in the river from which the water is transferred is maintained.

The project will result in an estimated net loss of 0.30 mgd from the Neponset River basin by the year 2020. This represents a reduction of streamflow by less than one percent on an annual basis. The reduction amount is an estimate of future water needs which will be met from local sources by the towns which utilize the New Neponset Valley Sewer System, minus the DEP-mandated I/I removal.

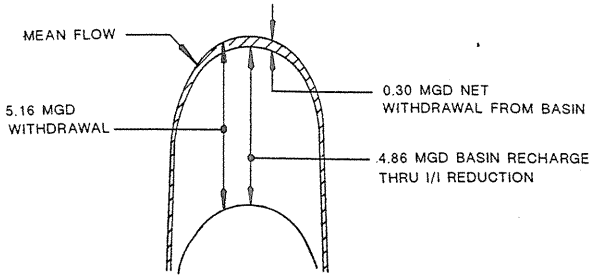
CRITERION #6 Not Applicable: pertains only to proposed interbasin transfers that are ground water withdrawals.

CRITERION #7 Communities have adopted or are actively engaged in developing a local water resources management plan.

All communities have filed a Municipal Water Supply Questionnaire with DEM Office of Water Resources and a Local Water conservation Plan with either EOEA, DEP Division of Water Supply, or DEM Office of Water Resources. In addition, the WRC approved a Draft River Basin Plan for the Neponset River basin in 1991.

CRITERION #8 The Commission shall consider the impacts of all past, authorized or proposed transfers in the donor basin.

The Neponset River basin has been identified as a stressed basin by the WRC-approved Neponset River Basin Plan. This project in itself will not result in additional hydrological stress. However, any expansion of this sewer system which results in additional sewer hookups will be subject to the Interbasin Transfer Act and will be treated as a separate project.



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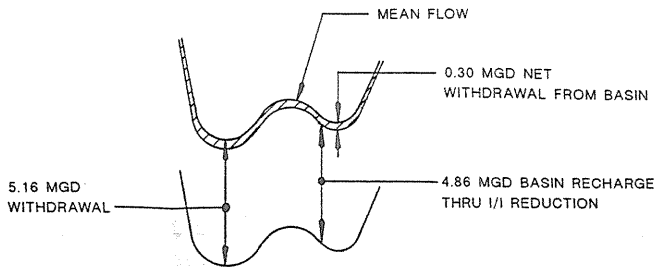

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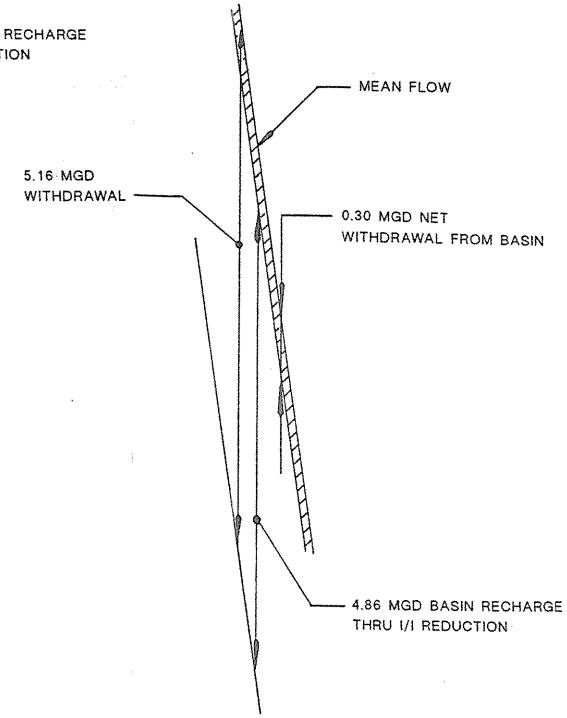

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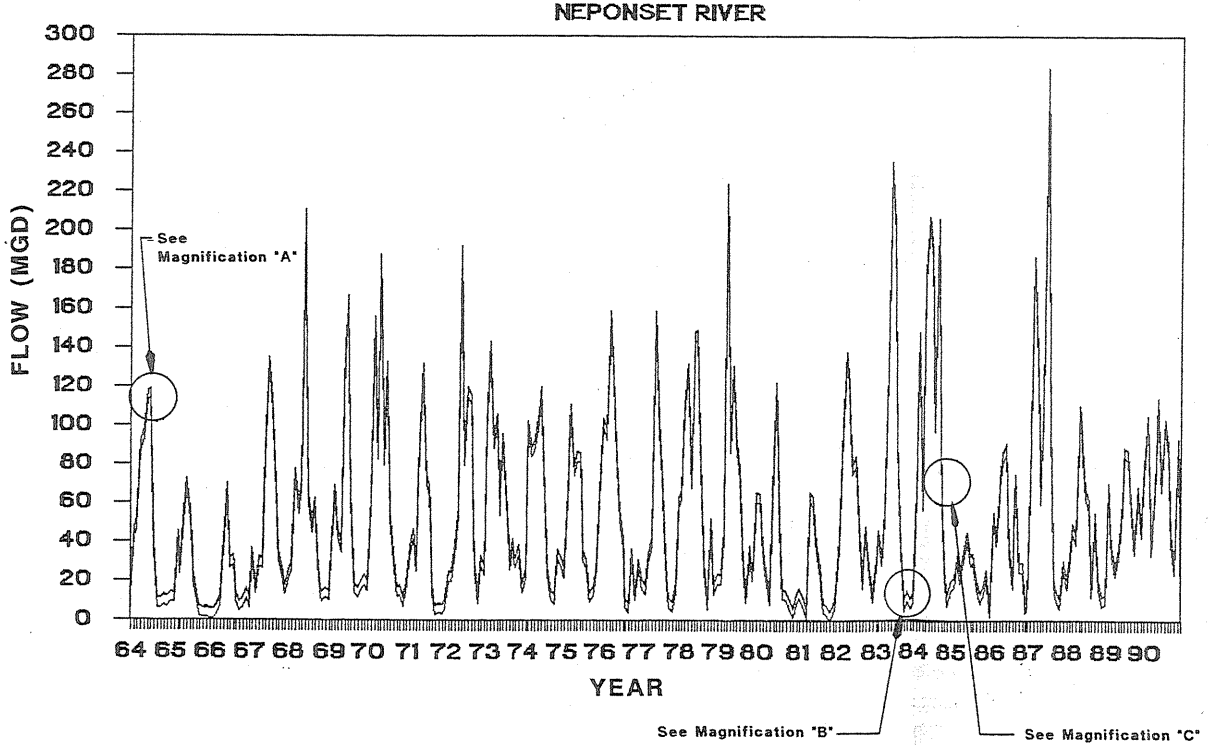
MEAN MONTHLY FLOWS

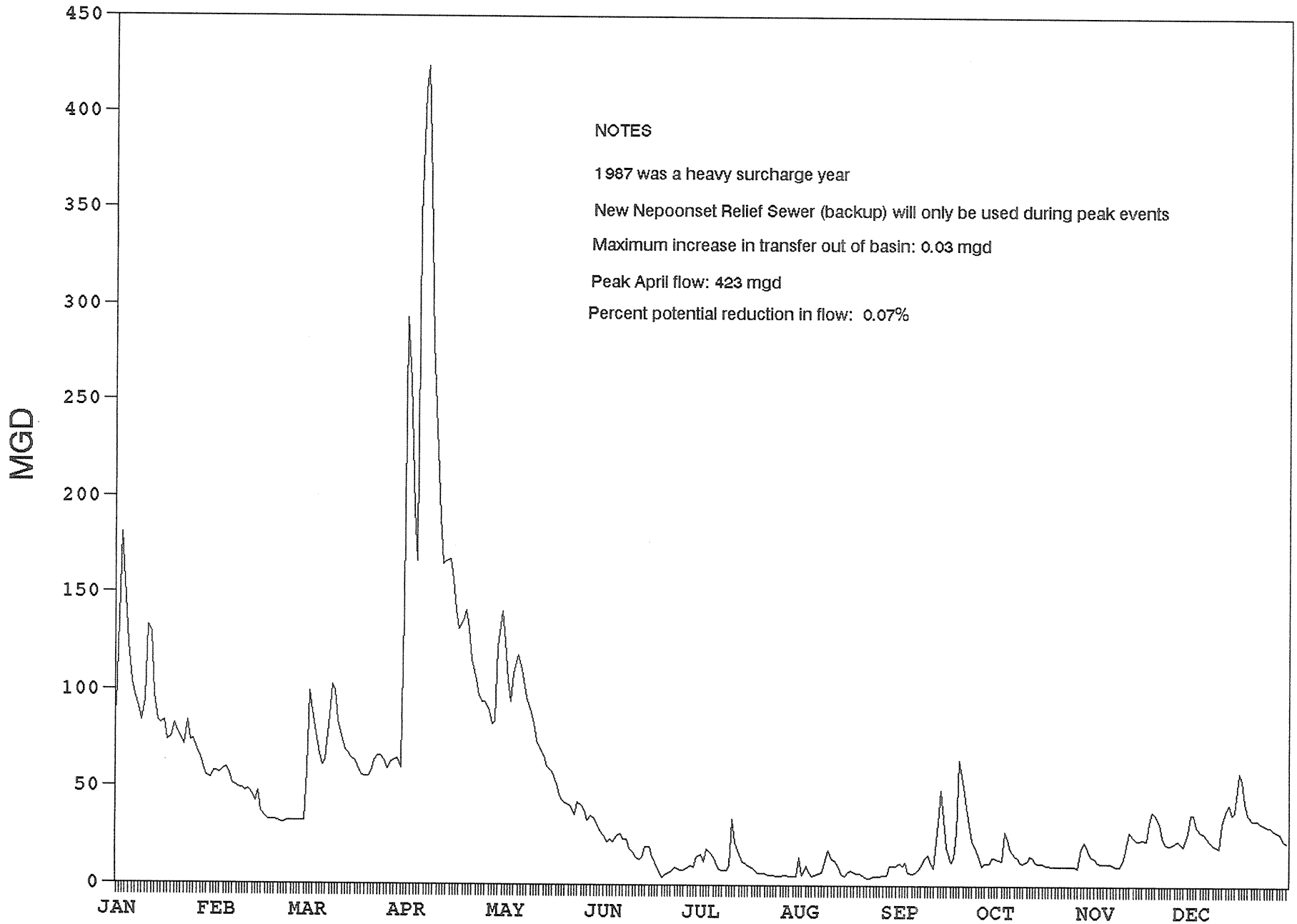
NEPONSET RIVER



Fay, Spofford & Thorndike, Inc., Engineers & Planners

NOTE: HYDROGRAPH PLOTTED FROM DATA SUPPLIED BY THE U.S.G.S. AS RECORDED AT THE NORWOOD GAGE

APPLICATION FOR APPROVAL INTERBASIN TRANSFER

New Neponset Valley Sewer System Relief Facilities

NEPONSET RIVER FLOWS
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