From The Chairman

It is with tremendous pleasure and pride that I submit to you the 1976 edition of the New England Interstate Water Pollution Control Commission’s Annual Report. Because our fiscal year has been changed from July 1 to October 1 to conform with the federal fiscal year, this annual report covers a 15-month period.

As coordinators of the interstate water pollution control efforts of the six New England states and New York state, the Commission has been in the forefront of the fight to eliminate pollution from the waterways of our Compact area and we are proud of the achievements we have made over the years.

Dealing with complex federal laws and bureaucratic federal agencies has long been a most arduous and frustrating task for officials in our seven Compact states. But the Commission, since its inception in 1947, has recognized that these problems must be addressed if pollution is to be abated. In FY-76, the Commission periodically brought together state and federal officials from the regional and Washington levels to find solutions to existing problems and to iron out potential problems before they developed.

Implementation of the construction grants program under the Federal Water Pollution Control Act of 1972 (Public Law 92-500) was one of the most important topics of concern during the past fiscal year. With due consideration to the complexities of P.L. 92-500, its voluminous regulations and the more than $2 billion to obligate by September 30, 1977, the Commission held several meetings devoted exclusively to the construction grants program. It was through these meetings that problems were identified and agreements were developed in an effort to accelerate the pace of the program and thereby assure that all funds available to the Compact-member states would be obligated by the September, 1977 deadline. A unique approach was instituted with regard to Massachusetts whereby additional funds were made available to the Commission to retain a consultant and hire a short-term staff to assist the Massachusetts Division of Water Pollution Control in processing its more than 280 projects. There is every expectation now that the Commonwealth will be able to obligate all of the $574 million allocated to it under P.L. 92-500.

As chairman, I am happy to say that through our continued liaison with members of Congress as well as our representation on various committees and task forces, the Commission has been able to present a generally unified position for its member states on water pollution control issues while also presenting specific state viewpoints when warranted. These efforts have been of benefit to the states in the administration of their respective programs.

This report sets forth in more detail the many activities and functions of the Commission from July 1, 1975 to September 30, 1976.

I know I speak for each and every Commissioner, both past and present, in expressing my appreciation to the many agencies, organizations and individuals who have contributed much of their time and effort to the various water pollution control programs throughout the Compact area. The Commission is also grateful for the support it continues to receive from the governors, legislatures and administrative officials of all seven Compact-member states.

This cooperation is important to the effective progress of water pollution control and we look forward to continued cooperation in FY-77.

Charles E. Dickerson
Chairman
NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION
29th ANNUAL REPORT

CONTENTS
ORGANIZATION 2
ADMINISTRATION 6
TECHNICAL ADVISORY BOARD 8
WATER QUALITY ATTAINMENT 10
PUBLIC INFORMATION 11
TRAINING 12
RESEARCH AND SPECIAL PROJECTS 14
LEGISLATION 16
CONSTRUCTION 19
FINANCIAL REPORT 25

Cover photo courtesy of Environmental Protection Agency
Organization

The Officers

CHAIRMAN
Charles E. Dickerson

VICE CHAIRMAN
Eugene J. Dowling

TREASURER
George L. Burke

The Commissioners

Connecticut

David R. Brown
Shelton
(1973 - )

George L. Burke, P.E.
Consulting Engineer
(1957 - )

Eugene J. Dowling, P.E.
Consulting Engineer,
Middletown
(1971 - )

William R. Adams, Jr.,
P.E., Commissioner,
Department of Environmental Protection
(1972 - )

Norman K. Ferguson
Hanover
(1961 - )

Joseph N. Gill
Commissioner,
Department of Environmental Protection
(1975 - )

Douglas S. Lloyd, M.D.
Commissioner,
Department of Health
(1973 - )

Robert Jaibert
Attorney
Fort Kent
(1971 - )
No Photo Available

Maine

David E. Smith
Commissioner,
Department of Human Services
(1975 - )

Clarence J. Williams
Old Orchard
(1969 - )
Massachusetts

John C. Collins, P.E.
Lawrence
(1976 - )

Jonathan E. Fielding, M.D.
Commissioner,
Department of
Public Health
(1975 - )

Joan R. Flood
Lenox
(1976 - )

David E. Standley, P.E.
Commissioner,
Department of
Environmental
Quality Engineering
(1976 - )

John D. McDonald, P.E.
Consulting Engineer,
Springfield
(1965 - )

Louis A. Giarrusso
Lawrence
(1969 - 1976)

William J. Bicknell, M.D.
Commissioner,
Department of
Public Health
(1972 - 1975)

Francis B. Mahoney
Great Barrington
(1967 - 1976)

New Hampshire

Donald C. Calderwood, P.E.
Commissioner,
Water Supply &
Pollution Control
Commission,
Nashua
(1963 - )

William A. Healy, P.E.
Executive Director,
Water Supply &
Pollution Control
Commission
(1951 - )

Robert J. Hill
Chairman,
Water Supply &
Pollution Control
Commission,
Canterbury
(1972 - )

George M. McGee
Chairman,
Water Resources Board
(1965 - )

James Varotsis
Commissioner,
Water Supply &
Pollution Control
Commission,
Portsmouth
(1974 - )
New York

Peter A. A. Berle
Commissioner, Department of Environmental Conservation (1976 - )

Morris M. Cohn, Sc.D.
Consulting Engineer, New York City (1949 - 1975) Deceased

Milton J. Neubauer
Chemical Engineer, Mechanicville (1949 - )

Ogden Reid
Commissioner, Department of Environmental Conservation (1975 - 1976)

Eugene F. Seebald, P.E.
Director, Division of Pure Waters, Department of Environmental Conservation (1974 - )

Stanley P. Spisiak
Elma (1974 - )

Walter C. Anderson
Engineering Consultant, Cranston (1959 - )

Nelson Marshall, Ph.D.
Professor of Oceanography, University of Rhode Island (1968 - )

Rhode Island

Charles E. Dickerson
Marina Operator, Warwick (1963 - )

Carleton A. Maine, P.E.
Chief, Division of Water Pollution Control (1974 - )

Walter J. Shea, P.E.
Providence (1947 - )
Vermont

William N. Jacobus, Jr., Engineering Manager, Essex Junction (1973 - )
Edward F. Kehoe, Commissioner, Department of Fish & Game (1965 - )
Gordon R. Pyper, Ph.D. Commissioner, Department of Water Resources (1973 - )
Anthony Robbins, M.D. Commissioner, Department of Health (1973 - 1976)
Peter A. Robinson, City Manager, Newport (1975 - )

NEW ENGLAND REGIONAL WASTEWATER INSTITUTE

Anthony L. Gordon, Instructor, (1975 - )
Kirk J. LaFlin, Instructor, (1975 - )
Ronald R. LeTarte, Instructor, (1975 - )
George M. Kelley, Instructor, (1975 - 1976)
Stephen A. MacDonald, Instructor, (1974 - 1975)

A. A. Baker
Director (1969 - 1975)

Donald P. Johnson
Instructor - Director (1974 - )

NEIWPCCC STAFF

Frederick K. Schauffler, Environmental Engineer, (1974 - )
Stephen E. Poole, Sanitary Engineer, (1975 - )
Janet C. Larson, Comptroller, (1971 - )
Robert A. McCarthy, Director of Public Affairs, (1976 - )
J. Patricia Conway, Senior Staff Secretary, (1975 - )
Patricia L. Conti, Staff Secretary, (1976 - )
Lea A. Nemanich, Director of Public Affairs, (1975 - 1976)

Alfred E. Peloquin, P.E.
Executive Secretary (1967 - )
Administration

By act of Congress on July 31, 1947, the New England Interstate Water Pollution Control Compact was established, and the coordinated efforts to control water pollution in New England and the adjacent portions of New York State were underway. The Commission’s ever-expanding responsibilities now include: water quality management, surveillance, legislation review, training programs, public education and information, and special projects.

Commissioners

Thirty-five Commissioners, five from each of the Compact-member states, administer the Compact. These Commissioners, who are either ex officio or appointed by their respective governors, represent the state water pollution control agencies, health departments, fisheries or conservation groups, municipal and industrial interests, and the general public. The tasks of coordination and program development rest with the Executive Secretary, working under the guidance of the full Commission and with the assistance of the Technical Advisory Board.

The Commission elects officers annually and rotates the Chairmanship among the states. For fiscal year 1976, Charles E. Dickerson (R.I.) served as Chairman, Eugene J. Dowling (Conn.) as Vice Chairman, and George L. Burke (Conn.) as Treasurer.

Membership Changes

The following became ex officio Commissioners of the NEIWPCC:

David E. Smith, Commissioner, Human Services, of the Maine Bureau of Health, succeeded Dr. Dean Fisher.

David E. Standley, Commissioner, Massachusetts Department of Environmental Quality Engineering, succeeded Joseph Brown, Chairman, Water Resources Commission, due to reorganization within the Commonwealth;

Jonathan E. Fielding, Commissioner, Massachusetts Department of Public Health, succeeded William J. Bicknell; and

Peter A. A. Berle, Commissioner, New York State Department of Environmental Conservation, succeeded Ogden Reid.

During the fiscal year, Massachusetts Governor Dukakis appointed Joan R. Flood to succeed Francis Mahoney, and John C. Collins to succeed Louis Giarussoro.

In New York, a vacancy was created by the death of Commissioner Morris M. Conn.

Meetings

The Commissioners meet quarterly to discuss issues and draft policy relative to water pollution control and abatement in the Compact area. The following summarizes the major topics covered at the meetings:

* Review status of special projects and in-house activities
* Review status of subcommittee action on wastewater treatment plant design deficiencies and oversights
* Implementation of P.L. 92-500 addressing such topics as: State construction grants responsibilities and obligations, needs survey, vessel pollution regulations, possible amendments to P.L. 92-500, program administration grants, state water quality standards, environmental impact statements, interstate agency funding
* Status of the proposed pulp mill for the Connecticut River Basin
* Status of proposed nuclear power plant in Seabrook, New Hampshire
* Discussion of pollution problems in the French River (Mass. - Conn.)
* Review of technical material for printing as technical reports (guidelines for septage handling and disposal, transient vehicle waste study data, algae control pamphlet, surveillance)
* Review New York and Vermont basin plan on Lake Champlain (water quality management plan)
* Possible NEIWPCC functions under the Safe Drinking Water Act
* Status of Commission administrative activity in Massachusetts’ regional planning agencies stream sampling program
* FY-76 fifth quarter extension (or “fiscal year transition quarter”)
* FY-77 program plan
* FY-77 budget
* Status of “AI West Method” of activated sludge process control training program
* Status of funding for construction of the proposed wastewater wing at NERWI
* Status of four contracts the NEI is administering for the Commonwealth of Massachusetts: New England Regional Commission (NERC)/Division of Water Pollution Control (DWPC), construction grants management program, 208 designated areas, 208 non-designated areas

Discussions, Meetings, and Activities

In addition to the regularly scheduled meetings of the Commission and the Technical Advisory Board, the Commission staff and state water pollution control personnel participated in a wide variety of meetings, conferences, and other activities related to water pollution abatement and control. Below is a summary of these activities:

* Special meeting re: phosphorus removal from Lake Champlain
* MDC/Clinton problem on user charge-cost recovery payments (a Nashua River Program activity)
* Region I EPA, the member states and consulting engineer on regional needs survey
* Special meeting on non-point source pollution and 208 (areawide) planning
* EPA technology transfer seminars

"Water Cleanup and the Land" seminar

* Nashua River Program (NRP)/Program Advisory Committee (PAC) follow-up meetings — status of river cleanup after termination of NRP
* Mass. Selectmen's Association — annual meeting and legislative conference
* University of New Hampshire at Durham — sampling/analysis of the NEI's surveillance program
* EPA sponsored meeting involving the preparation of environmental impact statements for MDC sludge disposal
* Congressional breakfast — congressional delegation & heads of water pollution control agencies from Compact-member states — means of fully informing legislators of progress & problems in water pollution abatement in Compact area
* Speaking engagements — public information & education — re: status of pollution and pollution abatement; prospectus for New England's rivers; new and innovative technology; training and careers
Technical Advisory Board

Membership

CHAIRMAN
David L. Clough

Hagop Boghosian, P.E.
Principal Sanitary Engineer,
Division of Water Supply &
Pollution Control,
Rhode Island
Department of Health
(1974 - )

David L. Clough, P.E.
Director,
Water Quality Division,
Vermont Department of
Water Resources
(1973 - )

Merwin E. Hupfer, P.E.
Director of Water Compliance,
Connecticut Department of
Environmental Protection
(1967 - )

Thomas A. LaCava, P.E.
Chief Engineer,
New Hampshire Water Supply
& Pollution Control
Commission
(1963 - )

Raeburn W. Macdonald, P.E.
Chief Engineer,
Maine Department of
Environmental Protection
(1955 - )

Thomas C. McMahon, P.E.
Director,
Massachusetts Division of
Water Pollution Control
(1966 - )

Lester A. Sutton, P.E.
U. S. Environmental
Protection Agency
(1971 - )

Ernest F. Trad, P.E.
Associate Director,
Division of Pure Waters,
New York State
Department of
Environmental Conservation
(1975 - )

David C. Wiggin, P.E.
Director,
Environmental Health Services,
Connecticut State Department
of Health
(1965 - )
The Technical Advisory Board (TAB) of the Commission acts as the technical review committee that oversees the development and finalization of all of the Commission’s technical and semi-technical activities, whether developed by the staff or by outside consultants. The TAB consists of the agency director or chief engineer of each of the Compact-member states, a representative from the Connecticut Department of Health and from the United States Environmental Protection Agency (EPA). The TAB also reviews and recommends proposed research projects that the Commission will either fund or undertake utilizing staff or outside resources. State agency staff members are frequently designated by the state’s TAB member to serve on subcommittees and task forces to address specific issues related to water pollution control. During fiscal year 1976, Mr. David Clough of Vermont served as TAB chairman.

Meeting in conjunction with the full Commission, on the regular quarterly basis and on more frequent intervals when necessary, the TAB considered and acted on the following topics during the report year:

* New York Research Report #31: Phosphate Removal by Sands and Soil
* Impact of Control of Various Algae in Surface Waters of New Hampshire
* Guidelines for Septage Handling and Disposal
* Wastewater Treatment Facilities Design Deficiencies and Oversights
* Waste Load Allocation in Interstate Waters
* 1976 Wastewater Facilities "Needs Survey"
* Wastewater Treatment Facilities Staffing Study
* New York 303(e) Plan for Lake Champlain
* Instream Aeration in the Nashua River Basin
* Groundwater Monitoring at Septage Disposal Sites
* Treatment Plant Operator Training by the "Al West Method"
* Finalization of a Study of Chironomid Larvae in the Northeast by New York State
* New York Research Report #29: Chemical and Clarifier Selection
* Water Quality Index for New England

*Water Quality Standards Revisions
* Transient Recreational Vehicle Waste Disposal Study
* Development of a New England Regional Sludge Policy

In addition to the above projects, the TAB was actively involved in reviewing potential amendments to P.L. 92-500, the Federal Water Pollution Control Act Amendments of 1972.

Fiscal Year 1976 saw the Commission staff continue its in-house study of the handling and disposal of septage. Here, a septage pumping truck, after pumping out a number of septic tanks, empties its collection of septage into a wastewater treatment facility.
Water Quality Attainment

Since the arrival of the Federal Water Pollution Control Act of 1972 (Public Law 92-500), billions of dollars worth of additional municipal treatment facilities have been constructed. Many more treatment works are now or will soon be under construction. At the present time, statistics show that nearly half of New England’s main stem river and tributary mileage is not meeting the national goal of fishable-swimmable waters, where attainable.

This could be the result of a number of factors, including:

— major municipal and industrial discharges with inadequate treatment,
— urban runoff from densely populated areas,
— combined sewer overflows,
— and, in some cases, non-point source pollution.

Of course, this is not to say our money has been spent in vain. Many specific examples of localized clean-ups and subsequent water quality improvements are evident throughout New England. One such example is the Nashua River which is finally running clear after years of multi-color flow — the result of paper mill discharge. It is important to remember that a single raw discharge or an improperly treated major discharge may cause violations of water quality standards for many miles.

A surveillance program has proven to be an effective way to monitor the improvements of water quality resulting from the construction of treatment facilities. The data collected from the program are made available through the concerted efforts of the Compact-member states and the Environmental Protection Agency (EPA) and next year will be published in a separate report. Past experience indicates that monitoring is very costly with regards to manpower and equipment, but it is well worth the cost if the states are to develop programs that will achieve water quality that is consistent with approved classifications.

During this past year, the states and EPA have improved the capabilities of their water quality monitoring networks and have thus produced a more meaningful analysis of water quality trends. In general, it can be said that the water quality either improved or remained the same during the year. The most persistent causes of poor water quality continue to be low dissolved oxygen levels and excessive coliform bacteria levels, while pH violations were an occasional occurrence during the past year.

With many more treatment works expected to be completed in the coming year, a noticeable improvement should be realized, but the fight for clean water will not end when these facilities are completed. The proper operation and maintenance of treatment facilities is also essential.

And efforts must continue to be directed toward other causes of pollution such as combined sewer overflows, storm water outfalls and non-point sources, including agricultural runoff and landfill leachate. In most cases, these sources of pollution are more costly and difficult to control and treat.

In addition to the water quality improvements that are anticipated next year, the Commission also hopes to improve its means of publicizing those improvements. Plans include the use of a water quality index to be published in the Commission’s quarterly newsletter, AQUA NEWS.
Public Affairs

Maybe it was the news that billions of dollars are being spent each year by the government to clean our nation’s waterways, or maybe it was the sight — perhaps even the smell — of a pollution-choked river or stream. The reason is not important. The fact is that the public has taken a genuine interest in the problem of water pollution and that’s encouraging.

This is a major achievement in the fight to keep our waterways free of pollution. Even with the many technological advances that have occurred during the past several years, few are as important as public participation.

But with increased participation also comes an increased demand for information.

That is why in 1974 the Commission decided to initiate a comprehensive public information program through the Boston University School of Public Communications. Serving on a full time semester basis, graduate students from the Division of Public Relations were employed by the Commission to implement and develop such a program. During the fiscal year, as the program continues to expand, NEI has hired a permanent full time public affairs director while retaining the BU students on a limited basis.

AQUA NEWS, the Commission’s quarterly newsletter, is one of NEI’s most identifiable publications, having been established long before the public affairs program was ever implemented. Distributed throughout the water pollution control field, AQUA NEWS offers a wide variety of news items, from legislative updates to job advertisements to new technological developments in the field.

NEIWPC also provides pamphlets, brochures, books, technical reports, slide shows and films which are available to the general public for both professional and non-professional audiences. Members of the Commission staff are also available to speak to special interest groups, while the portable display unit and semi-portable audio-visual display have proven to be valuable additions to a number of environmental programs.

The Commission’s public affairs program has seen some major developments during the past fiscal year. One of the most important was its environmental education program. Launched in September, 1975, every secondary school in New England received from the Commission an informational brochure, career information and a list of science project ideas to be used during the school year. In response to this mailing, the Commission has received numerous requests for publications, films and slide shows for classroom use.

NEI was also partly responsible for a series of 12 seminars to help acquaint New England municipal officials with provisions of the Water Pollution Control Act of 1972 (Public Law 92-500). Financed by a grant from the Environmental Protection Agency (EPA), the Commission contracted with the New England Municipal Center (NEMC) to develop the year-long program.

During the spring of 1976, the Commission contracted with the Massachusetts League of Cities and Towns to present three additional meetings which were intended to inform Massachusetts municipal officials of the provisions of P.L. 92-500, concentrating specifically on the construction grants program.

And during the following summer, NEI’s public affairs program undertook an intensive information campaign to explain to the citizens of Clinton, Mass. the effect P.L. 92-500’s sewer user charge would have on their community. The town was faced with a very complicated and confusing situation because implementation of the user charge in Clinton would have created a conflict with earlier state legislation requiring the Metropolitan District Commission to treat the town’s waste at no cost to the town. After considerable public discussion, the townspeople accepted a compromise solution and necessary legislative amendments are being developed.

The following publications were published during FY-76:

- TR-19: A Guide to Chemical and Clarifier Selection for Wastewater Treatment
- Copper Sulphate: Its Use As An Algaicide
- TGM-1: Guideline for Septage Handling and Disposal
- A Procedural Guide for the Massachusetts Water Pollution Control Construction Grant Program
- Career Opportunities in Water Pollution Control
- Four Keys to New England Water Quality (prepared jointly by NEIWPC and EPA Region I)
- A Pictorial Review of Wastewater Treatment Facilities and Equipment
- For Your Information ... From NEIWPC (Green Dots brochure)
Training

Construction of water pollution control facilities is a major investment for any community. Once completed, these facilities can provide a community with effective wastewater treatment for many years, but only if they are properly maintained and operated. That is why NEIWPCCC has taken such great pains to develop progressive training programs for wastewater treatment personnel. Fiscal Year 1976 was no exception.

New England Regional Wastewater Institute

The New England Regional Wastewater Institute, founded by the Commission in 1969, had another productive year during FY-76. Located on the campus of Southern Maine Vocational Technical Institute in South Portland, Maine, NERWI provides academic and technical training in the wastewater treatment field.

Perhaps the most noticeable event during the fiscal year was the retirement of NERWI Director A. A. Baker who, six years ago, set up the institute and became its first director. Donald P. Johnson, Jr., a NERWI instructor, was named acting director by the Commission shortly after Mr. Baker's departure in December of 1975. His appointment became official in September of 1976.

In spite of the turnover of personnel at NERWI, 30 students graduated from the Class of 1976 nine-month training program. Thirty-six students had enrolled in September of 1975.

Two short courses were offered during the summer of 1976. They included a course in Wastewater Pumps and Pump Maintenance in which 27 students enrolled and a course in Activated Sludge Process Control in which 35 students enrolled. EPA also provided technical assistance in the second course.

Training directors from the Commission's Compact states met at NERWI during the month of May to discuss the relationship between NERWI training programs and the existing or planned training programs of the states.
FY-76 was also the year in which NERWI's Mobile Training Facility made its first trip to New York. The mobile van, which has traveled to treatment plants and training sites throughout New England for three-day training sessions, visited Long Island in October of 1975 for its first contact with New York operators. Since its purchase in October of 1971, the unit has traveled in excess of 75,000 miles, offering on-site training at treatment facilities.

Special Programs

During FY-76, the Commission received two grants from the Environmental Protection Agency (EPA) to administer special short-term training programs in water pollution control. The first was a $10,007 grant to develop a three-part training program in activated sludge process control techniques for treatment plant operators. This training will be made available as part of the regular nine-month program at the New England Regional Wastewater Institute (NERWI) as well as through the Mobile Training Facility (MTF) and a summer short course. The funds will also be used to modify the NERWI package treatment plant so it can be used as part of this training effort. In addition, the grant includes provisions for follow-up evaluation to determine how well the trainees are able to apply the techniques presented in the program.

A second EPA grant, for $10,000, was received to sponsor a course in innovative lab techniques in wastewater treatment. This short course on modern instrumental analysis will be developed in conjunction with the Massachusetts Division of Water Pollution Control at its training center in Lowell, Mass. This course will include hands-on training in the use of an atomic absorption spectrophotometer and a total organic carbon analyzer. Trainees will also learn how to interpret and analyze data from these instruments as well as learn how to apply this data in the operation of the treatment plant.
Research And Special Projects

The Commission directed its research and special projects efforts into four major areas during the past fiscal year, namely water quality studies, wastewater treatment, public and municipal official education and state agency support. Some of these studies were carried over from the prior fiscal year, but a majority are newly initiated. The work being conducted is evenly distributed between the Commission staff, outside consulting firms, private individuals and state agencies and is summarized below.

Water Quality
Ashburnham, Massachusetts Study

A major study, conducted over several years in Ashburnham, Massachusetts, to determine the impact of rural runoff on downstream water quality, was completed. This report concluded that stream degradation was due to an excessive number of failing septic tank systems in the area and not to organic or other pollutant material contained in surface runoff.

In-Stream Aeration

An engineering report was prepared on the feasibility and the methodology of post-aerating the effluent from the Fitchburg East Wastewater Treatment Plant. This study was conducted as a follow-up to a recommendation in the "Water Quality Management Plan for the Nashua River Basin" prepared under the Nashua River Program. The report presented the economics and benefits of stream aeration using a supersaturated wastewater effluent as the source of additional oxygen.

Water Quality Index

An ongoing water quality monitoring study of the Nashua River was conducted by the staff working in conjunction with Cushing Academy. This two-year project is a trial application, in New England, of the Water Quality Index (WQI), developed by the National Sanitation Foundation (NSF). The purpose of the study is to evaluate the WQI, its parameters, weights and other factors and eventually develop a similar index or recommend the NSF index for use on all New England streams. Both studies in the Nashua River Basin were conducted as part of the Commission's special interest in that interstate basin.

Eutrophication Assessment

One other water quality study was performed by the New Hampshire Water Supply and Pollution Control Commission on Lake Winnisquam. This study addressed the background water quality of the lake to determine the stage of the eutrophication process. It is conducted as part of a long term clean-up project of the lake and should be useful in assessing change and providing data for future decision making on water quality management.

Wastewater Treatment

During fiscal year 1977, two studies relating to treatment plant operation were completed. One study explored the feasibility of establishing treatment plant service districts throughout a state to improve treatment plant operation efficiency. For the pilot state, New Hampshire, cost analyses indicated that this approach would be economically infeasible. In this instance, the report recommends alternative approaches.

With the emphasis at the Federal level on limiting grant eligibilities for wastewater treatment works to a 10-year design life for the plant and a 20-year design life for interceptors as opposed to the 25/50 years which is current practice, the Commission contracted for an analysis of the cost effectiveness of the limited design life. The report on this study is to be complete in fiscal year 1977.

The Commission staff has continued its in-house study of the handling and disposal of septic tank wastes and has initiated a groundwater sampling program to study any possible impact of septage lagoon leachate on groundwater. The groundwater sampling will continue through FY-77. During fiscal year 1977 attempts will also be made to treat lagooned septage by means of the physical-chemical technique of the "Dynactor" system. During the report year, the Commission did publish guidelines for septage handling and disposal based on current practices.

To provide guidance in the design of treatment works, the Commission published a report on chemical and clarifier selection for wastewater treatment. This publication is based on work done on this problem by the New York Department of Environmental Conservation.

Aquatic Weeds

Recognizing the continuing management problems related to the control of aquatic weeds and vegetation, the Commission published a report on work done in this area in the State of New Hampshire. The report addresses the use of copper sulphate as a weed control mechanism.

Other Activities

In addition to the above activities, a series of municipal education seminars was conducted throughout New England to acquaint elected officials with the complexities of state and federal requirements in regard to the construction grants program. A separate series of seminars was held at several locations in Massachusetts and dealt in more detail with such topics as treatment plant operation and maintenance, discharge permits and financing of treatment works. In the same vein, but with the general public as the audience, the Commission, at EPA's request, sponsored the production of a film documenting the clean-up of Lake Winnisquam in New Hampshire.
A continued area of involvement for the Commission is that of state support. The Commission's efforts in the area of 208 planning were continued in Massachusetts, with an additional support role in the planning for non-designated areas within the Commonwealth as well as the water quality monitoring support begun last fiscal year. A total of fourteen people are working full time on the Interstate payroll under contract to the Massachusetts Department of Environmental Quality Engineering.

Using state, federal and New England Regional Commission funds, the Commission has been able to support the construction grants program in both Connecticut and Massachusetts by providing added temporary staff to each state to assist in the review and processing of construction grants projects and other activities. This support comes at a time when both states are hard pressed to commit, within the remaining time allowed, the total amount of EPA construction grant funds allocated to them.

As a result of this year's special projects, several new publications are available from the Commission. They include:

TR-19 A Guide to Chemical and Clarifier Selection for Wastewater Treatment (Technical Advisory Board of the New England Interstate Water Pollution Control Commission — 1976)

TGM-1 Guidelines for Septage Handling and Disposal (Commission Staff Report — 1976)

Copper Sulphate: Its Use As An Algicide (Professor Robert F. Normandin, Ph.D. — St. Anselm's College — 1976)

The following is a current list of all other available reports:

TR-7 A Simplification of Textile Waste Survey and Treatment (Wesleyan University — 1958)

TR-9 A Study of Small Complete Mixing, Extended Aeration, Activated Sludge Plants in Massachusetts (Massachusetts Health Research Institute, Inc. — 1961)

TR-12 White Water Wastes from Paper and Paperboard Mills — Pollution Sources and Methods of Treatment (Wesleyan University — 1963)

TR-13 The Effect of Industrial Wastes on Sewage Treatment (Wesleyan University — 1965)

TR-15 Controlling the Effects of Industrial Wastes on Sewage Treatment (Wesleyan University — 1970)

TR-16 Guides for the Design of Wastewater Treatment Works (Technical Advisory Board of the New England Interstate Water Pollution Control Commission — 1971)

TR-17 Uniform Guidelines for the Prevention and Control of Oil Spills and for Oil Terminal and Vessel Handling of Petroleum and Petroleum Products (Technical Advisory Board of the New England Interstate Water Pollution Control Commission — 1971)

TR-18 Uniform Guidelines for the Control of Wastes and Harmful Effects Attributable to Watercraft and Floating Structures on Inland Fresh Waters (Technical Advisory Board of the New England Interstate Water Pollution Control Commission — 1973)
Legislation

FEDERAL LEGISLATION

On Oct. 18, 1972, Congress enacted the Federal Water Pollution Control Act Amendments in an attempt to rid our nation's waterways of pollution in the most effective way. The law, better known as Public Law 92-500, sets forth in detail both the long range and short range goals for pollution abatement as well as the means to accomplish these goals.

As with previous legislation, it was hoped that P.L. 92-500 would be the definitive answer to the problem of water pollution. But once again, like its predecessors, the law was imperfect. It had its flaws, its ambiguities and its conflicting interpretations.

In fact, P.L. 92-500 was viewed by many as being one of the most complex pieces of legislation ever to emerge from Congress. As a result, attempts have been made repeatedly to amend the law — but with only limited success.

However, Congress did consider major amendments in 1976. While there were numerous amendments submitted to the various Congressional committees, none made it to either the floor of the House or the Senate until June, 1976.

The first was a House bill, known as HR 9560, which passed the House on June 3, 1976. Among the many provisions of this bill was an appropriation of $17 billion for the construction grants program during FY 77, 78 and 79.

Three months after HR 9560 passed the House, the Senate passed its own bill in an effort to amend P.L. 92-500. That bill included a $5 billion appropriation for the construction grants program for FY-77.

But money was not the primary source of the controversy between the two bills. It was something called Section 404, which governs permits for the disposal of dredge or fill material.

The Senate wanted to restrict the jurisdiction of the Army Corps of Engineers to "traditionally navigable waters," which includes only those waters that have been traditionally regulated by the Corps. This would exempt the Corps from jurisdiction over certain farming, forestry, mining and ranching activities.

Under 404, the Senate also wanted to allow the Corps to delegate permit authority for waters under its jurisdiction to all states that are authorized to administer the National Pollutant Discharge Elimination System (NPDES).

The House version of Section 404 wanted to restrict the Corps’ jurisdiction to strictly-defined "navigable waters and adjacent wetlands." The new definition would restrict navigable waters to mean "all waters which are presently used or are susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce . . . ."

The House bill also would have allowed the Corps to delegate permit authority to NPDES-authorized states for only “adjacent wetlands.”

Representatives from both houses met in a conference committee during late September to try to iron out the differences between the two bills, but it was expected that Section 404 would keep the two sides apart. As the fiscal year ended, that is exactly what happened. No amendments to P.L. 92-500 were enacted.

STATE LEGISLATION

Vermont

Water pollution control legislation in the State of Vermont during the 15-month fiscal year was confined to one appropriation.

The state legislature appropriated $3.5 million to the Agency of Environmental Conservation, Department of Water Resources, to be used as state assistance in the municipal pollution control program. Funds were available by July 1, 1976.

Massachusetts

Massachusetts legislators passed an act designed to further regulate procedures for the protection of wetlands. This law allows the public to petition the Department of Environmental Quality Engineering (DEQE) to make a determination of the environmental impact on wetlands that would occur as a result of a proposed project.

An act was also passed directing the DEQE to control the issuance of permits for disposal of dredged material in order to correct any serious threat to the marine environment or the public health. Under the law, disposal will only be allowed when the disposal will not “unreasonably degrade or endanger” the marine environment or the public health. The DEQE was assigned the responsibility for determining the regulation for enforcing the law.

Connecticut

During FY-76, Connecticut signed into law a bill which makes any person, firm or corporation liable for damages if they are negligently responsible for the pollution or contamination of any land or waterway resulting from an oil or chemical product discharge or spill. The law calls for the penalty to be one and one-half times the cost and expenses necessary to eliminate the pollution or contamination.

Connecticut legislators also enacted a law which banned the manufacture and/or sale of polychlorinated biphenyls (PCB) or products containing PCB's unless such activity is
registered with and approved by the Commissioner of Environmental Protection. The law also places restrictions on the disposal of PCB's and products containing PCB's.

Maine

A law was passed in the State of Maine to temporarily exempt property owners on the islands in Casco Bay from certain waste discharge compliance requirements until such time as sewage treatment facilities in Casco Bay are completed.

Compliance date was set at Oct. 1, 1976, but the exemption was granted because the average household income on the islands is below the state average for Maine households and because private treatment facilities involve excessive costs.

Maine lawmakers also passed an act to allow the Board of Environmental Protection to grant limited variances to statutory time schedules if the board finds that:

—construction of an approved project is at least 75 percent completed,
—contractual and financial commitments to complete the project have been made, and
—cause of the failure to complete project on time is not directly attributed to the licensee.

New York

The State of New York passed two bills during FY-76 that authorized the New York State Department of Environmental Conservation (DEC) to regulate water releases from reservoirs in six New York counties in order to provide rivers downstream with sufficient water for ecological and recreational purposes.

One of the provisions was to regulate the water releases so that they don't jeopardize the water supply for power production as well as the drinking needs of New York City residents.

New Hampshire

In a special session of the General Court, legislators enacted a law allowing either the New Hampshire Water Supply and Pollution Control Commission or the Winnipesaukee River Basin municipalities to plan and design sewerage projects involving facilities which are both eligible and ineligible for state aid. This provision puts basin communities on the same eligibility level as the other municipalities in the state.

Also, a provision was added to the 1976-77 Commission budget preventing federal funds from being assigned to local collection systems. Federal money will be allowed for treatment plants, interceptor systems and pumping stations.

In addition, funding was approved for the control of algae in the surface waters of the state. Although this control does not attack the cause of the nuisance algae growth, it serves as an interim control until more measures can be effected. This cosmetic approach has been used in the state since 1962.

INTERSTATE LEGISLATION

In an attempt to avoid duplication of cost and effort in the construction and use of wastewater treatment facilities, the States of Vermont and New Hampshire have agreed to permit the construction of joint sewage and waste disposal facilities.

The agreement was endorsed by an act of Congress (Public Law 94-403) during the last month of the fiscal year. The act allows any two or more communities (at least one from each state) to engage in this joint project providing they have approval from each state's water pollution control agency.

The act calls for the sharing of construction, operation and maintenance costs. The operation and maintenance costs would be based on a ratio of the actual flows from each community to the plant.

Concerning federal assistance, municipalities must file a joint application to the federal government for funding of everything except sewers. Sewers are to be handled separately by each community.

Other provisions of the act include a uniform set of pretreatment standards for industrial users as well as a uniform system of charges for industrial users.
<table>
<thead>
<tr>
<th>State</th>
<th>Total Allotment</th>
<th>Step I Grants (Facilities Plan)</th>
<th>Step II Grants (Design &amp; Specification)</th>
<th>Step III Grants (Construction)</th>
<th>Total Grants (7-1-75 to 9-30-76)</th>
<th>Total Obligated (as of 6-30-75)</th>
<th>Percentage Obligated (as of 6-30-75)</th>
<th>Total Obligated (as of 9-30-76)</th>
<th>Percentage Obligated (as of 9-30-76)</th>
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<tbody>
<tr>
<td>Connecticut</td>
<td>$308,684,700</td>
<td>$2,537,767</td>
<td>$1,075,297</td>
<td>$52,311,485</td>
<td>$55,924,549</td>
<td>$99,020,758</td>
<td>32%</td>
<td>$153,945,307</td>
<td>50%</td>
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<tr>
<td>Maine</td>
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<td>$300,765</td>
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<td>Massachusetts</td>
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<td>$78,549,046</td>
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<td>$1,936,528</td>
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<td>$35,611,981</td>
<td>$67,047,358</td>
<td>44%</td>
<td>$102,659,339</td>
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<td>New York</td>
<td><strong>$2,089,647,700</strong></td>
<td><em>(0)</em></td>
<td><em>(0)</em></td>
<td><em>(2)</em></td>
<td><em>(2)</em></td>
<td>$682,035,187</td>
<td><strong>33%</strong></td>
<td><strong>$1,044,035,374</strong></td>
<td><strong>50%</strong></td>
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<tr>
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<td>$998,625</td>
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<td>$26,179,013</td>
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<td>TOTAL</td>
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<td>$9,502,101</td>
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<td>$1,189,347,413</td>
<td>35%</td>
<td>$1,834,465,323</td>
<td>54%</td>
</tr>
</tbody>
</table>

**— New York figures with regards to Compact area ONLY.**

***— New York statewide figures.**

Figures in parentheses indicate number of grants awarded.
Construction

New Hampshire

New Hampshire was the recipient of 57 EPA grants for water pollution control projects during FY-76, making it the busiest of the six New England states.

The 57 grants — totalling $35.6 million in federal funds — leave New Hampshire with $51.1 million still to be obligated before the Sept. 30, 1977 deadline. That amounts to 33 per cent of the state's total allocation ($153.8 million) under the Federal Water Pollution Control Act of 1972.

Two of the state's largest grants — each exceeding $7 million — were awarded to the New Hampshire Water Supply and Pollution Control Commission as part of the Winnipesaukee River Basin pollution abatement program. One of the grants is for the construction of two pumping stations and an interceptor sewer which, when completed, will connect the communities of Gilford and Meredith to the existing Laconia Sewage Treatment Plant on Lake Winnisquam. Called the "West Paugus Interceptor," the project will also connect a large portion of the presently unsewered area of Laconia.

The other grant is being used to construct a pumping station, force mains and interceptors to serve as an outfall sewer for the same Laconia plant and will eventually end discharge into Lake Winnisquam. This project, called the

"Winnisquam By-Pass," will carry wastewater from Meredith, Gilford, Laconia, Sanbornton and Belmont towards the city of Franklin where an advanced wastewater treatment plant is now under construction.

Another project, made possible by a $3.2 million EPA grant, will complete the connection to the Franklin plant.

During FY-76, large EPA grants for Step III construction projects were also awarded to the towns of Lisbon ($2.4 million) and Hudson ($5.7 million).
Vermont

Thirty-nine grants, including 17 for Step III construction, were awarded to projects in the state of Vermont during FY-76. Of the 17 construction grants, the largest went to the town of Springfield for $1.7 million. Three other grants — all exceeding $1 million — were awarded by EPA to the villages of Enosburg Falls, Bradford and Bellows Falls during the fiscal year.

The Springfield grant will be used to upgrade an existing primary plant to a 2.11 MGD conventional activated sludge secondary treatment plant. The project, which is expected to be completed by February of 1979, will improve the conditions of the Black River.

The projects in Enosburg Falls and Bradford both call for the construction of an extended aeration secondary treatment plant and an interceptor system. The Bradford project also includes the construction of a collector system and two ejector stations.

The Connecticut River will be the beneficiary of a combined sewer separation project in the village of Bellows Falls. An EPA grant of $1.5 million will be used to install 18,000 feet of storm sewers in the first of a three-phase project. The second phase will be more sewer separation and the third phase will involve the upgrading of an existing primary plant to secondary treatment. The first phase is expected to be completed by the fall of 1978.

Having spent $11.2 million during the 15-month fiscal year, Vermont finds itself with $19.1 million still available as of Sept. 30, 1976. This amounts to 42 per cent of its total allocation, $45.4 million.

Massachusetts

Concerned over Massachusetts' slow rate of obligating federal water pollution control funds, the Massachusetts Office of Environmental Affairs requested that the NEIWPCC contract with a consultant to help the state speed up its review process. As of June 1, 1976, the day the contract was signed, Massachusetts had spent less than 48 per cent of its total allotment of $573.9 million and officials were afraid the state would not meet the federal spending deadline set for Sept. 30, 1977. Under the terms of the contract, the consultant was to devise and implement a fully operational Management Information System to expedite the review process.

Figures released four months later indicated that Massachusetts was making great strides during the final months of FY-76. By Sept. 30, 1976 — the final day of the fiscal year — the state had obligated more than $302.8 million, representing 53 per cent of its total allotment.

EPA awarded 55 grants amounting to $78.5 million to Massachusetts projects during the 15-month fiscal period. The largest single grant, for $18.8 million, went to the Charles River Pollution Control District covering the towns of Franklin and Medway. The project will involve the construction of a 4.5 MGD advanced wastewater treatment plant and seven miles of interceptors to tie in both towns. The treatment plant, which has the capability to expand to 12.4 MGD, is being built along the Charles River in Medway, downstream from Populatic Pond.

In the future, Holliston, North Bellingham, Wrentham and a portion of Millis are expected to tie into the treatment plant, joining Franklin and Medway.
An EPA grant of $9.7 million was awarded to the town of Grafton for construction of a 1.6 MGD secondary treatment plant with phosphorus removal and two pumping stations. The grant will also be used to install about 15 miles of interceptors and lateral sewers in the town. The project is expected to improve the water quality of the Blackstone River. Completion is tentatively scheduled for the spring of 1979.

Other large grants awarded by EPA during FY-76 include, $5.8 million to the town of Templeton; $9.7 million to the town of Hull; $5.3 million to the South Essex Sewer District; $6 million to the town of Billerica; and $5 million to the town of Auburn.

Rhode Island

Rhode Island continued to make steady progress in its effort to obligate all of its federal funds before the Sept. 30, 1977 deadline. By the end of FY-76, Sept. 30, 1976, only $29.8 million out of an original allocation of $90.9 million was left to be spent during FY-77. This amounted to about 33 per cent of its total funds.

Both domestic and industrial wastewater from the city of Fitchburg, Mass. are treated at this recently completed 12.4 MGD activated sludge wastewater treatment plant in East Fitchburg. (Photo courtesy of Camp, Dresser & McKee, Inc. of Boston)

Eighteen grants, totaling $26.2 million, were awarded to Rhode Island projects during the 15-month fiscal year. The EPA grants were divided evenly among the three steps, “Facilities Plan,” “Design & Specification” and “Construction,” with six apiece.

The largest of the federal grants, $7.7 million, was made to the Smithfield Sewer Authority for the construction of a
3.5 MGD secondary treatment plant equipped with a micro-strainer which is designed to filter out additional solids from the wastewater. The project, with a total eligible cost of $10.2 million, will also include the construction of interceptors, force mains, pumping stations and lateral systems.

The project is expected to be completed by the spring of 1979 and will improve the water quality of the Woonasquatucket River.

Two other EPA grants of $4.2 million and $2.6 million were awarded to the city of Newport for the construction of wastewater treatment facilities including a 20 MGD combined sewer overflow treatment plant. When completed, microstrainers and chlorination will be used to treat the overflow.

The project is expected to improve the water quality in Narragansett Bay.

Connecticut

Forty EPA grants worth nearly $56 million were awarded to Connecticut wastewater treatment projects during FY-76. The grants pushed the state up to the 50 per cent mark in its effort to obligate almost $309 million in construction grants money before September 30, 1977, the federal deadline.

Most of the grants were for Step I (Facilities Plan) work, but the bulk of the money went to Step III (Construction) projects. More than $52 million in grants was earmarked for various construction projects throughout the state.

The largest award went to the city of New London. More than $15 million was awarded by EPA to upgrade a primary treatment plant to secondary treatment and to construct interceptors and a new outfall. The project, which was expected to take 30 months to complete, was to handle sewage from both New London and Waterford. Both the
Thirty-three grants, amounting to $75.6 million, were awarded by EPA during FY-76, 16 of which went to construction.

One of the grants, for $30 million, went to the city of Portland to build what will be the largest municipal treatment plant in the state. The project will include a 15.2 MGD secondary treatment plant, pumping stations, force mains and 60 per cent of its proposed three-phase interceptor system. The first phase is scheduled for completion by the late fall of 1978 and is expected to improve the water quality of Back Cove and, ultimately, Casco Bay.

Maine

Maine continues to set the pace for the rest of the nation in obligating federal water pollution control funds. Figures released for Sept. 30, 1976 — the final day of FY-76 — show the state of Maine with less than seven per cent of its total allocation of $135.1 million left to be spent.
Workman stands in center of the final sedimentation tank No. 3 during construction of a wastewater treatment plant in the Portland Water District in Portland, Maine. In the rear is the chlorine building, also under construction. (Photo courtesy of Camp, Dresser & McKee, Inc.)

Water quality in the Presumpscot River will also improve when construction is completed in the city of Westbrook for a 4.5 MGD secondary treatment plant, interceptor system, pump stations and force mains. The project is being made possible by a $10.9 million grant from EPA.

A 1.5 MGD secondary treatment plant will soon be under construction in the Wells Sanitary District as a result of an $8.4 million EPA grant. In addition to the treatment plant, which will handle individual discharges from the town of Wells, the grant will be used to build interceptors, force mains, pump stations and an ocean outfall.

New York

The State of New York obligated approximately $362 million during FY-76, but on the last day of the year, September 30, 1976, the state was still more than $1 billion short of full obligation.

However, in the eastern section of the state—that part which involves the NEIWPC Compact area—only two EPA grants were made, both for Step III (Construction) projects.

The beneficiaries of the two grants, which total $8.1 million, are the villages of Ticonderoga and Whitehall.

Ticonderoga received $6.3 million to build an aeration treatment facility, interceptors, storm water holding tanks, manholes, a pumping station and a force main. The project, which is expected to be completed by the fall of 1978, will serve only the village of Ticonderoga.

In Whitehall, EPA provided $1.9 million for the construction of a 0.6 MGD extended aeration plant with two circular tanks, aerobic digestion, chlorination facilities and converted sludge drying beds. The project will serve only Whitehall. Previously, sewage was discharged into the Champlain Canal.
NEIWPCC Financial Report Fiscal Year 1976

The books and records of the New England Interstate Water Pollution Control Commission were audited by Richard C. Gove, Certified Public Accountant, and by the Commonwealth of Massachusetts.

| CASH BALANCE July 1, 1975 | $159,319.29 |

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<tr>
<td>Maine</td>
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<td>New York</td>
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<td>Rhode Island (2 yrs)</td>
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<td>Vermont</td>
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<tr>
<td>Environmental Protection Agency Grants (basic program plan allotment and special amendments)</td>
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<td>Massachusetts Department of Environmental Quality Engineering Grants</td>
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<td>Regional Planning Commissions</td>
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CASH BALANCE September 30, 1976 | $299,263.69