Decision of the Massachusetts Water Resources Commission
on the
Application for an Interbasin Transfer of Wastewater
by the Massachusetts Water Resources Authority
for the Wellesley Extension Sewer Replacement Project

December 12, 1988

Background

The Massachusetts Water Resources Authority (MWRA) requested approval by the Water Resources Commission (WRC) of an interbasin transfer of wastewater via the Wellesley Extension Sewer Replacement (WESR) Project. This project is based on a need to provide relief capacity for the existing interceptors in this portion of the MWRA service area. The new pipe will convey sanitary wastewater flows. The current system suffers from inadequate capacity and is subject to surcharging and overflows to the Charles River and nearby areas with associated water quality, odor, and public health problems. The purpose of the project is to eliminate these problems by increasing the capacity of the system to transfer wastewater from the Charles and Concord River basins to the Deer Island sewage treatment plant for treatment and discharge to the Massachusetts coastal basin.

The original request from the MWRA was received in March, 1988. The project consisted of the Framingham Extension Sewer (FES) project and the WESR project. In July, 1988, the MWRA requested that the two projects be considered separately, as the WESR portion was in a more advanced stage of planning and the Final Environmental Impact Report for it was certified by EOEA on August 17, 1987. The MEPA office and the WRC agreed to consider the projects separately with the following conditions:

1. The total volume from both projects is the capacity the WRC will consider for approval of the WESR project, as it is downstream of the FES project.
2. The FES project will undergo separate review with no guarantee of approval.

The increase in transfer of wastewater by the FES and the WESR projects is a total of 4.8 million gallons per day (mgd). Of this amount, 3.8 mgd would come from the MDC/MWRA sources in the Chicopee and Nashua River basins, and 1 mgd would come from local sources in the Charles and Concord River basins. Of that 1 mgd, 0.8 mgd would come from the Charles River basin and 0.2 mgd would come from the Concord River basin. These figures are based on peak flows, and it is expected that they would occur approximately four times a year. These peak flows also include the reduction of inflow and infiltration (I/I) to the system, as required by the Department of Environmental Quality Engineering, Division of Water Pollution Control (DEQE/DWPC).

At the September 12, 1988 meeting of the WRC, the application for the WESR project was accepted as complete. Prior to making this determination, WRC staff met with MWRA staff several times, (March 31, May 19, and August 8, 1988). Three letters (dated April 26, May 27, and August 3, 1988) were sent to the Authority requesting additional

information. The WRC staff also met with DEQE/DWPC staff to review the application on March 31, 1988 and August 16, 1988. On October 26, 1988, public hearings were held in Needham and in Wellesley. Public comments were received until November 9, 1988 and were considered and discussed with the Authority and DEQE/DWPC on November 23 and 29, 1988. A letter responding to the public comments was prepared.

WRC Decision

The WRC voted unanimously to approve the MWRA application for an interbasin transfer of wastewater via the WESR project with conditions (a) through (j) as noted below. This decision is based on a thorough review of the application according to the provisions of the Interbasin Transfer Act and regulations, as well as guidelines developed for interpreting the Interbasin Transfer Act's criteria as they apply to wastewater.

Criterion 1: That an environmental review pursuant to the Massachusetts Environmental Policy Act (MEPA) is complete

MWRA's application meets this criterion. MEPA requirements have been met. The Final Environmental Impact Report (FEIR) for the WESR project was certified by EOEA on August 17, 1987, and a supplemental FEIR for the Southern System Hydraulic Study was certified on October 2, 1987. The supplemental FEIR certificate stated that "the MWRA shall submit a finding pursuant to section 61 on the I/I removal program and shall provide periodic updates on progress to the Secretary of Environmental Affairs and to DEQE/DWPC" (Attachment 1).

Criterion 2: That all reasonable efforts have been made to identify and develop all viable sources in the receiving area.

In the case of a wastewater transfer, viable sources are interpreted to mean alternative cost-effective, technologically feasible, environmentally sound measures for wastewater management which would discharge the treated effluent into the basin where the receiving area is located.

MRWA's application meets this criterion. The application includes discussion of the impact of satellite treatment facilities placed at several locations in the Charles River basin, based on the USEPA Region I report of 1984, Boston Harbor Supplemental Draft Environmental Impact Statement, Evaluation of Satellite Advanced Wastewater Treatment Facilities, Appendix B. That report found a mid-Charles advanced wastewater treatment plant "represents an unacceptable risk with respect to the protection of water supply sources".

These findings were confirmed in the February, 1986 Final Supplemental Environmental Impact Statement on Wastewater Conveyance Systems for Boston Harbor. Thomas C. McMahon, Deputy Commissioner of DEQE, endorsed these findings in his letter of November 11, 1988 to Elizabeth Kline, Executive Director of the WRC (Attachment 2). The Division of Water Pollution Control (DEQE) was asked to determine if the MWRA's application adequately discussed the issue of viable sources. Mr. McMahon stated that the discussion of viable sources by the MWRA was adequate.

The WRC has expressed concern about possible future expansion of the service area, specifically that the increased capacity resulting from the WESR project could lead to new hook-ups and an increase in projected flows. To address this concern, and because it is important to maintain sufficient reserve capacity in the proposed interceptors to reduce the overflow problem in the future, the staff recommends the following conditions be placed on the application's approval:

(a) In accordance with the MWRA's enabling legislation prohibiting the expansion of the sewer service area, this project will serve only those towns and cities currently being served by the existing system (Needham, Wellesley, Natick, Framingham, and Ashland), except as provided in the MWRA Policy and Procedures for sewer connections serving property partially located in a non-MWRA Community (October 29, 1986) (attachment 3).

(b) The MWRA will install master flow meters at appropriate locations to monitor wastewater flow as mandated by DWPC.

(c) The MWRA will notify the DWPC when eighty percent (80%) of the capacity of its permitted discharge volume is reached, as per DEQE regulations.

<u>Criterion 3: That all practical measures to conserve water have been taken in the receiving area.</u>

In the case of a wastewater transfer, this criterion is interpreted to mean measures to reduce water transfer out of basin including I/I reduction and water conservation.

The MWRA's application meets this criterion. The DEQE/DWPC has issued Administrative Orders to Wellesley and Needham to reduce I/I. These orders require that Wellesley and Needham submit semi-annual reports to DEQE/DWPC summarizing inspections and repairs performed and the estimated quantity of I/I removed as a result of the sewer maintenance program and the I/I reduction program. The MWRA has agreed to a goal of eliminating 5.7 mgd of I/I from the Framingham-Wellesley system prior to the proposed system going on line, and to use approved management practices to keep the reduced I/I contribution from increasing. Through the MWRA municipal wastewater connection permit, the MWRA monitors Wellesley's and Needham's progress in I/I removal.

In order to insure continuing progress on I/I reduction, staff recommends the following conditions be placed on the application's approval:

(d) The MWRA and Needham and Wellesley will implement an industrial pre-treatment program to prevent weakening of pipe linings.

(e) The MWRA will institute measures to control hydrogen sulfide generation and other conditions that may weaken the lining of the pipes.

(f) All pipes, structures, and manholes will be periodically inspected to detect leakage, and Needham and Wellesley will meet the MWRA operation and maintenance standards.

(g) Maximum protection measures must be taken in Zone II aquifer areas including pre-stressed concrete cylinder pipe or other pipe of equivalent capability, water-tight manhole covers, and structures.

(h) Within one year of the project's completion, the MWRA will carry out a television inspection of the interior of the pipe running through Zone II areas. A television inspection will be carried out at least once every five years in Zone II areas in addition to the MWRA's monitoring and leak detection efforts. The MWRA will report annually to DEQE/DWPC on these efforts.

(i) To further reduce inflow, the MWRA will work toward a goal of 100 percent removal of illegal connections.

Regarding water conservation, the MWRA has instituted a long range water supply program for its member communities which include Wellesley and Needham. This program is designed to achieve water conservation. The program includes:

1. Leak detection and repair in MWRA pipes
2. Leak detection for community owned pipes
3. Increasing meter accuracy and flow accounting
4. A pilot study of domestic service retrofit
5. Increasing industrial and other non-domestic conservation through technical information and assistance
6. School curriculum development and dissemination
7. Public information and awareness programs.

In addition, Wellesley and Needham have prepared and submitted local water conservation plans as part of the application. These plans were well prepared and meet the WRC criteria for approval.

In order to insure continuing progress on water conservation, the staff recommends the following condition be placed on the application's approval:

(j) Needham and Wellesley will implement their local water conservation plans; the MWRA will provide appropriate technical assistance to these communities to carry out these plans. The MWRA will report annually to the WRC on the towns' progress and on the progress of MWRA system conservation efforts.

<u>Criterion 4: That a reasonable instream flow in the river from which the water is diverted is maintained.</u>

The principle of this criterion is to protect current and future uses and users of the resource and consider the impact of the proposed transfer on the streamflow-dependent ecosystems and water uses.

The MWRA's application meets this criterion. This project will result in an interbasin transfer of 0.8 mgd from the Charles basin which

represents less than one half of one percent of the average flow of the river. During the lowest annual flow period, in August, the proposed interbasin transfer would be approximately 1.6 percent of the total volume in the river. It should be noted that the 0.8 MGD transfer would most likely occur during a storm event, not during low flow. Also, these figures are based on a "worst case scenario" which assumes that the volume of water leaving the river is directly proportional to the volume of water leaving the basin as wastewater.

In the Concord basin, the proposed transfer of 0.2 mgd represents approximately one quarter of one percent of the average annual flow of the river. Based on these figures, staff believes the effect on streamflow and water-dependent uses represented by the proposed interbasin transfer is negligible. The proposed pipe will be able to convey a greater volume of wastewater, thereby improving the water quality of both the river and the aquifer.

Criterion 5: That the communities and districts in the receiving area have adopted or are actively engaged in developing a local water resources management plan.

The MWRA's application meets this criterion. Wellesley and Needham have complied with the requirements for local water resources management planning.

Criterion 6: That the Commission shall consider the impacts of all past, authorized or proposed transfers on the basin.

The MWRA's application has met this criterion. The Interbasin Transfer Act applies only to the potential to transfer additional volume above the 1984 hydraulic capacity with surcharging. Therefore, this project does not remove a significant amount of water from the basin and does not impact past, authorized or proposed transfers.