

NEW JERSEY



Statewide Water Quality Management Program Plan

LIBRARY
REBIND



Statewide Water Quality Management Program Plan

December 1985

974.90
P177
1975n
vol. 2
copy 2

Thomas H. Kean
Governor

Robert E. Hughey
Commissioner



STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ROBERT E. HUGHEY, COMMISSIONER
CN 402
TRENTON, N.J. 08625
609 - 292 - 2885

December 1985

Dear Colleague:

I am pleased to present to the citizens of New Jersey the Statewide Water Quality Management Program Plan. This document reviews the direction and initiatives New Jersey is taking to improve and protect our rivers, streams, lakes, bays, ocean waters and ground-water resources.

The Statewide Water Quality Management Program Plan is designed to present in one report more than 25 Departmental strategies, policies and procedures for a number of water quality and wastewater management issues. As a result, I consider this plan an important component of our multi-faceted environmental protection program.

Water is an abundant resource in New Jersey, but unfortunately it has a long history of abuse and overuse in the state. Now, pollution control efforts have begun to restore the quality of our water. A review of water quality conditions in the state in 1984 showed that water quality degradation has been halted and that improvement or stability in stream quality is taking place. These clean-up efforts will continue full speed, as Governor Kean noted in his Annual Message to the New Jersey Legislature when he declared "1985 is--and must be--the year of the environment in New Jersey." This document will serve as a foundation in guiding our water quality management actions for the foreseeable future.

Sincerely,

TABLE OF CONTENTS

	<u>Page</u>
List of Figures and Tables	v
Acknowledgements	vi
Chapter I. Introduction	I-1
A. Background	I-1
B. Legal Authority for the Statewide WQM Plan	I-2
C. Objectives of the Statewide WQM Plan	I-4
D. Content of the Statewide WQM Plan	I-4
E. Update of the Statewide WQM Plan	I-6
Chapter II. Water Quality and Wastewater Management Planning Strategies	II-1
A. Water Quality Management Strategies	II-1
1. Surface Water Quality Standards Review	II-2
2. Shellfish Waters Restoration and Protection	II-8
3. Trout Waters Protection	II-13
4. Lake Restoration and Management	II-19
5. Acid Producing Deposits	II-24
6. Water Quality/Water Supply Integration	II-28
B. Wastewater Management Strategies	II-30
1. Wastewater Facilities Financing	II-31
2. Combined Sewer Overflow	II-35
3. Review of Wastewater Discharge Requirements	II-37
4. Water Quality Based Effluent Limitations	II-40
5. Residential Wastewater Flow Generation	II-42
6. Municipal Management Strategy	II-45
C. Planning Strategies	II-48

1.	Water Quality Management Planning Delegation	II-49
2.	Areawide Water Quality Management Plan Update	II-52
3.	Integration of Wastewater Facilities Plans, Statewide Sludge, Septage, and Solid Waste Plans with the Statewide Water Quality Management Program Plan	II-54
D.	Program Strategies	II-58
1.	Surface and Ground Water Discharge Permitting	II-59
2.	Surface and Ground Water Quality Monitoring	II-62
3.	Environmental Health Services	II-69
4.	Feasibility of Assuming Section 404 Dredge and Fill Permit Responsibility	II-74
5.	Public Involvement Program	II-76
Chapter III.	Water Quality and Wastewater Management Policies and Procedures	III-1
A.	Water Quality Management Policies and Procedures	III-1
1.	Policy for the Protection of Ground Water Quality in the Discharge of Dredged Material at an Upland Disposal Site	III-2
B.	Wastewater Management Policies and Procedures	III-4
1.	Policy on Permitting of Domestic Wastewater Treatment Facilities	III-5
2.	Policy on Wastewater Management Plans	III-6
3.	Policy for Interim Construction, Expansion, Upgrade and Unplanned Wastewater Treatment Facilities	III-8
4.	Sewer Extension Policy and Procedure	III-12
C.	Planning Policies and Procedures	III-14
1.	Policy on Incorporation of 201 Facilities Plans ...	III-15
2.	201 Facilities Planning Area Designation	III-17
3.	Procedures for the Use and Review of Population Projections in Water Resources Management Planning	III-19

Chapter IV.	Initial WQM Activities and Other Planning Related Outputs and Accomplishments	IV-1
A.	Summary of Areawide Water Quality Management Plans	IV-1
B.	Other Outputs of the WQM Planning Program	IV-4
Appendix	A-1
	Introduction	A-1
I.	Summary of the Division of Water Resources Water Quality Management Implementation Program	A-2
II.	Areawide WQM Plan Amendments and Revisions	A-31
III.	Summary of Certification Conditions	A-49
IV.	New Jersey Water Quality Planning Act	A-50
V.	Regulations Concerning the Water Quality Management Planning and Implementation Process	A-54

List of Figures and Tables

Page

Figures

Figure 1.	Water Quality Management Planning Areas	I-3
Figure 2.	Areas of New Jersey with Land in Trout Production Watersheds	II-14
Figure 3.	Areas of New Jersey with Land in Trout Maintenance Watersheds	II-15
Figure 4.	Areas of New Jersey with Acid-Producing Deposits ..	II-26

Tables

Table 1.	Lake Restoration Projects	II-21
Table 2.	Gallons Per Housing Unit	II-44
Table 3.	Population Density per Housing Unit	II-44
Table 4.	Wastewater Facilities Policy Illustration	III-11
Table 5.	Comparison of Year 2000 Projections	III-20

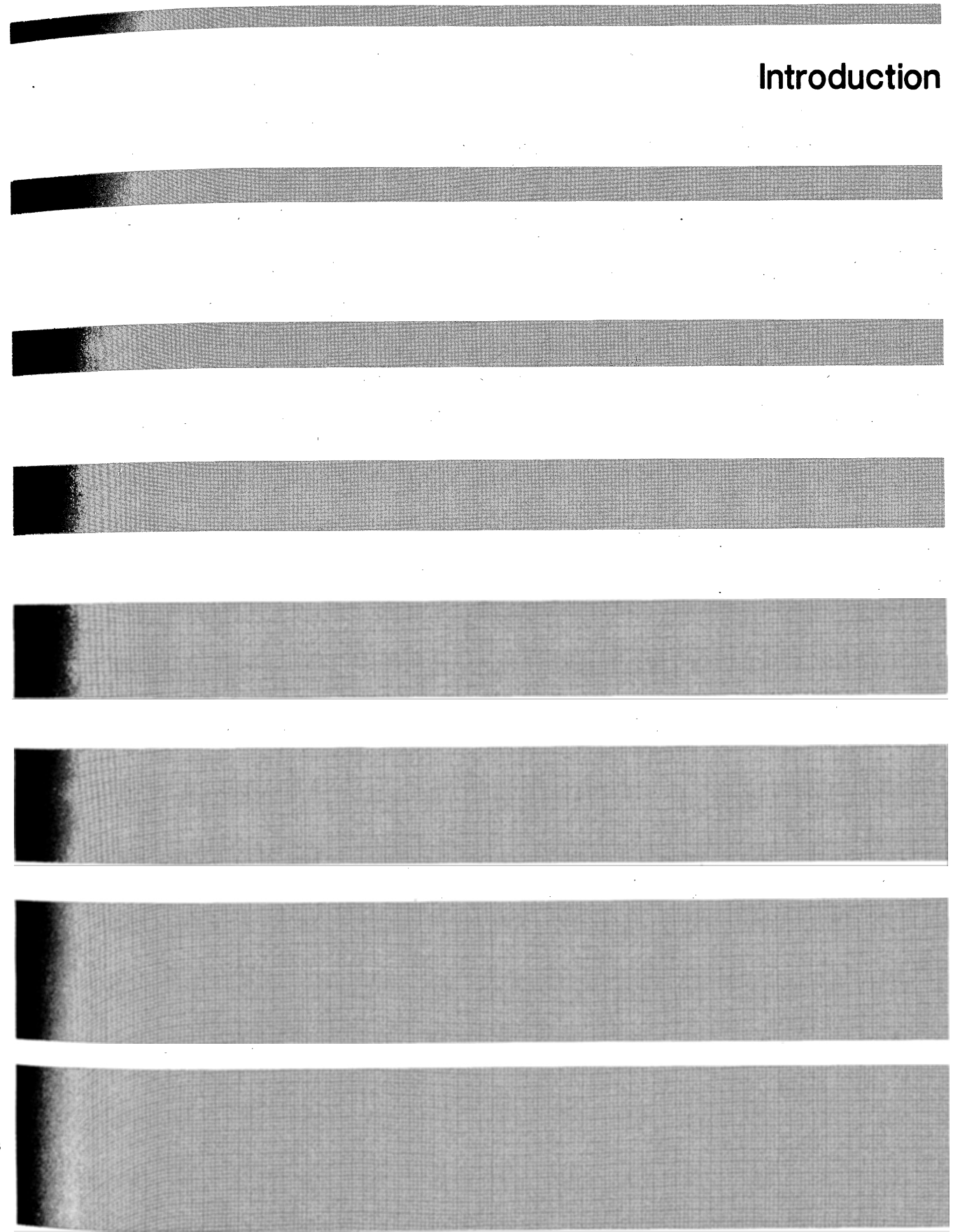
ACKNOWLEDGEMENTS

This report was edited by Barry B. Miller, Environmental Scientist under the direction of Douglas M. Clark, Assistant Director, and George Horzempa, Bureau Chief. The project was supervised by Barry Chalofsky, Supervising Planner. Portions of the report were prepared by Edward Frankel, Principal Planner; William Minervini, Principal Planner; Robert Scro, Environmental Scientist; Keith Robinson, Senior Environmental Specialist; and Sandra Kreitzman, Senior Environmental Specialist. The Bureau of Systems Analysis and Wasteload Allocation, the New Jersey Geological Survey, and the Data Acquisition and Analysis unit also prepared sections of the report. The cover and other graphics were prepared by the Resources Interpretive Service of the Department of Environmental Protection. Acknowledgement is also given to Robin Lloyd, Rosalie Tulamello and Helen Norton for typing this document.

Cover photo: Big Flat Brook, Sandyston
Township, Sussex County
(Photo credit: William Minervini)

Chapter I

Introduction



Chapter I

Introduction

The Statewide Water Quality Management Program Plan (Statewide WQM Plan) was developed as part of the Department of Environmental Protection's overall effort to protect water quality in the State. It addresses a number of water quality-related issues and needs, although it does not attempt to address all factors affecting water quality. This introductory section discusses some history of the Department of Environmental Protection (Department) water quality management planning program leading to the development of the Statewide WQM Plan, the Plan's relationship to other planning efforts, its content, and other items to aid in understanding the document and its significance.

It should be noted that the Statewide WQM Plan is organized in a manner which will allow copies of the Plan to be updated without affecting the integrity of the overall document. Individual sections begin on separate pages, which will allow those sections to be deleted or new sections to be inserted. In this manner, reprinting of the entire document will not be necessary as it may always be kept current through the insertion or deletion of pages as needed.

A. Background

The Statewide WQM Plan establishes the foundation for unifying three, past and present, water quality and wastewater facilities planning programs into a cohesive Statewide program. Those programs are the wastewater facilities planning (201), basin planning (303(e)), and areawide planning (208) programs. The numbers refer to the appropriate sections of the federal Clean Water Act (33 U.S.C. 1251 et seq.) requiring certain activities. While those programs have the same ultimate purpose, the protection of water quality, they differ in geographic scope, specific subject matter, and level of detail. In addition to addressing federal requirements, the three programs serve to satisfy State requirements for water quality planning as specified in the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.).

The wastewater facilities planning program involves the development of Facilities Plans for federally funded municipal or regional wastewater treatment works. The development of these plans is a component of a three-part process (planning, design and construction) necessary for the funding and construction of wastewater treatment facilities. In the planning phase, various detailed alternatives are considered in determining the most feasible and cost-effective manner for handling sewage treatment and/or conveyance. The Facilities Plans also identify sewer service areas and areas where sewer service is inappropriate due to environmental sensitivity.

The basin planning program addresses the development of Basin Plans (written according to river basin delineations), with an emphasis on pollutants from point sources." A point source is any discernible, confined and discrete conveyance, such as a pipe, from which pollutants may be discharged. The plans coordinate the State's enforcement, discharge permit and 201

Construction Grants programs. They also specify the amount of pollutants which may acceptably be discharged from point sources, while maintaining water quality standards.

The areawide planning program is more comprehensive in scope. It examines all potential sources and types of water pollution within a particular geographic area, and seeks to develop mechanisms for controlling those pollutant sources. For the purpose of areawide planning, the State was divided into twelve study areas. An areawide plan for each area was completed by either the Department or by sub-state agencies (termed "designated agencies"). Figure 1 shows the twelve study areas in the State and indicates the corresponding planning agencies. In November 1975, the U.S. Environmental Protection Agency (EPA) combined the provisions of Sections 303(e) and 208, and labeled those combined plans "Water Quality Management (WQM) Plans."

During the same period that the above planning activities were being conducted, the Department was also assuming certain additional responsibilities from the EPA. Those responsibilities include the issuance of surface water discharge permits (NJPDES), as well as responsibilities related to the issuance of grants for publicly-funded wastewater treatment projects (201 grants). Along with the surface water discharge permit program, the State also developed a ground water discharge permit program.

The grant and permit responsibilities, as well as the various planning activities described above, were to a large extent conducted independently of each other. Some responsibilities were carried out by the Department, while the rest were conducted by other agencies. All of the various plans were prepared over different time frames, with limited coordination between planning agencies. This lack of active coordination sometimes resulted in inaccuracies and inconsistencies between plans.

Both Federal and State law require the Department to develop a Continuing Planning Process for water quality management. This process is designed to integrate and unify the various planning efforts. The Statewide WQM Plan presents the written strategies and policies developed through this process. It also updates and amends the State-developed areawide WQM Plans.

B. Legal Authority for the Statewide WQM Plan

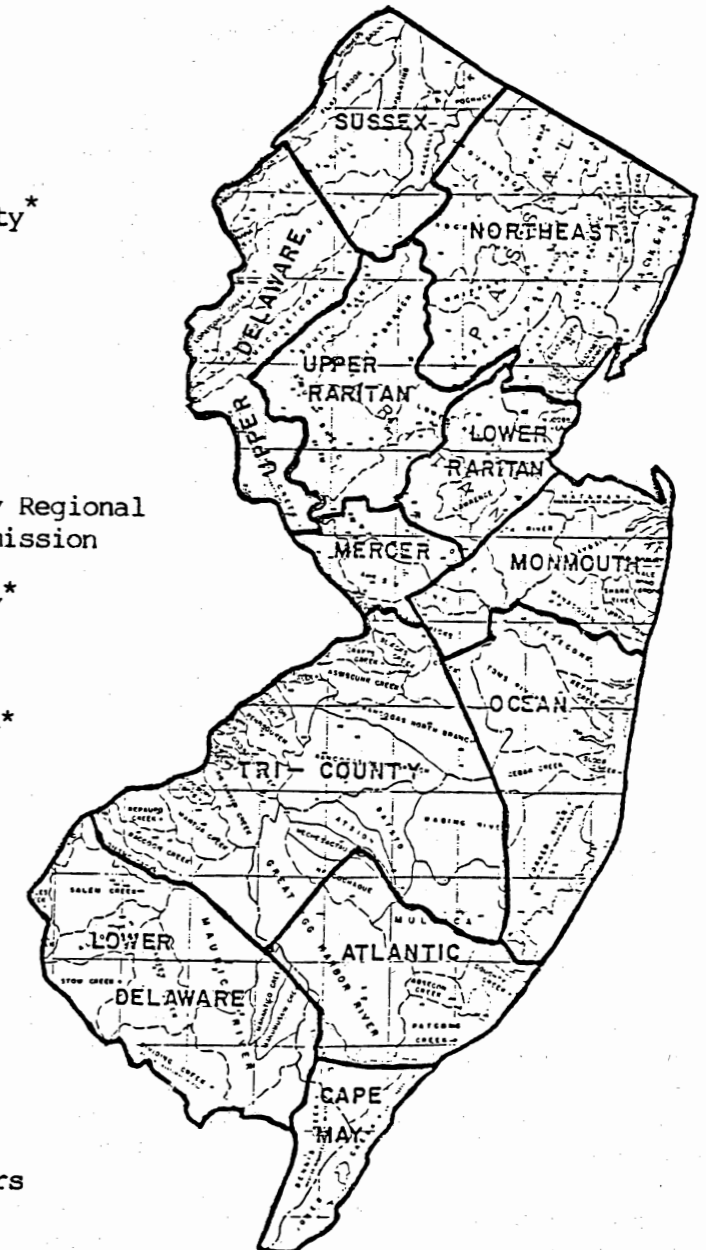
The legal authority for the Continuing Planning Process, of which the Statewide WQM Plan is a component, is the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.) and the Department of Environmental Protection Act of 1970 (N.J.S.A. 13:1D-1 et seq.). The Statewide WQM Plan also meets mandates of the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.).

In addition, the Statewide WQM Plan was developed to satisfy requirements of the federal Clean Water Act (33 U.S.C. 1251 et seq.), the federal Water Quality Planning and Management Regulations (40 CFR 130), and the New Jersey Water Quality Management Planning and Implementation Process Regulations (N.J.A.C. 7:15).

Figure 1

WATER QUALITY MANAGEMENT PLANNING AREAS

<u>Planning Area</u>	<u>WQM Planning Agency</u>
Sussex County	Sussex County*
Northeast	NJDEP
Upper Delaware	NJDEP
Upper Raritan	NJDEP
Lower Raritan/ Middlesex County	Middlesex County*
Monmouth County	NJDEP
Mercer County	Mercer County*
Ocean County	Ocean County*
Tri-County Area	Delaware Valley Regional Planning Commission
Atlantic County	Atlantic County*
Lower Delaware	NJDEP
Cape May County	Cape May County*



* County Board of Chosen Freeholders

C. Objectives of the Statewide WQM Plan

The Statewide WQM Plan seeks to carry out the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.), which has as its objective: "wherever attainable, to restore and maintain the chemical, physical and biological integrity of the waters of the State."

In addition, the Statewide WQM Plan has more specific program objectives. These include:

1. To provide a cohesive, unified, framework and direction for the Department and designated planning agencies in addressing water quality protection, wastewater management, and resource protection. Through this framework, priority issues and needs are addressed, in an efficient manner, with minimal duplication of effort among Department and sub-state planning units.
2. To establish methodologies for uniform applicability in planning and implementation activities. The use of those methodologies allows the subject issues to be addressed in a uniform and consistent manner.
3. To establish a mechanism by which there may be a sharing of wastewater management decision-making at the appropriate levels of government. The sharing of responsibilities instills accountability for those decisions, and provides local levels of government the opportunity for greater involvement in water quality-related activities within their areas of jurisdiction.
4. To inform the public of the progress which the Department has made to date, as well as its plans for future work to address certain water quality issues and needs.

D. Content of the Statewide WQM Plan

The Statewide WQM Plan is the Department's initial compilation and summary of work conducted through its Continuing Planning Program. As the initial product, it is not intended to be comprehensive in scope. Rather, it is meant to address priority water quality, wastewater, and natural resource-related issues and needs. It is intended to serve as a foundation from which further work may be conducted in the future. The subject areas which are not dealt with in detail in this document, but will be addressed in the future, are: hazardous wastes, toxic pollutants, ground water management, and nonpoint source management.

The main emphasis of the Plan is on water quality, and wastewater treatment and conveyance facilities. The development of a cohesive planning framework for addressing wastewater treatment and provision of sewer service is needed to protect the environment, while providing for orderly economic growth.

Development in the state is causing increasing demand for additional wastewater treatment capacity. This demand exists in areas where plants are at or over capacity and may not be meeting permit requirements, resulting in

unacceptable levels of water quality. There is also demand for capacity in areas where there is inadequate or no sewerage infrastructure. Scenarios such as these require the development of wastewater treatment-related policies and strategies to improve and maintain acceptable water quality conditions.

Specifically, the Statewide WQM Plan consists of several components, including:

1. **Strategies:** The Plan contains several strategies within the general categories of water quality management, wastewater management, planning, and programs. These strategies outline plans of action to address priority water resources needs and issues. Additional strategies may be added in the future as needs dictate.
2. **Policies/Procedures:** The Plan contains policies and procedures which provide operational requirements for water quality management, wastewater management, and planning. These policies and procedures clearly define the Division of Water Resources' course of action for each of the subjects discussed in order to ensure consistency in those actions. Additional policies and procedures may also be added in the future to address priority needs.
3. "Surface Water Quality Standards" (N.J.A.C. 7:9-4), "Wastewater Discharge Requirements" (N.J.A.C. 7:9-5), and "Ground-Water Quality Standards" (N.J.A.C. 7:9-6): The Surface Water Quality Standards constitute rules of the Department governing matters of policy with respect to the protection and enhancement of the surface water resources. The Wastewater Discharge Requirements constitute rules of the Department concerning matters of policy with respect to the protection and enhancement of surface waters of the State, disinfection, and minimum treatment requirements. The Ground-Water Quality Standards constitute rules of the Department concerning matters of policy with respect to the protection and enhancement of the ground-water resources.
4. "New Jersey 1982 State Water Quality Inventory Report" and "New Jersey 1984 State Water Quality Inventory Report": These reports constitute the problem identification component of the Statewide WQM Plan. They were prepared biennially pursuant to Section 305(b) of the federal Clean Water Act. The reports assess surface water quality conditions throughout the State, estimate where "fishable and swimmable" clean water goals will or will not be met, identify pollution control actions needed to achieve these goals, and estimate the required costs involved. Also included is a review of ground water quality and quantity conditions in the State as well as an indication of relevant problems.
5. **Technical Resource Documents:** Several activities conducted by the Division of Water Resources' Continuing Planning Program have resulted in "Technical Resource Documents." These documents serve

Chapter II

Water Quality and Wastewater Management Planning Strategies

as sources of information and guidance to local agencies and others interested in the subject matter. The documents are not considered as binding in the implementation of the Statewide WQM Plan, notably through the Consistency Determination Program, nor do they require a plan amendment for revision. The Technical Resource Documents are discussed in Chapter IV, Section B of this document.

6. Summary of the Division of Water Resources Water Quality Management Implementation Program: This section, which is contained in the the Statewide WQM Plan appendix, is a summary description of the responsibilities of each of the units in the Division of Water Resources' overall program to protect water quality.
7. Areawide WQM Plan Amendments and Revisions: This section is contained in the Statewide WQM Plan appendix. It specifies the formal amendments and minor revisions to the initial areawide WQM Plans prepared by the Department.
8. Summary of Certification Conditions: This section is also contained in the Statewide WQM Plan appendix. It updates the certification conditions placed on the initial areawide WQM Plans. As is explained in that section, the earlier conditions are not deleted; however, a mechanism is provided whereby earlier conditions may be considered for deletion, as warranted.

E. Update of the Statewide WQM Plan

As was stated previously, this document represents the initial version of the Statewide WQM Plan and will be updated in the future. Future WQM planning will address priority water quality needs by:

1. Further developing and refining strategies included in the present document.
2. Implementing strategies included in the present document.
3. Developing new strategies, policies, and procedures to provide water quality protection, particularly for those areas of concern not covered by this document.

Chapter II

WATER QUALITY AND WASTEWATER MANAGEMENT PLANNING STRATEGIES

Introduction

The "strategies", "policies", and "procedures" of the Statewide WQM Plan are concise statements of preventive or corrective courses of action, which were developed to address various water resource-related needs and issues. The strategies are methodologies that outline suggested future actions to be taken by the Division or other agencies. The policies and procedures, included in a subsequent section of the document, concisely describe present methods by which the Division is addressing certain issues or problems. Policies and procedures are important as they provide a clearly defined and uniform mechanism to be applied in protecting mechanism to be applied in protecting the water resources. It is important to note that policies and procedures are binding as operational requirements in the implementation of the appropriate permit programs. In addition, while strategies may be changed or revised without following a formal process, policies and procedures can only be changed through the WQM Plan amendment procedure (N.J.A.C. 7:15-3.4).

This section consists of the Statewide WQM Plan's strategies. The strategies are divided into four subgroups: Water Quality Management Strategies, Wastewater Management Strategies, Planning Strategies, and Program Strategies.

A. WATER QUALITY MANAGEMENT STRATEGIES

These strategies seek to address certain technical issues, factors or problems which are related to water quality. They include technical methodologies for addressing certain issues through the water quality standards, protecting especially vulnerable water bodies, as well as other technical considerations. The strategies included in this subsection are:

1. Surface Water Quality Standards Review.
2. Shellfish Waters Restoration and Protection.
3. Trout Waters Protection.
4. Lakes Restoration and Management.
5. Acid Producing Deposits.
6. Water Quality/Water Supply Integration.

1. Surface Water Quality Standards Review

• Background

The Department's Surface Water Quality Standards constitute one of the principal elements of its water pollution control program. In 1964, Surface Water Quality Standards were adopted by the New Jersey Department of Health. Surface Water Quality Standards have subsequently been revised and adopted periodically by the Department of Environmental Protection.

Each of the initial areawide WQM Plans included descriptions of the then applicable Surface Water Quality Standards. Most of these plans included some recommendations for revisions to those Standards. The present Surface Water Quality Standards (N.J.A.C. 7:9-4) were adopted by the Department on April 29, 1985 (and amended on August 7, 1985) pursuant to the authority of N.J.S.A. 13:1D-1 et seq., the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.), and the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.), and have been approved by EPA under section 303(c) of the federal Clean Water Act. The present Surface Water Quality Standards became effective on May 20, 1985 (the amendments to Index D became effective on September 3, 1985). Like the previous Surface Water Quality Standards that the Department had adopted in March 1981 and repealed on April 29, 1985, the present Standards include (with some modifications) some of the revisions that were recommended in initial areawide WQM Plans. The present Standards are part of the Statewide WQM Plan and supersede any provisions in the areawide WQM Plans that are inconsistent with those Standards.

The Department's present Surface Water Quality Standards designate the water uses to be protected in individual waterways, establish the water quality criteria necessary to protect those uses, establish antidegradation policies, and include policies and procedures that affect the implementation of the Standards. The Department reviews its Surface Water Standards in the light of new scientific and technical information, experience gained in daily operations, and changes in water pollution control policy. The federal Clean Water Act requires the states to review surface water quality standards at least once every three years. The Department's next comprehensive review of its entire Surface Water Quality Standards is scheduled for completion in May 1988. The Department may also review specific provisions of the Surface Water Quality Standards when the Department determines that such review is appropriate or when the Department receives applications or petitions pursuant to certain specific provisions of the Standards.

The Department review of the Surface Water Quality Standards is a continuing process. It is important that these Standards be complete, detailed, and up to date. The Standards are an evolving set of regulations and will be evaluated prior to, or as part of, the next scheduled triennial review. Use attainability analyses, toxic substances, chlorine criteria, pending reclassification requests for two specific waterways, and mapping of FW1 waters have been identified

by the Department as priority topics for formal consideration. Background information about each of these topics follows.

The EPA Water Quality Standards Regulation (40 CFR 131) requires submission of a use attainability analysis for waters whose designated uses do not include all of the uses specified in section 101(a) (2) of the federal Clean Water Act ("protection and propagation of fish, shellfish and wildlife" and "recreation in and on the water"). In the Surface Water Quality Standards which the Department adopted on April 29, 1985, a number of surface water classifications for waters within the Passaic, Hackensack and New York Harbor Complex basin and the Delaware River basin did not include all of the section 101(a) (2) uses (SE2 waters, SE3 waters, the lower 16 miles of Zone 2 of the Delaware River, and Zones 3 and 4 of the Delaware River). In June 1985, in cooperation with the Interstate Sanitation Commission (ISC), EPA-Region II, and the New York State Department of Environmental Conservation, the Department completed a use attainability analysis for the Passaic, Hackensack and New York Harbor Complex waters, based on existing technical studies and water quality data. On August 7, 1985 based on the use attainability analysis, the Hackensack River from the Route 1 & 9 crossing to Berry's Creek was upgraded to SE2, and the Hudson River from the Harlem River to the New Jersey-New York border was upgraded to SE1. The other SE2 and SE3 waters in the Passaic, Hackensack, and New York Harbor Complex basin continued at their existing classification. The Department recognizes the limitations of the existing studies and data, and is aware of additional studies underway, which will be considered during future triennial reviews of the Surface Water Quality Standards.

The use attainability analysis for the waters in the Delaware River basin are being conducted by the Delaware River Basin Commission (DRBC) in cooperation with this Department, EPA Regions II and III, the Delaware Department of Natural Resources and Environmental Control, the Pennsylvania Department of Environmental Resources, the Pennsylvania Fish Commission, and the U.S. Fish and Wildlife Service. The proposed schedule calls for completion of these use attainability analyses and the formal review of the Surface Water Classifications by May 1988.

As the magnitude of the problem of toxic chemical contamination has become apparent in recent years, the need to establish additional water quality criteria for the control of toxic substances has received increased attention. The Department has decided to defer consideration of parameter-specific criteria based on protection of human health pending the ongoing development of maximum contaminant levels for finished drinking water as required by recent State legislation generally known as A-280 (N.J.S.A. 58:12A-12 et seq.). This legislation established a Drinking Water Quality Institute to recommend maximum contaminant levels for potable water that will protect human health. In order to avoid potential inconsistencies and potential duplication of effort, the Department will defer consideration of human health concerns until adoption of the maximum contaminant levels. Adoption of these maximum contaminant levels is called for in A-280 within a period of 18-24 months after its effective date (January 9, 1984). The Department will also review water quality criteria for

un-ionized ammonia, metals, and other toxic substances, as related to the protection of aquatic life, sometime after EPA publishes final water quality criteria for these substances under section 304(a) of the federal Clean Water Act (as EPA did for some of these substances on July 29, 1985).

Disinfection and chlorine criteria are linked because chlorine is currently the most widely used wastewater disinfectant. Chlorine is also commonly used as a biofouling control agent in cooling water discharges. Chlorine and its by-products are known to be toxic to aquatic life, and there is concern about the human health effects of the chlorinated organic compounds formed as a result of chlorination of wastewaters. In order to meet its obligation to protect aquatic life, the Department imposes water quality based effluent limitations for chlorine on appropriate dischargers, based on the water quality criteria for chlorine included in the Surface Water Quality Standards. The Department is undertaking a detailed review of chlorine criteria and disinfection policies in New Jersey. Although related to the Surface Water Quality Standards, the disinfection policies are included in the Department's Wastewater Discharge Requirements (not the Surface Water Quality Standards), and the review of these policies is discussed elsewhere in the Statewide WQM Plan in the strategy for "Review of Wastewater Discharge Requirements".

During the public comment period on the present Surface Water Quality Standards, the Department received requests from the Exxon Company, U.S.A., and the Somerset Raritan Valley Sewerage Authority that portions of Morses Creek and Cuckels Brook, respectively, be reclassified for less restrictive uses. The Department will consider these reclassification requests under separate, future, proceedings covering only those requests. This procedure allowed both dischargers to revise their applications to comply with the applicable reclassification procedures.

FWI waters are defined in the Surface Water Quality Standards as those fresh waters that originate in and are wholly within Federal or State parks, forests, fish and wildlife lands, and other special holdings that are to be maintained in their natural state of quality (set aside for posterity) and not subjected to any man-made wastewater discharges, as designated in Index A of the Standards. FWI waters are different from Category One waters, which may flow through lands in private or public ownership and which may receive man-made wastewater discharges as long as there is not measurable change in water quality characteristics. The Department has mapped Category One waters on U.S. Geological Survey 7.5' quadrangle base maps, but, because of resource limitations and mapping techniques, some waters which appear on the maps as Category One waters may actually be FWI waters. The Department intends to correct this by also mapping FWI waters on the same maps.

- Objective

Section 303(c) of the federal Clean Water Act requires that surface water quality standards "shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this

Act" and that "such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation." Section 101(a) (2) of that Act declares that "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983". The EPA has interpreted these statutory provisions in its Water Quality Standards Regulation (40 CFR 131).

The general objectives of the Surface Water Quality Standards Review process are the improvement of the Department's present Surface Water Quality Standards, the performance of reviews required by the federal Clean Water Act and the EPA Water Quality Standards Regulation, and the implementation, as appropriate, of review provisions built into the present Surface Water Quality Standards. Priority topics include use attainability analyses, toxic substances, chlorine criteria, pending reclassification requests for two specific waterways, and mapping of FWL waters.

- Strategy

- a. Use Attainability Analyses

As noted above, the Department has upgraded part of the Hackensack River from SE3 to SE2 and part of the Hudson River from SE2 to SE1. The remaining SE2 and SE3 waters continue at their existing classification. Subsequent use attainability analysis activities will be performed by the Department in cooperation with other agencies.

The Department expects that further studies and continued water quality monitoring, related to abatement of combined sewer overflows and other wastewater discharges in New Jersey and New York and the evaluation of the New York City "208" water quality model, will be assessed during future triennial reviews of the Surface Water Quality Standards.

A proposed schedule for the use attainability analysis of the Delaware River Estuary (to be performed by the DRBC in cooperation with this Department and other State and federal agencies) has been presented to the EPA. Some highlights of the proposed schedule are the completion of a Final Plan of Study by October 1985 (which may result in changes to the schedule); the completion of a preliminary assessment of primary contact recreation and aquatic life uses by April 1986 and October 1987, respectively; the completion of a "Final Use Attainability Report" by January 1988; and the adoption, as appropriate, of revised Surface Water Quality Standards by May 1988. This schedule was developed to coincide with the schedule for the next triennial review of the Department's entire Surface Water Quality Standards, and the Department expects that the "Final Use Attainability Report" will be formally considered as part of the next triennial review. The provisions of the Department's Surface Water Quality Standards that are applicable to the New Jersey portion of the Delaware River Basin cannot

be less stringent than, and should be fully consistent with, the prevailing "Basin Regulations - Water Quality" adopted by the DRBC as part of the DRBC Comprehensive Plan (and referenced in N.J.A.C. 7:9-4.5(b)1). To promote such consistency and prevent unnecessary duplication, the Department and DRBC should, if practicable, coordinate their administrative procedures by such means as joint public notices and public hearings.

- b. Triennial Surface Water Quality Standards Review

The Department expects to use the normal administrative procedure for the comprehensive review of the entire Surface Water Quality Standards that is scheduled for completion by May 1988, including the holding of informational meetings, public hearings and a public comment period, final adoption in accordance with the New Jersey Administrative Procedure Act, and submission to the EPA.

It would now be premature for the Department to attempt to identify all of the priority topics for review between 1985 and 1988. The Department has just adopted new Surface Water Quality Standards, and its subsequent review of those Standards would benefit from experience gained during their implementation. A major factor in the review of these Standards is the future publication of proposed and final EPA section 304(a) Guidance (the schedule for which is not fully predictable). Several priority topics have already been identified and are discussed in this Strategy. The Department may identify additional priority topics as EPA proposes or adopts new Section 304(a) Guidance or revises its water quality standards policies, and as the Department gains experience during the implementation of the Standards, prepares future annual work programs under section 205(j) of the federal Clean Water Act, updates the Statewide WQM Plan, and meets with various interest groups.

- c. Water Quality Criteria for Toxic Substances

When the Department adopts maximum contaminant levels for finished drinking water under A-280, it expects to develop a schedule for the subsequent formal proposal of human health related water quality criteria for inclusion in the Surface Water Quality Standards. If the formal proposal occurs prior to the next triennial review of the entire Surface Water Quality Standards, the same basic administrative procedures would be followed for such a proposal as would be followed for the next triennial review. After the EPA publishes final Section 304(a) Guidance for un-ionized ammonia, metals, and other toxic pollutants as related to the protection of aquatic life (as EPA did for some of these substances in July 1985), the Department likewise expects to develop a schedule for the review of water quality criteria.

- d. Water Quality Criteria for Chlorine

The major task of the chlorine criteria review will be to evaluate EPA's recently revised 304(a) chlorine water quality criteria for the protection of aquatic life, which became available in July 1985. During the recent triennial review the Department delayed a review of

its existing chlorine criteria pending the availability of the revised EPA criteria.

The Department also plans to investigate the need for additional chlorine criteria designed to protect aquatic life from intermittent exposures to chlorine. The Department's existing criteria, as well as EPA's revised criteria, were developed using toxicological data based on continuous chlorine exposure. Available scientific evidence, submitted to the Department during the public comment period, indicates that utilizing these criteria to develop water quality based effluent limitations for intermittent chlorine dischargers (i.e., once-through cooling water dischargers) is overly restrictive. A limited exemption for certain intermittent dischargers of chlorine was therefore included in the present Surface Water Quality Standards (N.J.A.C. 7:9-4.6(c)6). Among other things, the Department intends to review approaches to intermittent chlorine discharges that have been adopted by several other states.

If the Department proposes revisions to the chlorine criteria in the Surface Water Quality Standards prior to the next triennial review of the entire Surface Water Quality Standards, the same basic administrative procedures would be followed for such a proposal as would be followed for the next triennial review.

e. Morses Creek and Cuckels Brook Reclassification

The Department may give notice of public hearings on the requested reclassifications of portions of Morses Creek and Cuckels Brook for less restrictive uses in late 1985 or early 1986. The Department will evaluate the revised reclassification requests against the substantive requirements of N.J.A.C. 7:9-4.10.

f. Mapping of FW1 Waters

The mapping of FW1 waters on U.S. Geological Survey 7.5' base maps is expected to be completed by June 1986. If the Department identifies erroneous or incomplete listings of FW1 waters as the mapping proceeds, the Department expects to propose to correct such listings or to upgrade additional waters to FW1 as part of the next triennial review of the entire Surface Water Quality Standards. (Under N.J.A.C. 7:9-4.11(b), the Department could also upgrade classifications before the next triennial review if the Department received a petition to do so.)

2. Shellfish Waters Restoration and Protection

• Background

The general policy of the Department toward shellfish growing waters is discussed in the New Jersey Surface Water Quality Standards (section N.J.A.C. 7:9-4.5(a)6). This, in essence, states that the objective of the Department is to restore tidal waters that are unacceptable for unrestricted shellfish harvesting to levels that will permit such use. It is also the policy of the State to restore, enhance and maintain the chemical, physical and biological integrity of its waters, and to protect public health.

The shellfish resources of New Jersey (i.e., clams, mussels and oysters), currently support a commercial fishery with a dockside value in excess of \$30 million, as well as an important recreational fishery. Pollution, habitat destruction, the tremendous demand for seafood, and in some cases, other environmental factors have placed a heavy burden on New Jersey's shellfish population.

Although exhibiting natural cyclical variations, the hard clam harvest has experienced a steady decline over the past 40 years. Much of this decline has been the result of the closing of shellfish beds because of pollution. The closure of between 90,000 and 100,000 acres of the State's more heavily polluted hard and soft clam waters was instituted for the protection of the public health. In an effort to allow harvesting of shellfish from moderately polluted areas, the State has authorized purification programs (i.e., depuration, relay) that have proven capable of rendering certain shellfish suitable for human consumption. The harvesting of soft clams on the Navesink and Shrewsbury Rivers, which comprise virtually 100% of this resource in the state, is now only possible through the operation of depuration plants which purify the clams before sale.

To ensure that shellfish do not endanger the public health, and continue to provide for the State's commercial and recreational needs, it is essential that these resources be effectively protected from point and nonpoint sources of pollution. The protection of consumer health demands that an assessment and identification of pollution sources in watersheds which impact shellfish waters, be followed by a comprehensive and cooperative effort by federal, state and local agencies to manage those sources.

From a historical perspective, the elimination of most of the small sewage treatment "package" plants, which discharged to back bays (a prime shellfish habitat), has generally resulted in the improved sanitary quality of shellfish waters in many areas of the state, and has culminated in upgraded growing water classifications in some of these areas. In other areas the elimination of recognized point sources of pollution, principally backbay discharges, has significantly diminished bacterial loadings, although not enough to permit upgrading of the waters. In such cases, nonpoint sources of pollution have been identified or suspected as being responsible for

the continued poor sanitary quality of growing waters. Based on the successful efforts of the Division to regulate point source dischargers, as well as to promote the implementation of the "regional" concept of sewage treatment, it is generally acknowledged that nonpoint source pollution now represents the major impact to estuarine shellfish waters in New Jersey, outside of the New York Harbor area.

The Department utilizes the guidelines for the "Sanitation of Shellfish Growing Areas" developed by the U.S. Food and Drug Administration, to assess the sanitary quality of shellfish growing waters. A comprehensive sanitary survey for each growing area includes an evaluation of all sources of actual or potential pollution on the estuary and its tributaries, and attendant factors. The Division's Bureau of Shellfish Control is responsible for conducting growing area surveys and classifying shellfish waters. Where appropriate, the Bureau utilizes the resources of other Bureaus within the Department, as well as other agencies and institutions, to assess pollution sources and their relative degree of contribution to an estuary and/or its tributaries. This provides for a coordinated and comprehensive approach to pollution source identification. Other programs in the Department (e.g., Enforcement, Planning and Standards, Shellfisheries) as well as outside agencies (county and municipal health departments), can provide valuable information (e.g., Intensive Surveys) on specific pollution sources and their magnitude.

The Sanitary Survey, in conjunction with an Intensive (land-based) Survey where appropriate, includes a watershed assessment and land use analysis to determine potential point and nonpoint sources of human and animal waste originating from:

- a. sewage treatment plants and other sanitary sewerage facilities
- b. treatment plants not meeting NJPDES permit conditions
- c. septic system failures
- d. urban/suburban stormwater runoff
- e. agricultural waste
- f. marinas

Subsequent to the identification of pollution sources in a watershed, Division effort will focus on the degree of contamination from all sources, the potential for improving, upgrading, and/or preventing further degradation of the waters, and developing a comprehensive action plan for pollution control implementation throughout the watershed. The Bureau of Planning and Standards nonpoint source control project in the Navesink River, which identified sources and developed controls for pollution in shellfish growing waters, is referred to as an example (see reports entitled: Bacterial Contamination of Shellfish Harvest Areas in the Navesink River, June, 1982) (NJDEP), and the Navesink Watershed Plan, 1985 (USDA).

• Objective

It is the objective that a comprehensive shellfish water quality planning and management strategy be implemented with a focus on the identification and control of all point and nonpoint pollution sources in a watershed. The identification of nonpoint pollution sources, and the institution of mitigative measures for their control by federal, state and local cooperative action, will be performed in conjunction with the regulation of new and existing point sources of pollution by the Division. By encouraging and integrating water pollution management activities by appropriate governmental agencies and private concerns, a unified approach to shellfish harvesting protection and restoration will evolve.

In addition, the New Jersey Surface Water Quality Standards classify certain shellfish waters in the state, which possess exceptional resource value, as "Category One Waters" for the purpose of implementing the following Antidegradation Policy:

Category One waters shall be protected from any measurable changes (including calculable or predicted changes) to the existing water quality. Water quality characteristics that are generally worse than the water quality criteria, except as due to natural conditions, shall be improved to maintain or provide for the designated uses where this can be accomplished without adverse impacts on organisms, communities or ecosystems of concern.

• Strategy

The implementation of point and/or nonpoint source pollution controls will be coordinated by the Division. Integral components of such a shellfish water quality management plan will include:

- a. Point Sources
 - i. Enforcement of NJPDES permit conditions for existing permitted dischargers not in compliance, and issuance of NJPDES permits to newly identified point sources of pollution (N.J.A.C. 7:14A-1 et seq.).
 - ii. Correction of combined sanitary/storm sewer systems.
 - iii. Identification and control of malfunctioning sewage pump stations, and sanitary sewer overflows during storm events.
 - iv. Requiring, as a State permit condition, wastewater facilities for new or expanded marinas or projects which have boat docking facilities as part of their plans, provided that such marinas or boat docking facilities have been deemed acceptable by the Division.
- b. Malfunctioning Septic Systems

The development of plans in conjunction with county/municipal health or sewerage agencies for assessment of septic system overflows and the need for corrective measures where associated pollution of the estuary has been found.

c. Urban/Suburban Stormwater Runoff

- i. Selective storm sewer sampling by the Department and/or local health agencies to determine problem outfalls (e.g., illegal connections).
- ii. The development of a system to "flag" storm sewer rehabilitation projects in suburban communities (e.g., during the stream encroachment application process). This will provide the opportunity to discuss with the county or municipal planning board and/or engineering department what alternatives would be most appropriate for mitigating pollution conveyed by storm sewers to the estuary.
- iii. The development and enforcement of municipal dog control ordinances, increased penalties for ordinance violation, and a public awareness campaign (via dog license renewal enclosure, newspaper and radio, and sign postings) within the context of shellfish restoration and protection efforts in specific waterways.
- iv. Evaluation of structural measures (e.g., detention, chlorination).

d. Agricultural Stormwater Runoff (Livestock Waste)

- i. Site-specific sampling to isolate and identify sources of bacterial contamination from livestock farms in the watershed.
- ii. Comprehensive agricultural animal waste management in watersheds where livestock concentrations are a documented or potential contamination source to the estuary or its tributaries. The development of animal waste management practices in the watershed is the responsibility of the Soil Conservation Districts (designated during the initial 208 Water Quality Management Planning Process as the local management agencies in New Jersey for control of nonpoint sources of pollution generated from agriculture) and their technical advisory agency, the Soil Conservation Service (U.S.D.A.). The Soil Conservation District and Soil Conservation Service, in cooperation, will develop Conservation Plans at the authorization of the farmer, which will contain acceptable U.S.D.A. practices of a permanent nature.
- iii. Identification of appropriate funding sources to cost-share the implementation of effective Best Management Practices for mitigating agricultural nonpoint source pollution.

- e. Follow-up monitoring, by the Department and/or local health agencies, of the estuary and its tributaries to gauge the response of these waters to the installation of management practices. This will be performed in conjunction with a reclassification survey of the shellfish growing waters by the Bureau of Shellfish Control, in order to determine if upgrading of the waters is warranted.

3. Trout Waters Protection

• Background

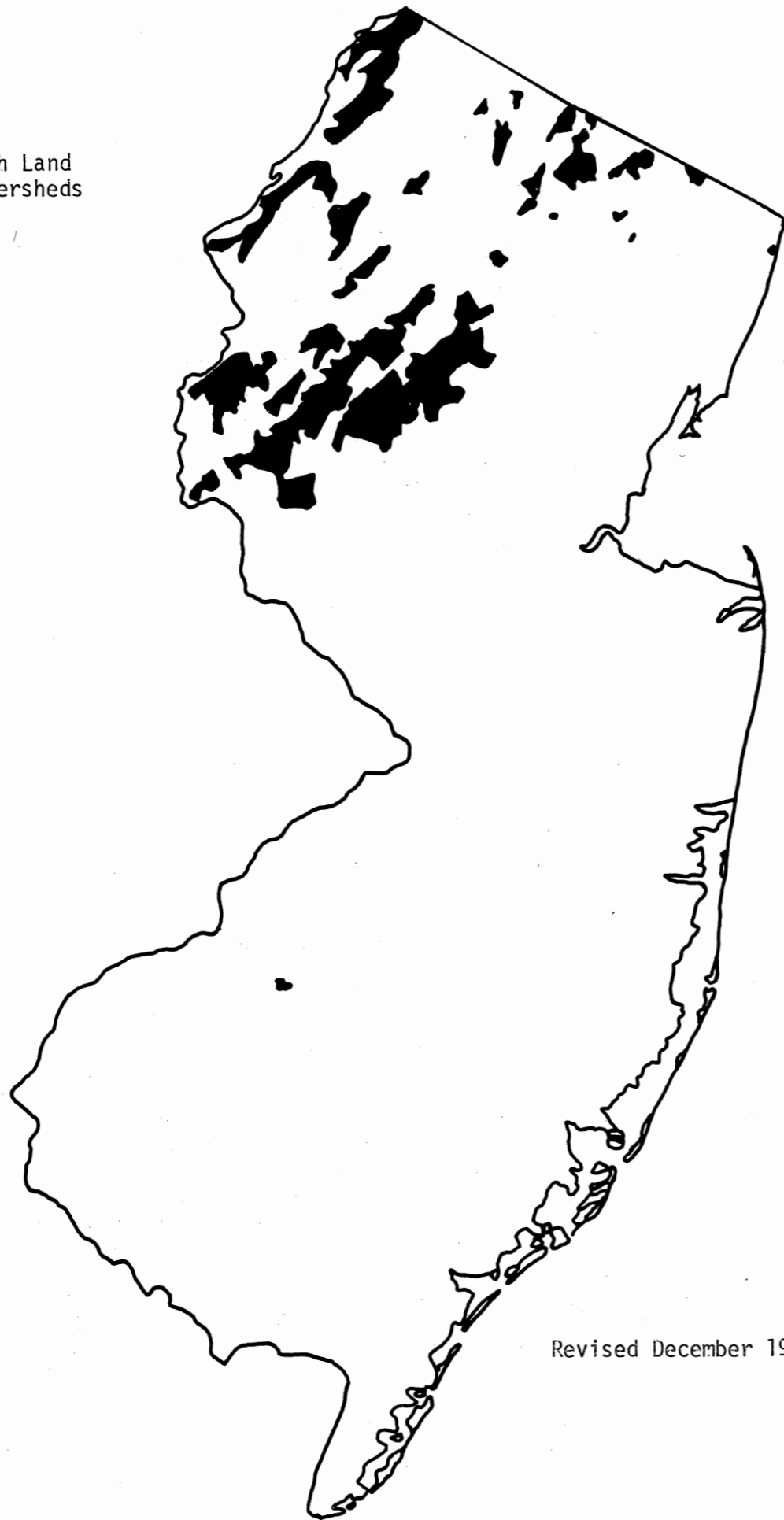
Trout are highly sought gamefish which require high quality water and habitat for spawning or nursery purposes ("trout production waters") or for survival throughout the year ("trout maintenance waters"). Healthy trout populations in streams or lakes require cool, clear, oxygen-rich water free of serious pollution. Just as importantly, healthy trout populations in streams require a favorable stream habitat rich in pools, riffles, with silt-free gravel beds and rubble, an absence of artificial obstructions to fish movement, and abundant streamside vegetation (preferably trees, in most cases) to provide shade, cover, and food for the insects and other invertebrates in the food web on which trout depend. Shading of trout streams by vegetation is especially important in New Jersey where summer water temperatures are already marginal in many cases.

Activities by the Department and its predecessor agencies to identify trout waters and recognize them in official Surface Water Quality Standards began in the 1960's. Subsequently, some of the initial areawide WQM Plans recognized the environmental sensitivity of trout waters, and assigned them a "moderate" to "high" priority for planning activities. In 1979, the Department's Division of Water Resources and Division of Fish, Game and Wildlife initiated the "New Jersey Trout Waters Protection Project" to increase the recognition accorded trout programs for their protection and restoration.

One product of the project was the report entitled "Basic Information About New Jersey Trout Waters" (July 1982; revised October 1983). Included in that report, and also cited as a reference in the Department's Flood Hazard Area Regulations, is a report entitled "Classification of New Jersey Waters as Related to Their Suitability for Trout", which is periodically revised to contain the most current listing of trout waters, and which also identifies the particular species of trout (brook, brown, or rainbow) found in each of New Jersey's trout production streams. This report was used in the drafting of the Department's present Surface Water Quality Standards. Figures 2 and 3 show the approximate location of areas of New Jersey with land in trout production and trout maintenance watersheds. The "Basic Information About New Jersey Trout Waters" report shows the approximate location of these watersheds on an 11"x17" map that includes stream networks and county and municipal boundaries. The trout production and trout maintenance waters have also been mapped on U.S. Geological Survey 7.5 minute topographic maps, which are available for inspection in the offices of the Division of Water Resources, Bureau of Planning and Standards. For the Department's regulatory functions, the official reference is the Department's Surface Water Quality Standards.

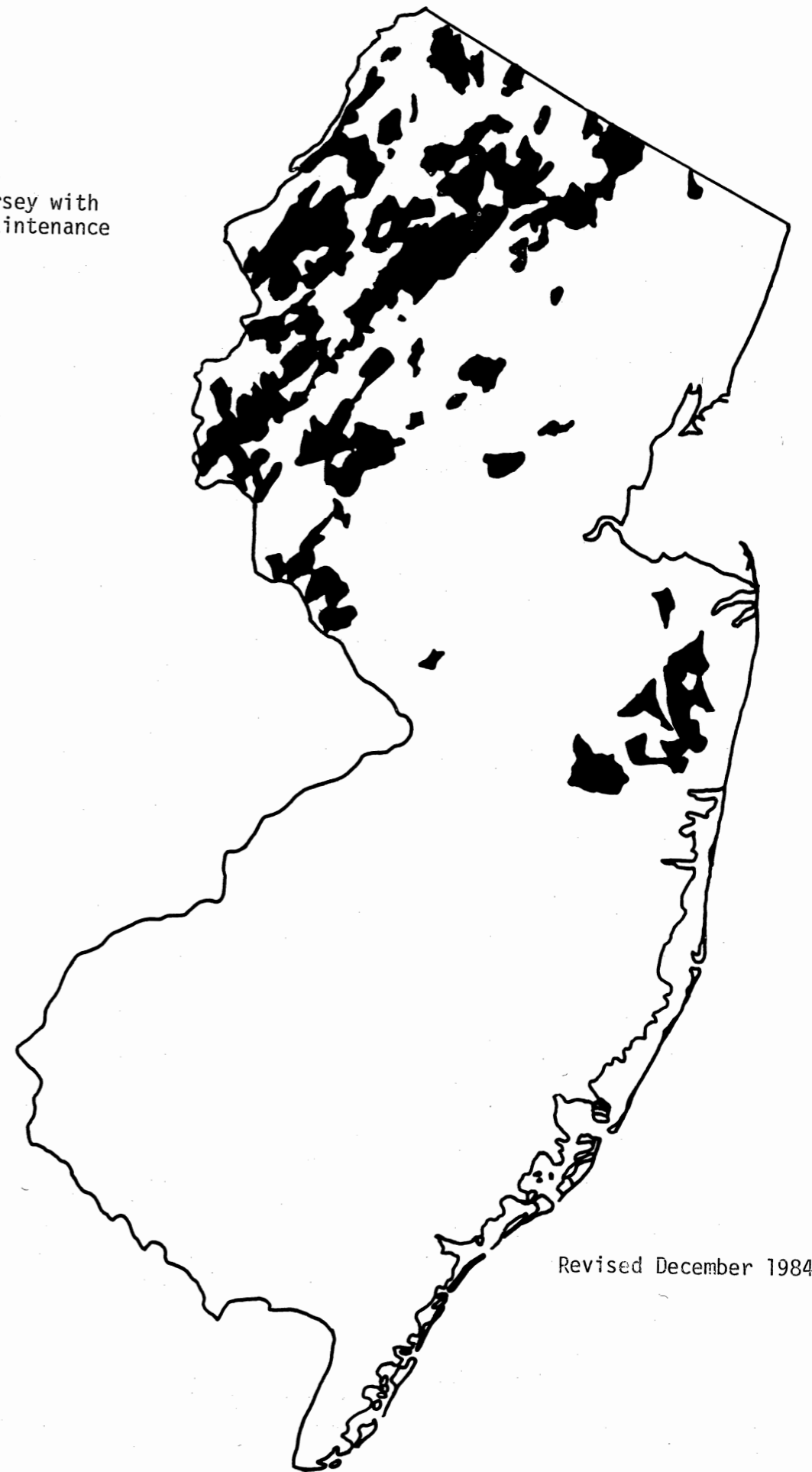
In the Department's present Surface Water Quality Standards (N.J.A.C. 7:9-4), the great majority of New Jersey's fresh surface waters (outside the Pine Barrens) are classified as FW2. The FW2

Figure 2
Areas of New Jersey with Land
in Trout Production Watersheds



Revised December 1984

Figure 3
Areas of New Jersey with
Land in Trout Maintenance
Watersheds



Revised December 1984

classification is subdivided into three sub-categories: FW2-TP (trout production), FW2-TM (trout maintenance), and FW2-NT (nontrout). The water quality criteria for suspended solids, dissolved oxygen, temperature, and un-ionized ammonia are more stringent for FW2-TP and FW2-TM waters than they are for FW2-NT waters. In addition, the Surface Water Quality Standards identify all FW2-TP waters (and other upstream from these waters) as Category One Waters for purposes of antidegradation policy.

Another product of the New Jersey Trout Waters Protection Project was the report entitled "Literature Review on Degradation of Trout Habitat from Stream Encroachments" (July 1982, revised December 1982). On May 21, 1984, comprehensive Department Flood Hazard Area Regulations became effective (N.J.A.C. 7:13-1.1 et seq.). As a result of the New Jersey Trout Waters Protection Project, these regulations include special provisions for the protection of trout waters as well as additional provisions for the protection of fisheries statewide. Also, the Division's "Technical Manual for Stream Encroachment" (August, 1984) includes "Technical Notes Concerning Trout Streams" and a copy of the report, "Classification of New Jersey Waters as Related to Their Suitability for Trout" (October 1983 version). The Division also prepared a report (December 1983) entitled "Technical Basis for 25-Foot-Wide and 50-Foot-Wide Buffer Strips."

Trout waters (and their watersheds) are a valuable natural resource whose recognition in municipal master plans adopted pursuant to the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.) should be encouraged. In August 1982, the Tewksbury Township Planning Board adopted an amendment to the Tewksbury Master Plan whose preparation was assisted by the Department as part of the New Jersey Trout Waters Protection Project. This amendment can be considered a model (subject to local modifications and minor changes to reflect the Department's present Surface Water Quality Standards) for other municipalities which desire to amend their master plans to recognize trout waters. Municipal ordinances pursuant to the Municipal Land Use Law would be very useful to control the removal of trees and other vegetation within 50 feet of either bank of perennial trout waters.

A policy statement concerning soil conservation district review and inspection of projects that may adversely impact trout production and trout maintenance waters was adopted by the State Soil Conservation Committee on July 11, 1983. The policy statement provides for the identification of projects which may adversely affect trout waters, and for scheduling of inspections of such projects to ensure the implementation of the certified soil erosion and sediment control plan. Reports which list trout waters in individual counties and identify the most critical times of year for these trout waters were distributed to the appropriate soil conservation districts in September 1985.

● Objective

The general objective of the New Jersey Trout Waters Protection Project is to increase the recognition accorded trout waters by all levels of government and to recommend programs for their protection and

restoration. The current, specific objective of the project is the completion of activities for which some groundwork has already been established.

● Strategy

Strategies for the revision of current Department Surface Water Quality Standards are presented elsewhere in this Statewide Water Quality Management Plan. Other strategies to achieve the above objective are described below:

a. Basic Information

The "Basic Information About New Jersey Trout Waters" report, whose main text was last revised in October 1983, needs to be updated to recognize such events as the Department's adoption of Flood Hazard Area Regulations, new Surface Water Quality Standards, and the Statewide WQM Plan in 1984 and 1985. The Department's maps of trout waters on U.S. Geological Survey 7.5 minute quadrangles need to be modified in response to the revised format for stream listings in the Department's present Surface Water Quality Standards.

b. Flood Hazard Area Regulations

The Department has adopted a set of Flood Hazard Area Regulations to implement the Flood Hazard Area Control Act. These regulations increase the number of stream encroachment applications that may be approved by "delegated agencies" such as county engineers. Much of the trout waters information necessary for State and local officials and applicants is included in the "Technical Manual for Stream Encroachment." That information needs to be updated, however, and the Division stills needs to transfer to "delegated agencies" information about the detailed locations of trout waters as mapped on U.S. Geological Survey quadrangles on file with the Division.

c. Municipal Land Use Law

Future Department efforts to encourage recognition of trout waters in municipal master plans will be closely coordinated with future Department efforts to encourage municipalities to review their land use ordinances to ensure the protection of vegetation along trout waters. The Department will seek to identify and provide technical assistance to municipalities around the state that are interested in the protection of trout waters through the Municipal Land Use Law.

d. Soil Erosion and Sediment Control Act

Pursuant to the State Soil Conservation Committee policy concerning trout waters, the Division of Water Resources will further assist soil conservation districts (SCDs) by mapping the trout production and trout maintenance waters in each district.

The Division expects that it will first assist the SCDs in Hunterdon, Morris, Sussex and Warren Counties (which contain most of the trout production waters) and then assist the other SCDs that have trout waters.

4. Lake Restoration and Management

- Background

The major elements of the Division's Lakes Management Program include conducting lake and watershed studies, implementing restoration projects and providing technical review and support to Departmental Elements and county and municipal agencies. Major funding sources for carrying out the projects include EPA Clean Lakes Program grants, designated funds within the Division and special appropriated funds by the State Legislature. The Division actively encourages that Clean Lakes studies be undertaken by local agencies for high priority lakes, and provides consultation services on Clean Lakes issues for local, state and federal agencies involved with water quality management and water resources planning.

The Clean Lakes Program has served to integrate planning and implementation for the two largest lakes in the State: Lake Hopatcong and Greenwood Lake. The Lake Hopatcong diagnostic/feasibility study is the focal point for the development of a basin-wide lake management plan through the coordination of federal Clean Water Act programs. The Greenwood Lake study has assisted local planning agencies in developing a comprehensive township master Plan and in unifying interstate efforts for protection and management of the lake and the watershed.

Program Status

The New Jersey Lakes Classification study has been completed. This study incorporated water quality assessment, biological evaluation, calculation of pollutant loadings, and restoration strategies for 25 priority lakes throughout the State.

Diagnostic/Feasibility studies, which will include final lake restoration plans, have been reviewed and adopted for Etra Lake (Mercer County), Greenwood Lake (Passaic County, New Jersey and Orange County, New York), Lake Hopatcong (Sussex and Morris Counties), and Weequahic Lake (Essex County). Feasibility and final design studies for Woodbury Lake (Gloucester County) and Sylvan Lake (Burlington County) are proceeding.

Restoration programs for Lake Hopatcong and Etra Lake were initiated in FY 1985. Lake Hopatcong is the subject of a major aquatic weed harvesting program to improve recreational use and water quality. Stormwater control, public education and water quality monitoring are the other major elements in this \$407,000 project. Seventy-five thousand cubic yards of bottom sediment are scheduled to be removed from Etra Lake. This will increase the average depth from 3.6 feet to 6.0 feet, reduce nuisance aquatic vegetation and improve recreational use. A state-funded matching grant is anticipated for the restoration of Mac's Pond (Manasquan Borough, Monmouth County) in FY-1986. Activities included are dredging, shoreline stabilization, and construction of an upstream sedimentation basin.

Restoration programs will continue at Allentown Lake (Monmouth County), North Hudson Park (Hudson County), and Weequahic Lake (Essex County) through 1985. Actual construction activities will be performed by private contract under the supervision of the local government and the Department's Lakes Management staff. These projects are jointly funded by the Clean Lakes Program and New Jersey Green Acres.

The Lakes Management Program will also render technical review, assistance and support in appropriate circumstances, including:

- a. The Division of Water Resources and The Division of Fish, Game and Wildlife, by letter of agreement, will jointly administer the State Aquatic Vegetation Program. The Division of Water Resources will continue to coordinate intra-departmental technical review.

The Division of Fish, Game and Wildlife will prepare the Request for Proposal and supervise and evaluate the work of the contractor.

- b. The Program will delegate routine pollution complaint investigation to local health agencies through substate agreements. The Lakes Management staff will provide technical assistance and support to the health agencies as required.

● Objective

The objectives of the Lakes Management Program are to develop lake management practices and restore the State's priority public lakes.

● Strategy

Since the inception of the Lakes Management Program in New Jersey, the implementation of diagnostic/feasibility studies on priority lakes has proven to be a valuable and effective approach for assessing point and nonpoint source pollution impacts.

As a result of the successful problem identification process, major emphasis in New Jersey's Lakes Management program has shifted from diagnostic/feasibility studies to the implementation of cost-effective lake restoration plans (see Table 1). The implementation controls for bacteria, sediment and nutrients will be stressed in addition to in-lake improvements.

Lake-specific watershed management plans will be developed by the Department and/or federal, state and local agencies cooperatively, and will involve one or more of the following:

- a. improvements in stormwater quality, by developing comprehensive stormwater management plans or retrofitting existing systems,
- b. reductions in agricultural pollutants through coordination with the Soil Conservation Service,
- c. elimination of failing septic systems by encouraging sewerage of lakeshore areas or creation of septic tank management districts,

Table 1. Lake Restoration Projects

PROJECT	PHASE	TOTAL COST (\$)	RESTORATION RECOMMENDATIONS	IMPORTANCE
Allentown Lake Monmouth Co.	Implementation	826,619	Dredging accumulated sediment and rooted vegetation. Shoreline stabilization.	Local, county, state and federal coordination. Restore fishing and boating. Part of major municipal park development.
North Hudson Park Hudson Co.	Implementation	1,284,696	Dredging Stormwater management Park rehabilitation	Urban park restoration Restore fishing and improve general aesthetics in a highly utilized park.
Weequahic Lake Essex Co.	Diagnostic/ Feasibility Study	133,707	Outlet repair Erosion control Stormwater management Bank stabilization Limited dredging Public education	Region II's urban initiative projects. Model park for County Park Rehabilitation Project. Restore fishing and boating.
	FY83 grant for implementation	454,000		
	FY85 supplemental EPA grant (700,000) for remaining activities	1,400,000	Restoration recommendations Additional dredging Bank stabilization Outlet modification and repair	
Lake Hopatcong Sussex- Morris Co.	Diagnostic/ Feasibility Study Completed Restoration Plan 7/83	116,599	Additional lake shore sewerage through 201 program. Develop comprehensive stormwater management plan for watershed	New Jersey's largest lake underwater park. Plan will integrate 208, 201, and stormwater management programs into Comprehensive Lake Management/Restoration Plan.
	Implementation	407,000	Aquatic weed harvesting Stormwater control public education	Improve recreational use and maintain viability while implementing long term nutrient reduction programs.

Table 1. cont'd.

PROJECT	PHASE	TOTAL COST (\$)	RESTORATION RECOMMENDATIONS	IMPORTANCE
Greenwood Lake Passaic Co., N.J. Orange Co. N.Y.	Diagnostic Feasibility Study Completed Restoration Plan 5/83	140,333	Stormwater Control Sewering Dredging	Inter-state project Greenwood Lake Watershed Management district was created to coordinate interstate watershed management activities
Etra Lake Mercer Co.	Diagnostic/ Feasibility Study Completed Lake Restoration Plan 3/83	83,333	Dredging	Complement the East Windsor Township Park Development
	Implementation	546,000	Dredging Sedimentation basin	Restore fishing, boating and complement adjacent park development.
State Classification Study	Intensive surveys pollutant loading restoration strategies	146,209	Lake specific recommendations include: dredging, watershed management, erosion control, bank stabilization, weed harvesting, sewerage and septic system improvements.	Develop restoration strategies for 25 priority lakes throughout state. Priority list for future lake restoration funding
Sylvan Lakes Burlington Co.	Feasibility Study Engineering Design	68,000	Dredging stormwater control	Lake restoration will be part of dam rehabilitation project. Non-federal project. Improve boating and fishing.
Woodbury Lake Gloucester Co.	Feasibility Study & Engineering Design	40,000	Dredging Shoreline stabilization Stormwater control	Improve urban boating and fishing Non-federal project

II-22

d. Improvements in sewage treatment plant effluents where necessary.

II-23

Acid-Producing Deposits

● Background

Several geologic formations in the Coastal Plain physiographic province in New Jersey sometimes contain deposits with iron sulfide minerals (pyrite or marcasite). Upon exposure to oxygen from the air or from surface waters, these deposits produce sulfuric acid. This acid increases the solubility of metals to the extent that the metals can become toxic to aquatic life or land vegetation, or can reach concentrations undesirable in sources of potable water supply. With pH readings in some cases as low as 2.3 in soils and surface waters, no plant species will survive on land, and no fish will survive in water, until remedial measures are applied and take effect.

Because considerable environmental damage can occur in the time between the development of extremely acid conditions and the application of remedial measures, and because remedial measures may sometimes not be practicable or successful, preventive as well as remedial measures should be considered to control the exposure of acid-producing deposits for stream encroachments and other purposes. Preventive measures can also reduce the expense of remedial measures in some cases. Inconsistencies have developed in recent years between the preventive and remedial measures required by the Department and the more limited remedial measures included in the current "Standards for Soil Erosion and Sediment Control in New Jersey."

The current "Standards for Soil Erosion and Sediment Control in New Jersey" include "Standards for Permanent Vegetative Cover for Soil Stabilization" which state that "soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before seedbed preparation." Two U.S. Department of Agriculture, Soil Conservation Service publications (NE Technical Note PM No. 9 "Use of Lime and Soil Cover to Provide Vegetation on Extremely Acid Soils" and New Jersey Technical Note 28 "Vegetation of Acid Soils") provide additional technical recommendations concerning lift material, lime requirement tests, lime application, and plant species. These publications partially address the problem of acid-producing deposits but do not, in the Department's present judgement, give sufficient attention to preventive approaches that could minimize the rate and geographic extent of acid production. For example, where it is known from pre-construction investigation that acid-producing deposits would be encountered on a particular construction site, steps could be taken to prevent the prolonged exposure of acid-producing deposits (where practicable) and to prevent the indiscriminate spreading of acid-producing material onto uncontaminated soil. Preventive measures could be particularly important where high water tables would permit the movement of extremely acid ground water into lift material.

In recent years, the Division has become concerned about acid-producing deposits in its review of proposals for construction of sewerage facilities, interstate highways, State-owned reservoirs, and stream

channelization projects. For example, the "acid soils" problem was discussed at length in the "Environmental Impact Analysis for the Proposed Manasquan Reservoir System Project" (June 1978) prepared for the Division by Rutgers University, and the "disruption of pyritic/marlitic (acid) soils" was a major issue in the Division's review of a proposed Corps of Engineers Flood Control Project along Pine Brook in Monmouth County. Division staff prepared and distributed guidelines entitled "Specifications for Construction in Acid Soils" and "Acid Soil Mitigation Procedures."

On May 21, 1984, comprehensive Department Flood Hazard Area Regulations became effective (N.J.A.C. 7:13-1.1 et seq.). These regulations list nine Coastal Plain geologic formations in which acid-producing deposits are sometimes found, and include special provisions to control the exposure of acid-producing deposits resulting from construction within floodway or encroachment lines. Included are provisions for site evaluation and mitigation plans, chemical and physical analysis of soil material samples, and the application of preventive and remedial mitigative measures to minimize the production of acid and to promote the establishment of vegetation. Projects which would expose acid-producing deposits along more than 50 feet of stream channel are classified as "Projects of Special Concern" which will not be approved except in special circumstances.

Specific mitigation measures are described in the "Technical Notes Concerning Acid-Producing Deposits" included in the Division of Water Resources "Flood Plain Management Technical Manual, Stream Encroachments" (August 1984). Figure 4, which is included in these "Technical Notes," identifies the general location of the nine geologic formations listed in the adopted regulations (Raritan Formation, Magothy Formation, Merchantville Formation, Woodbury Clay, Englishtown Sand, Marshalltown Formation, Navesink Formation, Red Bank Sand, and Kirkwood Formation).

This report includes guidance for site evaluation and descriptions of simple chemical tests for acid-producing deposits. The mitigation procedures described in this report can be applied where land is disturbed for stream encroachment or other purposes.

● Objective

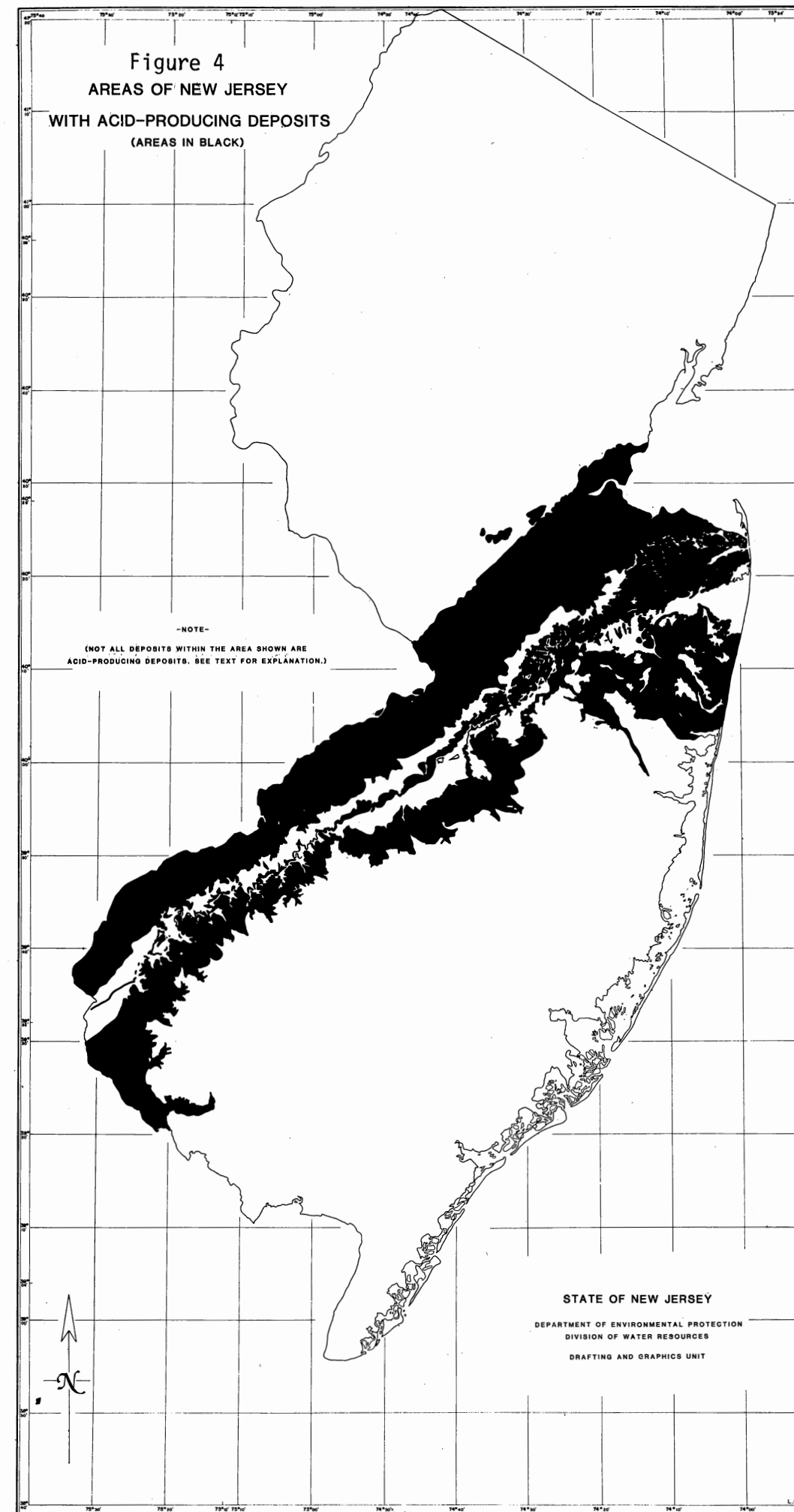
The Department's present objectives regarding acid-producing deposits are as follows:

a. Flood Hazard Area Regulations

The implementation of comprehensive Flood Hazard Area Regulations to control the exposure of acid-producing deposits resulting from construction of stream encroachments.

b. Soil Erosion and Sediment Control Act

The achievement, if possible, of greater consistency between provisions for acid-producing deposits required by the Department



and provisions for acid-producing deposits in the "Standards for Soil Erosion and Sediment Control in New Jersey."

- Strategy

By themselves, the Flood Hazard Areaa Regulations only partly address the problem of acid-producing deposits. In particular, these regulations do not control the exposure of such deposits outside floodway or encroachment lines, or control their exposure for "non-regulated uses" such as residential lawns and gardens. As described below, the problem of acid-producing deposits may warrant additional attention in the "Standards for Soil Erosion and Sediment Control in New Jersey."

Acid-producing deposits are exposed in uplands and lowlands by land disturbance which, except for agriculture and horticulture, is generally subject to regulation pursuant to the Soil Erosion and Sediment Control Act. The exposure of acid producing deposits creates erosion hazards, among other problems. Preventive mitigation procedures for acid-producing deposits include the on-site identification of such deposits and the on-site management of such activities as the excavation, stockpiling, backfilling, and liming of soil material. There is an obvious, close relationship between the management of acid-producing deposits (a special type of soil material) and activities addressed administratively and technically by the Soil Erosion and Sediment Control Act and the "Standards for Soil Erosion and Sediment Control in New Jersey."

Because the Division has perceived a need to supplement the provisions for acid-producing deposits in the current "Standards for Soil Erosion and Sediment Control in New Jersey," the Division has, in recent years, proposed or identified additional management practices for projects within its purview (see "Background" section above). However, in the future, it would be desirable to achieve, by mutual agreement between the Department and the State Soil Conservation Committee, greater consistency between DEP requirements and the "Standards for Soil Erosion and Sediment Control in New Jersey." The Department, through its representation on the State Soil Conservation Committee, will endeavor to persuade the Committee to review the provisions for acid-producing deposits in Department documents and the current "Standards for Soil Erosion and Sediment Control in New Jersey," and to make recommendations for modifications to achieve greater consistency.

6. Water Quality/Water Supply Integration

- Background

Recent drought conditions have exacerbated the impact of wastewater discharge on water quality due to extreme low flow conditions in streams. In addition, proposed water supply projects may have significant implications for existing and proposed wastewater treatment projects. These problems are particularly acute in the northeast counties of the State.

A number of dischargers are located upstream of some potable water intakes in New Jersey. This situation causes treatment of such waters for potable use to be more difficult and expensive. Conversely, because of drought-induced exceptionally low flows, water supply demands on reservoir systems necessitated the reductions of letdown requirements. This activity further reduced dilution water for wastewater discharges, resulting in a further degradation of water quality. This in turn, causes an additional burden on wastewater treatment operations and on water purveyors.

- Objective

The broad objective is to ensure, through an integrated program, that the recommendations of the State Water Supply Master Plan are coordinated with water quality requirements and wastewater management programs prior to their implementation. The immediate objective is to provide adequate water supplies to all regions of the State.

- Strategy

The specific projects, proposed in accordance with the Water Supply Master Plan, will be examined as to their implications for the wastewater management process and their impact on water quality.

Possible issues to be examined include: management of multiple sources of potable water to augment available supplies to reservoirs; and inter-basin transfers of water for the primary purpose of water supply, but with a secondary benefit of allowing for improved instream quality or reduced levels of treatment for dischargers in the watershed due to the increased assimilative capacity available.

Results of evaluations will be coordinated with water supply proposals and wastewater management programs in the Department which could result in refinements to either program. Specific water supply and wastewater treatment proposals or existing facilities may be modified to reflect water quality impacts.

Among the projects which will be conducted in the study of water quality/water supply relationships and the development of needed protective measures are: Low Flow Yield Project, Manasquan River Study, Wanaque South Water Supply Project, Passaic River Water Quality

Study, South River Water Supply Study, Camden Metropolitan Water Supply Study and the County Demonstration Projects. Each of these projects is briefly discussed below.

- a. Safe Yield Study - Northeast: This project, being conducted by the New Jersey Institute of Technology under contract to the Department, seeks to establish safe yields of existing reservoirs in the northeast and to analyze various alternative water supply projects. Among the several alternatives examined are: piping in water, constructing a new reservoir in the Newark watershed, building the Long Valley Reservoir, Washington Valley Reservoir, and additions to the Jersey City System.
- b. Manasquan River Study: This project, being carried out by the New Jersey Water Supply Authority, will examine the feasibility of the proposed reservoir in the Manasquan River Basin. The study includes preliminary design, cost-effectiveness analysis, and an environmental assessment of the project.
- c. Wanaque South Water Supply Project: The Division will be coordinating and providing direction in a study being conducted by the Hackensack Water Company and the North Jersey Water District. The project is seeking to ensure that water quality objectives will be met during construction of the Wanaque South Water Supply Project.
- d. South River Water Supply Study: The Division is conducting a study in the South River area (Middlesex County and a portion of Monmouth County), to determine the demand and adequacy of the supply from a quality and quantity standpoint. The consultant will examine all alternatives for meeting demand and will recommend the best option.
- e. Camden Metro Study: The Division is studying the water supply needs of the Camden Metropolitan Area (including parts of Burlington and Gloucester Counties). The study will concentrate on the condition of the Potomac/Raritan/Magothy aquifer and its interrelationship with the Delaware River. All alternatives within the study area, which could satisfy projected deficits to the year 2020, will be examined.
- f. Passaic River Water Quality Study: This study involves the development of a model to evaluate the impact from Water Supply Master Plan projects and wastewater management on the Passaic River basin. The effects of changing wastewater treatment requirements will be determined.
- g. County Demonstration Projects: Four "County Demonstration Projects" will be conducted, to examine the following issues: septage management, aquifer protection, stormwater detention basin maintenance and nonpoint source pollution control. While the counties will be performing some work of a technical nature, legal and institutional aspects will be emphasized.

B. WASTEWATER MANAGEMENT STRATEGIES

Wastewater treatment plants are among the most significant potential contributors to water quality degradation. The subject issues of the following subgroup of strategies relate to the effective treatment and management of wastewater in order to prevent or minimize its adverse effect on water quality. The strategies include protective technical methodologies, as well as mechanisms for the provision of needed treatment facilities. The strategies included in this subsection are:

1. Wastewater Facilities Financing.
2. Combined Sewer Overflow.
3. Review of Wastewater Discharge Requirements.
4. Water Quality Based Effluent Limitations.
5. Residential Wastewater Flow Generation.
6. Municipal Management Strategy.

1. Wastewater Facilities Financing

• Background

Federal and state legislation have set forth clean water and water pollution control goals aimed at achieving swimmable and fishable water quality throughout the nation. A major component in achieving these goals has been the building, upgrading and enlargement of municipal wastewater treatment plants and their related facilities. Local municipalities and sewerage or utilities authorities have been able to construct these treatment facilities with the assistance of federal and state grants that have generally supported 83% (75% federal, 8% state) of the total costs. However, changes in federal budget priorities have severely reduced the amount the federal government contributes to water pollution control projects.

The Department has obligated, since 1969, over two billion dollars for municipal wastewater facilities planning and construction. The source of this money has been a combination of state bond monies and federal Construction Grants Program funds (as outlined in Section 201 of the federal Clean Water Act). Another source of money is the federal Farmers Home Administration which has funded wastewater treatment projects in rural areas of the State.

Federal construction grant (201) monies have served as the principal basis for funding municipal sewage treatment plant (STP) projects. Until the Clean Water Act amendments of 1981, the federal grant share was 75% (conventional projects) and 85% (innovative/alternative projects) of the project's planning, design and construction costs. During this period the State supplied from 8 to 25% of the project's costs, with the local government or authority providing the remainder. Grant assistance is obligated to projects as they are ranked on a Project Priority List developed by the Department and approved by the EPA. The Project Priority System and List is periodically updated and based on the project type and the anticipated water quality benefits.

The 1981 amendments to the Clean Water Act reduced the scope of a project eligible for 201 funds. Federal monies can now be used only for construction bid costs (including an allowance for facilities planning and design); not direct funding of planning and design as in the past, and certain project types (collection systems, sewer system replacement and combined sewer overflow corrections) are no longer eligible. In addition, the federal grant share of the project's costs was reduced to a maximum of 55% after September 30, 1984, although innovative/alternative projects can receive up to 75% of the project's cost (see federal Construction Grant Regulations 40 CFR 35.2000 et seq.). This was done to increase the range of fundable 201 projects on the project priority list.

The federal government has authorized \$2.4 billion per year nationwide for 201 construction grants for the Fiscal Years 1982 to 1985. This represents more than a 50% reduction in comparison to appropriations

for the period FY 1977 to 1981. New Jersey is expected to receive a total of \$385 million from FY 1982 to 1985, far short of the estimated \$3.5 billion needed in the State to achieve clean water goals. Approximately \$40 million is also anticipated for sewage treatment projects from state revenues. But a deficit of close to \$2.9 billion will exist.

The State has \$100 million (including federal funds) to spend on 201 projects for FY 1985. In 1986, it is expected that approximately \$100 million to \$115 million will be allocated in the state. This total can change upward if Congress and the Administration makes additional appropriations, or, conversely, this total can be reduced. It is unlikely, however, that any additional federal revenues will become available because of the current fiscal and political climate.

In addition to the need for newer and advanced sewage treatment facilities, many of the State's older sewerage systems will require repair or replacement. These needs will place a significant strain on local and state resources which are, for the most part, unavailable.

The demand for public resources to cover the costs of adequate sewage conveyance and treatment in the State greatly exceeds what is available. This strategy is a review of what the State of New Jersey has proposed for the upcoming two decades for solving this statewide problem. Many of these proposals are unique and have received nationwide attention.

- Objective

The State of New Jersey has a commitment to achieve clean water goals, despite severe reductions in the federal contribution to this effort. It is because of this commitment that the State has been developing alternative funding mechanisms so that as many as possible of the water pollution control projects needed over the next two decades can be completed. Funding must also be secured for the repair and or replacement of existing sewerage infrastructure (sewer lines, interceptors, antiquated treatment plants) which are now in, or soon will be in, disrepair.

The funding alternatives which the State is currently implementing or proposing seek to finance as many wastewater and infrastructure projects as possible, to reduce the State's dependence on federal resources in the future, and to keep user-charges and local costs to a minimum as grant monies become increasingly unavailable.

- Strategy

New Jersey is basing its wastewater treatment and related infrastructure financing strategy on a parallel program of grant monies and a revolving loan system comprised of federal and state funds. Also encouraged is the infusion of private funds for sewerage planning, construction and operation, interim expansion of facilities, and cooperative treatment efforts between sewerage agencies.

The State of New Jersey has proposed that a "Wastewater Treatment Trust" and a "Wastewater Treatment Fund" be created to assist in the funding of the repair of deteriorating wastewater systems and new sewage treatment facilities necessary for meeting clean water goals.

For wastewater projects, a combination grant/revolving loan program, to be administered by the Department of Environmental Protection, has been approved by the Legislature and the Governor. This program, to be known as the Wastewater Treatment Fund, will be subsidized by \$150 million in bond funds which were approved by the public in the November 1985 bond act referendum. In addition, the separate "Wastewater Treatment Trust," including an additional \$40 million (also included on the November bond act referendum) was approved.

The Fund is a combination loan and grant program. Of the \$150 million in the Fund, up to \$30 million may be used as grants to municipalities, with the remainder reserved for loans (or no monies from the Fund may be used as grants). If grants are utilized, only 20 percent of a project's costs can be covered by grant money from the Fund. The Fund's loan monies would be part of a revolving loan account for current and future assistance in the construction of wastewater treatment facilities.

The Trust's aid, in the form of loans and guarantees only, would be by an independent seven member board, although technical assistance would be provided by the Department of Environmental Protection, Department of Treasury, Department of Community Affairs, as well as financial advisors, and bond counsel. For STP construction, the Trust would supplement the construction grants program by loaning monies to municipalities. As loan monies are repaid to the Trust, the monies would be reinvested in other projects, thus creating a revolving loan account. Along with the Fund and Trust, available federal and State construction grant monies would continue to be used in the funding of needed wastewater treatment systems.

With adoption of the Wastewater Treatment Trust, the State has proposed that the Trust loan to municipalities or responsible agencies monies at zero or low interest and a twenty year repayment schedule. In addition, bond guarantees by the Trust will lower the borrowing cost of the local share. The resultant annual user charges would be greater than if 63% of the project's cost were provided for by federal (55%) and state (8%) grants, but significantly lower than if 100% of the costs were the responsibility of the locality. State enabling legislation creating the Trust has also been passed by the legislature and signed by the Governor. Amendments to the federal Clean Water Act have also been provided in Congress to allow states to establish revolving loan programs from construction grant monies.

The State is also encouraging the concept of privatization. This involves promoting private financing of STP projects wherever possible. Private construction is expected to result in lower overall costs and certain tax advantages for the firms; and those savings can then be passed along to the users of the system. The concept of privatization has been introduced and further defined in the New Jersey

Wastewater Treatment Privatization Act (N.J.A.C. 58:27-1 et seq.), approved in early 1985.

It is possible that the Department will modify the priority listing for all fundable wastewater treatment systems to advance private financing and construction. The amendment will allow the applicant (municipality) to construct other portions of the fundable project if commitments are received from a private funding source. Private resources could also be used in other ways. The viability of using private/industrial wastewater treatment systems that are operating undercapacity and which can accept wastewaters from overloaded municipal treatment plants is also being studied.

Two additional sewerage facilities financing strategies are being pursued by the Department. One strategy involves cooperative agreements between sewerage agencies or authorities for either planning, construction or the treatment of wastewaters. This option may be attractive for authorities with immediate treatment needs, but have limited funds or are years away from funding and implementation. One example is the agreement between the Manasquan River Regional Sewerage Authority and the Ocean County Utilities Authority. The Manasquan River Regional Sewerage Authority will transfer its wastewaters to the underutilized Ocean County Utilities Authority northern treatment facility for treatment and discharge, instead of constructing their own treatment plant. This will result in substantial cost savings. The second strategy is based on the interim expansion of treatment works instead of full scale renovations. This is often used to allow for increased flows to a plant or to meet a specific permit requirement with which it is in non-compliance. The "Policy for Interim Construction, Expansion, Upgrade and Unplanned Wastewater Treatment Facilities" presented in Chapter III discusses this option more thoroughly.

These mechanisms together have the potential of supplying sufficient funds for water pollution control projects in the State so that clean water goals can be met. They represent a unique and innovative alternative to the current municipal wastewater treatment facilities funding process. They allow maximum use of limited monies and reduce the State's dependence on increasingly smaller federal appropriations for these needs. Further, the program would provide a continuing source of funding for construction of wastewater treatment facilities. Along with grants and privatization, it is anticipated that the Wastewater Treatment Fund and the Wastewater Treatment Trust will be the basis for financing municipal wastewater treatment systems in New Jersey.

2. Combined Sewer Overflow

• Background

Old and often deteriorating combined sanitary and storm sewer systems are common in the established urban areas of the State. Originally conceived as a simple and inexpensive means of handling both sewage and stormwater runoff, today they are virtually unregulated sources of untreated wastewaters. Combined sewer overflows (CSO's) following rainfalls contain pollutants coming from surface (especially urban) runoff, sewage entering the sewers during a rainfall, and solids deposited in the sewers during dry periods between storm events. The problem is further aggravated by malfunctioning or damaged combined sewer regulators, which allow the discharge of raw sewage during dry weather periods.

These CSO's utilize potentially significant portions of the assimilative capacities of the State's surface waters, requiring larger expenditures of public funds to increase the treatment levels of publicly owned treatment works. They also represent a potential threat to the public health since they degrade the bacteriological quality of surface waters. Very little data is available statewide on the CSO problem. There appears to be considerable variability from system to system in regard to CSO volumes and pollutant strength.

• Objective

The ultimate objective for the State is to develop a set of comprehensive policies to eliminate the CSO problem. Recognizing present economic constraints, an interim objective is to fulfill information needs and search for appropriate areas of action, including the development of a priority ranking system for the establishment of a statewide control program.

• Strategy

The primary strategy at present is to continue to investigate the CSO problem by reviewing background information and eventually conducting a monitoring program. Information is needed about the conditions of the combined sewer systems, including the combined sewer regulators, as well as CSO volumes, frequency of discharge, pollutant strength, and direct and indirect impacts on the receiving waters. These investigations will lead to the identification of pollutant sources, the quantification of pollutant loadings, and the determination of water quality impacts.

Several approaches for dealing with the CSO problem need to be explored. These include: a) the elimination of dry weather discharges through the development of programs dealing with regulator repair, periodic inspections and routine maintenance; and b) evaluating the potential for utilizing the existing storage capacities at treatment plants, in order that all or a portion of the CSO's could receive at least primary treatment and disinfection.

Section 201(n)(2) of the Federal Clean Water Act, enacted as part of the Municipal Wastewater Treatment Construction Grants Amendments of 1981, authorizes a special fund for the abatement of combined sewer overflow pollution in marine bays and estuaries. Section 201(n)(2) establishes a separate funding mechanism for addressing impaired uses and public health risks from CSO's in marine bays and estuaries. The State is responsible for technically justifying the funding.

In 1984, the State certified and endorsed five project applications for funding. The five projects are: Hudson County Utilities Authority (approved for funding), Borough of Carteret (carried over for possible funding), City of Elizabeth (carried over for possible funding), City of Camden (considered ineligible), and Passaic Valley Sewerage Commission (considered ineligible). Initially, EPA had intended to award the grants during FY 1985 at 55% federal share; however, some grants were awarded at 75%. Presently the funding level is 55%. In addition, the State will explore the possibility of encouraging the private sector to fund these clean-up activities.

3. Review of Wastewater Discharge Requirements

• Background

Discharges of wastewater to New Jersey's surface waters are regulated in part by the Department's Wastewater Discharge Requirements (N.J.A.C. 7:9-5). These rules contain provisions concerning disinfection and minimum treatment requirements, and other provisions concerning the protection and enhancement of surface waters of the State, pursuant to the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.).

Some of the initial areawide WQM Plans included recommendations concerning disinfection policy. The present Wastewater Discharge Requirements were adopted by the Department on April 29, 1985, and became effective on May 20, 1985, when notice of their adoption was published in the New Jersey Register (17 N.J.R. 1270(a)). Like the previous rules concerning Treatment of Wastewater Discharged Into Surface Waters of the State that the Department had adopted in March 1981 and repealed on April 29, 1985, the present Wastewater Discharge Requirements are part of the Statewide WQM Plan and supersede any provisions in the areawide WQM Plans that are inconsistent with those rules.

The repealed rules concerning Treatment of Wastewater Discharged Into Surface Waters of the State included provisions that affected the application and implementation of the Department's then existing Surface Water Quality Standards, and were therefore considered part of the "applicable water quality standards" under section 303(c) of the federal Clean Water Act. When the Department adopted new Wastewater Discharge Requirements and new Surface Water Quality Standards, all of the provisions in the repealed rules that affected the application and implementation of the Surface Water Quality Standards were transferred (with modifications) into the Surface Water Quality Standards, and none were retained in the Wastewater Discharge Requirements.

The Department reviews its Wastewater Discharge Requirements in the light of new scientific and technical information, experience gained in daily operations, and changes in water pollution control policy. Pursuant to New Jersey Executive Order No. 66, the expiration date for the present Wastewater Discharge Requirements is May 20, 1990. The Department expects to review all of the Wastewater Discharge Requirements by 1990 under the New Jersey Administrative Procedure Act. The Department may also review specific provisions of the Wastewater Discharge Requirements prior to 1990 when the Department determines that such review is appropriate.

The Department has identified disinfection policy as a priority review topic. In the Department's present Wastewater Discharge Requirements, statements of policy concerning the disinfection of wastewater are found at N.J.A.C. 7:9-5.4(b). During the public comment period on the present Surface Water Quality Standards (N.J.A.C. 7:9-4) and Wastewater

Discharge Requirements (N.J.A.C. 7:9-5), the Department received several comments on the water quality criteria for chlorine and on the disinfection policies included in those regulations. The Department is charged with establishing disinfection requirements for wastewater discharges that might contain pathogenic organisms in order to protect the public health from exposure to such organisms through primary contact recreation and shellfish consumption, and to protect the designated uses of New Jersey's surface waters. Disinfection and the chlorine criteria are linked because chlorine is currently the most widely used wastewater disinfectant. Chlorine is also commonly used as a biofouling agent in cooling water discharges. Chlorine and its by-products are known to be toxic to aquatic life, and there is concern about the human health effects of the chlorinated organic compounds formed as a result of chlorination of wastewaters. In order to meet its obligation to protect aquatic life, the Department imposes water quality based effluent limitations for chlorine on appropriate dischargers, based on the water quality criteria for chlorine included in the Surface Water Quality Standards.

The Department, recognizing the need to better address these somewhat conflicting responsibilities, is undertaking a detailed review of chlorine criteria and disinfection practices in New Jersey. This review will include a detailed evaluation of the applicable chlorine criteria and existing disinfection requirements, and will also assess dechlorination and alternative disinfection technologies. As part of this review, the Department has organized a Disinfection Advisory Group to solicit input from outside the Department. The Disinfection Advisory Group includes members representing or affiliated with the Authorities Association of New Jersey, the New Jersey Chamber of Commerce, the New Jersey Water Pollution Control Association, Rutgers University, the New Jersey Institute of Technology, and the New Jersey Water Resources Coalition. Issues to be addressed by the Disinfection Advisory Group include year-round disinfection requirements, chlorine optimization, alternatives to chlorination for disinfection, and dechlorination.

The Delaware River Basin Commission (DRBC) is planning to conduct a two year bacterial monitoring program in the Delaware Estuary beginning in July 1986, to evaluate the impact of seasonal disinfection on shellfishing. During the second year, discharges above Marcus Hook would not be required to provide disinfection from October through April. The results of the DRBC study will be an important part of the Department's review of disinfection practices and the use of chlorine. The Department has actively participated in the design of the study through its membership on the DRBC Water Quality Advisory Committee, and expects to perform water sampling in shellfish areas as part of the study.

- Objective

The general objective is the improvement of the Department's present Wastewater Discharge Requirements with respect to their environmental and economic impact. The present, specific objective is the review, with advice from the Disinfection Advisory Group, of the Department's

present disinfection policies, performed in conjunction with a review of water quality criteria for chlorine and with the planned DRBC study. It is also hoped that the information gathered by the Disinfection Advisory Group will be of assistance to dischargers in meeting their disinfection requirements and chlorine permit limits.

- Strategy

The Department has identified disinfection policy as a priority review topic. The Department may identify additional priority review topics as it gains experience during the implementation of the Wastewater Discharge Requirements, prepares future annual work programs under section 205(j) of the federal Clean Water Act, updates the Statewide WQM Plan, and meets with various interest groups.

The Department has organized a Disinfection Advisory Group to advise the Department in its detailed review of disinfection policies in New Jersey. The Department will continue to participate in the deliberations of the DRBC Water Quality Advisory Committee concerning the planned DRBC seasonal disinfection study, and expects to perform water quality sampling in shellfish areas as part of that study between July 1986 and July 1988. The Department will also continue to develop the work plan for a monitoring study of the effects of chlorinated and dechlorinated secondary effluent on benthic macroinvertebrates and periphyton in a freshwater stream, to be performed in FY 1987.

The Department will propose revisions to the disinfection policies in the present Wastewater Discharge Requirements if the Department deems it appropriate to do so, based on the results of its review and on the advice it receives from the Disinfection Advisory Group. If the Department proposes revisions to the disinfection policies (or any other provision of the Wastewater Discharge Requirements), they will be considered in accordance with the New Jersey Administrative Procedure Act.

4. Water Quality Based Effluent Limitations

- Background

The Department's Surface Water Quality Standards are applied to individual wastewater discharges through the use of technical analysis and, in some cases, field data. Many New Jersey waterways have a limited capacity for wastewater due to their designated uses, antidegradation policy, small size, or low velocity. Advanced wastewater treatment may be required to meet the Surface Water Quality Standards in such cases. Thus, water quality based effluent limitations must be provided for municipal treatment works as well as industrial treatment facilities.

Many of the initial areawide WQM Plans included some recommendations concerning the need for water quality surveys to develop water quality based effluent limitations. Some of these plans identified specific wastewater discharges and receiving waters for special attention, or established specific water quality based effluent limitations for selected discharges. Among the activities which the Department currently expects to undertake are the design and performance of intensive water quality surveys and technical studies, the development of water quality based effluent limitations for whole effluent toxicity as measured with bioassays, and the acquisition of receiving water data for specific chemical toxic pollutants.

- Objective

Specific objectives to implement and improve the development of water quality based effluent limitations include the following:

- a. Selection of waterway segments for intensive surveys, performance of intensive surveys, analysis of data, and development of water quality based effluent limitations for eventual inclusion in NJPDES discharge permits.
- b. Increased development of water quality based effluent limitations for whole effluent toxicity, as measured with bioassays. Acquisition, for use in the development of water quality based effluent limitations, of water quality data for specific chemical toxic pollutants upstream and downstream from existing or proposed discharges.

- Strategy

For some water quality parameters, the development of water quality based effluent limitations is based on simple mass balances, including toxicity limitation formulas, with or without the collection of new hydrologic, chemical or biological data. For more complex analyses, an intensive water quality survey is performed to collect the necessary data. An appropriate water quality model is then applied, taking into consideration point and nonpoint sources of pollution. Using the field data, the model and information about control methods, various

alternatives are evaluated to estimate whether applicable surface water quality standards are attainable, to estimate the cost-effectiveness of point source control, and to establish treatment level requirements.

The number and location of intensive water quality studies will depend on Division needs (e.g., permits, enforcement, construction financing, water supply, water quality assessment), and on the availability of manpower and resources to carry out the studies. The water quality based effluent limitations derived from these studies are eventually incorporated into NJPDES discharge permits. These water quality studies take from one to two years to complete.

To date, water quality based effluent limitations for whole effluent toxicity have been developed for some industrial discharges. This program will be expanded to include publicly owned treatment works that have significant industrial contributions. Some data on instream concentrations of specific chemical toxic pollutants will become available as NJPDES applications are filed for discharges that include such pollutants. Moreover, some of these dischargers will be required to perform ongoing monitoring of such toxic pollutants upstream and downstream from the discharge. In conjunction with possible revisions to the Department's Surface Water Quality Standards, instream data for specific chemical toxic pollutants will be used to develop water quality based effluent limitations for specific chemical toxic pollutants.

5. Residential Wastewater Flow Generation

• Background

The Division is responsible for reviewing wastewater flow projections for proposed sewage treatment facilities. The Department's Rules and Regulations Concerning Sewer Systems and Wastewater Treatment Plants state, in part, that "sewage treatment plants for a new sewer system shall be designed for an average domestic flow, including infiltration, of not less than 100 gallons per capita (gpc) per 24 hour period, plus industrial wastewater" (N.J.A.C. 7:9-1.50(a)). In addition, the initial Department-developed areawide WQM Plans discussed a methodology for wastewater flow projections. However, since October 1978, any new construction is required to install water conserving toilets, sinks (faucets) and showers, as a result of revisions to the New Jersey Plumbing Code. The water reduction savings due to the use of these more efficient construction practices is approximately twenty percent. In light of this savings, the 100 gpc flow would no longer be realistic.

The Division now uses 65 gpc (excluding infiltration and inflow (I/I)) for calculating future flows for proposed expansions or new wastewater facilities. The enabling authority to deviate from 100 gpc is N.J.A.C. 7:9-1.50(c), which allows for design flows of less than 100 gpc when supported by adequate engineering data. The 65 gpc value was derived from a combination of the EPA construction grants regulation for municipal treatment works and the reduction by water conservation devices. The EPA regulations list a maximum residential flow of 80 gpc. This 80 gpc flow minus a 20 percent reduction for the flow restriction requirement is the origin of the 65 gpc flow. The use of this 65 gpc value is reasonable on an interim basis. However, there is a need to revise the Department's regulations to reflect the revisions to the Plumbing Code concerning water conservation.

The table within Section 7:9-1.106 of the Department regulation lists values for computing the design flow of a package treatment plant. Some of these flows, particularly the residential flows, are inaccurate due to the above-mentioned changes in the Plumbing Code.

• Objective

The objective of this strategy is to revise N.J.A.C. 7:9-1.50 and the WQM Plans to include current flow projections due to the modifications in the State's Plumbing Code. These amendments should also include a more detailed description of residential flow by housing type and size.

• Strategy

The strategy to achieve the objective will be to include the following proposed flow generation amendments within the Division's proposed revisions of N.J.A.C. 7:9-1.50 et seq.

a. The proposed revisions are as follows:

- i. Sewage treatment plants for a new sewer system shall be designed for an average domestic flow of 65 gallons per capita per 24-hour period, plus industrial waste volume and infiltration and inflow (I/I). The total flow so obtained shall be defined as the design flow, and is hereinafter so referred to in these regulations.
 - ii. Unchanged
 - iii. Design flows different than 65 gpc may be considered when supported by adequate engineering data.
- b. The proposed revisions for N.J.A.C. 7:9-1.1068 are to replace the residential values in the regulation's table with Table 2.

Table 2
Gallons Per Housing Unit*
(Gallons per Day)

Housing Type	Bedroom			
	1	2	3	4
Single Family Residence	NA	170	220	300
Garden Apt.	90	135	220	NA
Townhouse	90	150	220	NA
High Rise	100	135	220	NA
Mobile Home	90	150	220	NA
Duplex, Triplex, Fourplex	150	170	260	NA

* Based on 65 gal/capita/day
No allowance for Infiltration/Inflow

Table 3 (below) was used as the basis for Table 2. The per capita base for each residential type was multiplied by the 65 gpd flow factor.

Table 3
Population Density per Housing Unit***

Housing Type	Bedrooms			
	1	2	3	4
Single Family Residence	NA	2.6	3.4	4.6
Garden Apt.	1.4	2.1	3.4**	NA
Townhouse	1.4*	2.3	3.4	NA
High Rise	1.5	2.1	3.4**	NA
Mobile Home	1.4	2.3	3.4	NA
Duplex, Triplex, Fourplex	1.6	2.6	4.0	NA

* Assume equivalent to Garden Apt.

** Assume equivalent to Townhouse

*** Practitioners Guide to Fiscal Impact Analysis, Robert Burchelle/
David Listokin, Rutgers University, Center for Urban Policy
Research, New Brunswick, New Jersey, 1980.

6. Municipal Management Strategy

• Background

National water pollution control programs have achieved varying degrees of success from both the standpoint of controlling the introduction of pollutants into our waterways and of making actual improvements in stream quality. A major reason for these improvements has been the control of pollutants coming from point sources. However, improvements in municipal wastewater pollution have not kept pace with the improvements that have been made in the industrial sector. The causes for the delays in municipal compliance are many, but are due primarily to the lack of public funds to support construction and operation.

Despite the presence of some federal financial assistance for municipal wastewater treatment facilities (primarily the Construction Grants Program), inadequate funding and the complexity of the programs have prevented some municipalities from completing construction. In addition, certain municipalities or governmental entities have been unwilling to construct necessary facilities. In certain cases, subsequent enforcement actions are also complicated by the lack of construction grants monies. Future federal funding for construction grants is now clouded and is dependent upon amendments to the federal Clean Water Act (see the Wastewater Facilities Financing Strategy for a discussion of this issue). Even where construction is completed, some municipalities experience problems in consistently meeting effluent requirements. When this occurs, technical assistance or enforcement action results.

The normal process needed for a municipal wastewater facility to move into compliance with regulatory requirements is outlined below:

- a. Establishment of an effluent limitation,
- b. Development of a wastewater facilities or management plan and schedule to achieve the effluent limitation,
- c. Reissuance of the discharge permit with an appropriate schedule for implementation of the approved plan,
- d. Monitoring for compliance with the permit schedule and effluent limitation, and
- e. Taking appropriate enforcement actions as necessary for compliance.

In October, 1979 the EPA took action towards improved management of these program activities by publishing the National Municipal Policy and Strategy. Following this (in March, 1980), EPA prepared guidance on establishing a Municipal Management Strategy. These documents were designed for improving municipal compliance through better integration of the permits, construction grants and enforcement programs, operated by the EPA and the states. Subsequently, New Jersey developed a Municipal Wastewater Compliance Program to assist in the implementation of the National Municipal Policy. The Objective and Strategy below are based on this program for New Jersey.

- Objective

The goal of New Jersey's Municipal Compliance Strategy is to achieve adequate treatment of municipal wastewater at the earliest possible date. The activities resulting from the strategy are designed to result in the establishment of applicable effluent limitations for each publicly-owned treatment works by January 1986, so that actual operating compliance can be achieved to the maximum extent possible no later than July, 1988.

- Strategy

The strategy developed and outlined in the Implementation of the National Municipal Policy in New Jersey, A Joint Local/State/Federal Effort is based on a continued cooperative effort between all levels of government and integration of the Division of Water Resources program activities that are essential in municipal wastewater treatment performances. These include: ambient water quality monitoring, construction grants, planning, water quality standards, permitting and compliance assurance (enforcement). This strategy is expected to provide the framework for guiding local, state and federal efforts for municipal compliance through FY 1988.

The number of municipal facilities in non-compliance necessitates that a priority system be used to delegate available resources in an effective and efficient manner. The first step is to assign a discharge category to all non-compliers. The categories include: federally funded facilities, raw discharges, primary discharges, inadequate secondary discharges and required advanced treatment. For further definition of priorities within each category, a Water Quality/Water Use Index (as contained in the New Jersey 1982 State Water Quality Inventory Report) for the receiving waters of each discharge is assigned to the project. Projects are then ranked in descending order on the basis of the Index given for the receiving waters. Based on the current status of the project, a lead element in the Division is named as responsible for completing the necessary actions to improve the discharge. Lead elements change as work tasks are completed. Certain project types are referred to EPA for action.

New Jersey's Municipal Management Strategy is centered around eight programmatic objectives which will be used to meet national and state municipal wastewater treatment requirements. They are:

- a. Utilizing water quality standards and attainable water quality based effluent limitations.
- b. Consideration of operation and maintenance in the planning and design of municipal treatment facilities.
- c. Permits that contain technically sound interim and final effluent limitations; and schedules as necessary for construction of facilities and other needed requirements.
- d. Compliance accounting with respect to effluent limitations and schedules that accurately identify facility status.
- e. Field and in-office performance monitoring of municipal facilities that have significant impacts on water quality or are having serious problems.
- f. Technical assistance consistent with available resources and discharge commitments.
- g. Integrated construction grants, permits and enforcement response to unacceptable construction grants progress.
- h. Maintain federal and state accountability for program operations.

The process to achieve municipal compliance also includes the use of specific plans that outline appropriate schedules and commitments for each facility.

The various responsibilities listed above are to be accomplished in a coordinated local, state and federal effort. However, should municipalities fail to comply with agreed upon schedules, the state will act through administrative penalties and/or civil litigation to accomplish compliance.

C. PLANNING STRATEGIES

Wherever possible, it is desirable that water resources problems be prevented through careful planning. By the implementation of appropriate planning mechanisms, water resources problems can often be addressed before expensive corrective measures are needed. The following are the planning-oriented strategies included in this section:

1. Water Quality Management Planning Delegation.
2. Areawide Water Quality Management Plan Update.
3. Integration of Wastewater Facilities Plans, Statewide Sludge, Septage, and Solid Waste Plans with the Statewide Water Quality Management Program Plan.

1. Water Quality Management Planning Delegation

• Background

The New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.) and the New Jersey Water Quality Management Planning and Implementation Process Regulations (N.J.A.C. 7:15) require that all projects and activities affecting water quality be consistent with the adopted Water Quality Management (WQM) Plans. In addition, the Commissioner cannot issue a permit that is in conflict with the Plans. The regulations establish procedures for determining consistency with WQM Plans in non-designated areas and in those areas for which the Department is responsible. The regulations also stipulate that the designated planning agencies should make consistency determinations for their areas, if they agree to undertake this responsibility. In addition, the Department has the authority to delegate this responsibility to other agencies (e.g., county governments) in the areas under their purview.

The development of a strategy to delegate the authority is necessary in order to accomplish four objectives: 1) to construct an orderly review framework for all consistency determinations, 2) to bring areawide water quality policy issues closer to the local level in order to provide a more effective forum for community understanding and involvement, 3) to enable the decisions regarding consistency with areawide plans to be made, to the extent practicable, by the agency responsible for the preparation of the plan, and 4) to avoid duplication of functions on the part of the Department and the designated planning agencies.

In August of 1982, the Department sent letters to each of the seven designated planning agencies asking whether they were willing to assume responsibility for the consistency determination program. As of September 1985, one agency had been delegated the responsibility but was not yet performing consistency determinations (Middlesex County), four agencies had conceptually agreed to accept the responsibility (Mercer, Sussex, Cape May and Ocean Counties), and two declined (Atlantic County and DVRPC).

• Objective

The objective of this program is to delegate the responsibility for consistency determinations to the designated planning agencies in the designated areas, and county governments (where feasible) in the non-designated areas.

• Strategy

The strategy to meet this objective is divided into two phases: short term and long term. The short term phase will concentrate on delegating the determination responsibility to the designated planning agencies. The process for delegation consists of the following steps:

- a. A letter is sent to each agency inquiring as to whether it is willing to undertake the consistency determination responsibility.
- b. The agency must respond in writing as to whether it wishes to undertake the responsibility.
- c. A meeting is held to discuss the Department's recommendations for updating the plan, and for addressing the certification conditions on the plan. This meeting is followed by a letter from the Department outlining the recommendations.
- d. The agency responds to the Department's recommendations and an agreement is reached.
- e. If the agency agrees to undertake the consistency determination responsibility, then it must prepare procedures to address: the administrative review process, conflict resolutions and appeals, and plan amendments. These procedures must be adopted by the planning agency's governing body.
- f. The procedures are then reviewed by the Department, approved, and adopted, after any necessary modifications.
- g. The formal delegation occurs upon adoption of the procedures. The delegation is also recorded in the Statewide WQM Plan.

The long term phase will emphasize extending the delegation to county governments in the non-designated areas. While the actual delegation process will be similar to the short term phase, there are other factors that must be considered.

The five non-designated areawide plans were prepared by the Department. These planning areas were often based on watershed boundaries rather than on county lines and, therefore, often included portions of counties, rather than whole counties. As such, delegation to county governments may require: adjustments in the original plans, development of new county-wide WQM plans, or the development of new, inter-county planning agencies. Where the plans do facilitate county-wide delegation, such delegations will be pursued in a similar fashion to the short term phase.

While delegation may be made to agencies other than county governments, such agencies must have certain authorities and abilities prior to receiving the delegation. These shall include, but not be limited to, the following:

- a. Authority for enforcing decisions as delegated by appropriate county freeholder boards.
- b. Financial capability to perform the responsibility on a long term basis.
- c. Sufficient manpower and resources to meet the delegated responsibilities.

- d. Public support, representation and accountability.
- e. Appropriate WQM planning expertise and knowledge.

2. Areawide Water Quality Management Plan Update

• Background

The Water Quality Management (WQM) Plans prepared in New Jersey, including those prepared by the Department, were reviewed by both the Department and the EPA. Upon their review, the plans were issued certification/approval conditions by those agencies. Those conditions discussed the plans and specified those subjects which were inadequately addressed, or not addressed at all, based on the requirements of the then applicable EPA rules and regulations.

The certification conditions provided a valuable framework for guiding the WQM agencies in the strengthening of their plans, in that they indicated areas where the WQM plans were incomplete and established priorities for update and revision. However, in the time since the plans were adopted, significant changes have occurred in the priorities of some of the water quality management programs. The development of a formal consistency determination process, for example, has necessitated a change in the nature and the priority of the conditions.

The Bureau of Planning and Standards (BPS), therefore, sought to develop a new set of certification conditions which would address priority needs and which would make best use of the resources and capabilities of the designated agencies. Each of the designated agencies was contacted in the development of these revised certification conditions, and items added or revised as appropriate.

• Objective

The objective of the areawide plan update process is to maximize the value of the plans in managing and implementing water resource programs, and to stress priority needs.

• Strategy

The certification conditions for the areawide plans addressed many different aspects of water quality management planning. Some conditions are very useful for planning needs, while other conditions are completely irrelevant to water quality needs and priorities as they stand today. The BPS is using the following strategy for addressing the certification conditions for both the designated and nondesignated area plans, and for directing WQM Plan updates.

Each of the designated WQM agencies was contacted, informing them of our intention to update the initial certification condition documents. Lists of high priority certification conditions were developed, stressing the strengthening of the WQM plans so that they may be used most effectively in consistency determinations. Those lists stressed such subject areas as management agencies, sewer service areas and consistency determination procedures. Additional items may be added in the future as other priority water quality needs become evident.

The conditions included in the initial certification/approval documents were not deleted; however, the BPS will consider deleting specific items if such revision can be clearly justified through the requests of the designated agencies. Upon satisfactory completion of each of the certification conditions, a WQM plan would be eligible for full approval by the Department. A listing of the updated certification conditions is included in the Appendix of this document.

3. Integration of Wastewater Facilities Plans, Statewide Sludge, Septage, and Solid Waste Plans with the Statewide Water Quality Management Program Plan

• Background

There are four specific water quality-related planning programs currently under development which have a direct relationship to the Statewide WQM Plan. These are the Statewide Sludge, Septage, Solid Waste, and Wastewater Facilities Plans. While these plans may not, in their entirety, be applicable to the Statewide WQM Plan, portions of the plans have a direct bearing on the WQM process. Therefore, there is a need for a strategy to review, select, and adopt applicable portions of the plans into the Statewide WQM Plan.

a. Wastewater Facilities Plans

The federal Clean Water Act required the preparation of Water Quality Management Plans and 201 Wastewater Facilities Plans. Those plans are intended to provide both general and specific aspects of wastewater management and facilities planning in relation to the overall goals of water quality.

The WQM Plans primarily discuss policy issues concerning water quality management and the use and location of wastewater facilities while the 201 Facilities Plans present the detailed aspects related to sewer service and facilities planning and design. These detailed aspects are necessary for the overall implementation of the wastewater planning process.

All twelve of the areawide WQM Plans were written and adopted between 1975 and 1980. Facilities plans, on the other hand, have been developed since 1972 and are in various stages of completion. Many facilities planning areas have no facilities plan completed to date. Others are completed, but not approved or adopted.

In addition, the areawide WQM Plans were developed based on different geographical boundaries, different planning area study scales, and by different agencies than were the facilities plans.

Both the federal Clean Water Act and the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.) require that the facilities plans be consistent with the adopted WQM Plans. The specific areas of concern are identification of projected treatment facilities, sewer service areas, forecasted wastewater flows, planning boundaries, environmentally sensitive areas and treatment levels. In addition, these plans are used to direct the expenditure of significant amounts of public and private sewage treatment funds. Therefore, it is necessary to ensure that these plans are up to date and consistent to prevent the construction of improperly sized facilities. In addition, the portions of the facilities plans which address the specific wastewater concerns should be integrated with the WQM Plans so as to provide a more detailed basis for wastewater planning.

The 201 Facilities Plan preparation and approval process was significantly modified in 1975, particularly in regard to delineation of sewer service areas constrained by environmentally sensitive features. Therefore, the Division concluded that only those 201 Facilities Plans approved after May 31, 1975, shall automatically be incorporated. Facilities Plans completed on or before May 31, 1975 may be incorporated, on a case-by-case basis, through the WQM Plan amendment process.

b. Sludge, Septage and Solid Waste Management Plans

A Statewide problem, which requires comprehensive study and solutions, is the safe, cost-effective disposal of waste materials. The State's generation of solid wastes, of which sludge and septage are important components, occurs at a staggering rate. As these by-products of society increase, so does their impact on water resources. Long range solutions and implementation mechanisms are being sought within the following statewide plans: Sludge Management, Septage Management, and Solid Waste Management.

The Statewide Solid Waste Management Plan was developed to provide a rational basis for decisions concerning solid waste management in the State. The Plan sets forth the basis for statewide solid waste management in New Jersey by providing data on current activities, and outlining future policies, requirements and criteria for resource recovery and other environmentally sound disposal methods.

Under the mandate of the Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.), the Division is responsible for the development of the Statewide Septage and Sludge Management Plans. These plans serve as a management tool for septage and sludge generators, as well as Solid Waste Management Districts. They also evaluate disposal alternatives and develop management plans for these alternatives.

● Objective

The principal objective of this strategy is to integrate the various water quality related planning programs with Statewide Water Quality Management Planning by adopting applicable portions of these plans into the Statewide WQM Plan. A second objective, specifically for the WQM Plan/Wastewater Facilities Plan consistency strategy, is the resolution of inconsistencies between the WQM plans and their respective facilities plans.

● Strategy

WQM Plan/Wastewater Facilities Plans:

The strategy to fulfill the objective is as follows:

- a. Facilities plans approved after May 31, 1975 will be:

- i. Abstracted, centralized in one location, inventoried and catalogued. The inventory will provide an overview of the status of the situation and will identify any missing plans.
- ii. Each plan will be reviewed to determine applicable portions and their consistency with the WQM plans. A computer printout will be prepared to allow for ease in future reference. Some of the plans may require little review effort as they have already been reviewed by the Division's Bureau of Planning and Standards (BPS) previously.
- iii. When inconsistencies are found, the BPS will review the discrepancies and decide whether either a facilities plan revision or a WQM plan amendment is warranted. Amendments would be made in accordance with the appropriate procedure.
- iv. Approved and/or revised applicable portions will be integrated into the appropriate WQM Plan in accordance with the Policy On Incorporation of 201 Facilities Plans.

b. For facilities plans that are completed, but not approved:

- i. All plans will be inventoried to determine their status.
- ii. Plans will be physically centralized.
- iii. Each plan will be reviewed for applicable portions and consistency with the appropriate WQM plan.
- iv. A procedure will be developed that will prioritize an expedited review of completed plans that are on the project priority list.
- v. Inconsistencies with the WQM Plans will be corrected through the amendment process.
- vi. Approved and/or amended applicable portions will be adopted in the appropriate WQM Plans.

Statewide Sludge, Septage, and Solid Waste Plans:

The strategy for incorporating the above plans into the Statewide WQM Plan is as follows:

- a. Each plan will be reviewed, following completion, to identify the portions applicable to the WQM program.
- b. The applicable portions will be further reviewed for their consistency with the WQM program policies and objectives.
- c. If plans are consistent, the BPS will recommend approval and adoption, for purposes of the Statewide WQM Plan.

d. Approved and/or adopted portions will then also be adopted, by reference, in the Statewide WQM Plan in accordance with the New Jersey Water Quality Management Planning and Implementation Process regulations.

In some cases, for plans that are not approved and/or adopted, the BPS may still choose to adopt applicable portions in the Statewide WQM Plan.

D. PROGRAM STRATEGIES

This subgroup of strategies discusses Division programs, other than those directly related to planning, which address water quality and wastewater management. Included are programs related to public participation, data gathering as well as preventive and corrective actions. Strategies included in this subgroup are:

1. Surface and Ground Water Discharge Permitting.
2. Surface and Ground Water Quality Monitoring.
3. Environmental Health Services.
4. Feasibility of Assuming Section 404 Dredge and Fill Permit Responsibility.
5. Public Involvement Program.

1. Surface and Ground Water Discharge Permitting

● Background

For several years, the control of point sources of pollution was, to a substantial extent, the direct responsibility of the EPA, and administered through the National Pollutant Discharge Elimination System. That program regulated point sources by specifying effluent pollutant concentrations and loadings which could legally be discharged. In April of 1982, those responsibilities were transferred to the State, and the program was renamed the New Jersey Pollutant Discharge Elimination System (NJPDES). The activities of the NJPDES program are more comprehensive than those of the permit program administered by the federal government. Those activities, and the Department units responsible for implementing them, are described in the Appendix to this document (Summary of the Division of Water Resources Water Quality Management Implementation Program).

● Objective

The objective of the discharge permit strategy is to further the purposes specified in the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A). Those purposes are:

- a. Restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the State;
- b. Protect public health and safety;
- c. Protect potable water supplies;
- d. Safeguard fish and aquatic life and scenic and recreational values;
- e. Enhance the domestic, municipal, recreational, industrial, agricultural and other uses of water; and
- f. Prevent, control and abate water pollution and implement the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.).

● Strategy

In its overall permitting strategy for the protection of water quality, the Division will seek to ensure that the following components are implemented or furthered in their development: refined procedure for developing water quality based effluent limitations, industrial pretreatment planning, stormwater discharge permitting, and ground water discharge permitting.

The State considers surface water discharges that treat large volumes of wastewater, discharges that are highly toxic, discharges that are in non-compliance with the NJPDES program, and new discharges to be of the highest priority in its surface water permitting activities. The Bureau

of Systems Analysis and Wasteload Allocation develops water quality based effluent limitations for some of these priority discharges. In order to more effectively develop and assign water quality based effluent limitations, the Water Quality Management Element will work with the Bureau of Systems Analysis and Wasteload Allocation to ensure that applications and supporting materials contain all the information required for developing the required water quality based effluent limitations. This will result in more efficient processing of requests for water quality based effluent limitations. In addition, there will be a stricter review of proposed projects. Applicants will no longer receive a conceptual approval before the project has passed through the public notice process, as has occurred in the past.

Program plans for industrial pretreatment were due July 1, 1983 from twenty-four designated agencies (sewerage authorities). Twenty-two of the agencies have submitted plans to the Bureau of Industrial Waste Management (Pretreatment Section) for conformance with appropriate pretreatment standards, of which twenty-one have been approved. The plans which have been approved are in various stages of implementation. Each industry in the area will be required to conform with the levels of industrial pollutants that the plants will be able to treat, based on the findings of the plan of the designated agency.

The Department will be doing pretreatment planning for those areas of the State that were not designated and have possible pretreatment problems. Information gathered based on an initial survey of industrial discharges in the State will be used to determine the extent of industrial waste pollution for nondesignated areas. A consultant has been hired to design a sampling program for the nondesignated wastewater treatment facilities. The type of information gathered will be a verification of previously submitted information on industrial effluent, treatment works influent and effluent, and sludges. The data gathered in this type of survey will be used to evaluate industrial wastewater problems, and to design the proper system to alleviate those problems.

The NJPDES regulations also require permits for stormwater discharges to surface waters. New residential developments are encouraged to comply with the "General Standards" in the Stormwater Management Regulations, adopted January 24, 1983 for stormwater system design (N.J.A.C. 7:8-3.4).

NJPDES stormwater permits have not been issued for non-industrial developments on a regular basis, however, and a need exists for criteria for permitting non-industrial stormwater discharges. For industrial stormwater discharges, the industry is encouraged to divert as much stormwater away from contaminated areas of the site as possible. That stormwater which is contaminated must be treated before it may later enter surface water.

The ground water discharge permit program issues permits for the following types of activities: surface impoundments, infiltration/percolation lagoons, landfills, land application of sludge and septage, and land application of wastewater. The Department amended the NJPDES

regulations to allow it to issue an initial interim permit for the above activities. Either a file review or a field inspection will be used to gather information on each facility, which will then receive an initial interim NJPDES permit with an assessed fee in accordance with N.J.A.C. 7:14A-1.8. These will be used for facilities currently discharging to ground water; new discharges will be subject to a complete NJPDES review. The initial interim permit will last from one to three years, after which time a complete NJPDES application must be submitted.

Some related responsibilities will be reassigned to other, local agencies. Some of the responsibilities of Chapter 199 reviews will be given to the local health agencies as well as waste disposal responsibilities for septage and sludge. These changes will help the ground water discharge permit program direct its activities towards those of Statewide significance.

2. Surface and Ground Water Quality Monitoring

- Background

Surface Water:

The quality of New Jersey's surface waters has most frequently been determined on the basis of water quality monitoring from fixed locations. These locations are sampled periodically throughout the year (two to twelve times yearly depending upon the station and program), for a variety of water quality parameters and by a host of local, regional, state, interstate and federal agencies. The major purpose of this monitoring is to establish general water quality conditions and trends, identify water quality problems, and evaluate progress towards meeting national and state clean water goals. Monitoring from fixed-stations is used to gather data on a variety of chemical, bacteriological, biological and toxic parameters.

In addition, a number of monitoring programs occur throughout the State that are conducted in a more intensive manner. These programs are designed to solve specific water quality management issues and meet regulatory reporting requirements to protect public health.

The effectiveness, however, of fixed-station monitoring programs has been questioned. Weaknesses have been identified and a variety of reports have suggested using alternative monitoring methodologies. These weaknesses include an inability to identify impacts from specific water pollution sources (point or nonpoint); sampling that is too infrequent for reliable statistical analysis of data; pollutant contributions from tributaries and variability along river reaches between sampling stations that cannot be accurately determined; comparison of sampling data to certain State Water Quality Standards that is often not possible; and variations in water quality due to diurnal cycles and flow that are not generally detectable.

A number of the initial areawide Water Quality Management Plans recommended increased surface water quality monitoring, especially of the intensive survey type. In addition, the U.S. General Accounting Office (1981), in a report to Congress, stated that present nationwide fixed-station monitoring programs are not reliable indicators of water quality, and emphasized a switch to special or intensive surveys as the main nationwide surface water quality monitoring method. A similar conclusion was presented in New Jersey's 1982 State Water Quality Inventory (305(b)) Report, which also recommended greater use of intensive surveys. The water quality data used in the 305(b) report was not sufficient to identify site-specific water pollution sources and to comprehensively assess water quality conditions throughout the entire State.

Current and past water quality monitoring practices also do not support the current water quality based approach emphasized by federal and state water pollution control agencies for solving water quality

management issues. The move away from primary reliance on the technology-based approach used in the 1970's will require a greater understanding of the physical, chemical and biological characteristics of specific surface waters, and what factors (both natural and man-induced) are influencing water quality in a given watershed.

It is imperative that if a monitoring program is to be both cost-effective and efficient in the collection of adequate information, cooperation with existing and projected water quality monitoring agencies must be maximized. This subject is discussed further in the County Environmental Health Act Strategy, and was the basis for the development of the interagency Water Monitoring Work Group (WMWG). The WMWG in its FY 1983 Water Monitoring Activities Document (NJDEP, 1982) stressed improved coordination and planning among all agencies involved in water monitoring. If statewide monitoring is to increasingly rely on intensive survey programs, then this cooperation will be even more critical.

Ground Water:

Long term ground water monitoring in New Jersey has for the most part been limited to two issues: salt water intrusion in the Coastal Plain and ground water depletion (water levels). However, with the rapid increase in known ground water pollution occurrences since the mid-1970's, more ground water quality information is needed so that the problems can be properly evaluated and managed. Ground water quantity topics, such as overpumpage of water-bearing formations and increased demand for ground water resources development, will also require additional study in the 1980's.

The existing long term salinity and water level networks are reliable for their intended purposes, but are inadequate from the standpoint of evaluating ground water pollution cases and ambient ground water quality statewide. The New Jersey Geological Survey is currently working with the Bureau of Monitoring and Data Management and other agencies to develop an integrated federal, state and county ground water monitoring strategy. The "Ground Water" section of the Surface and Ground Water Quality Monitoring Strategy contains a review of this integrated strategy. Among the issues and concerns which were considered in the development of the strategy were:

- a. Lack of ground water quality standards;
- b. Absence of monitoring requirements for dischargers to ground waters;
- c. Inadequacy of sampling and analytical quality controls;
- d. Unavailability of ground water data for the northern region of the State;
- e. Inaccessibility of existing data; and
- f. Absence of monitoring program coordination.

Since these issues were identified, the State has taken various steps to improve control over ground water resource protection. First, the State implemented the NJPDES permitting system which includes regulations governing discharges to ground waters. These regulations require permittees to perform site-specific compliance monitoring of the discharge on a quarterly basis. Second, ground water quality standards (N.J.A.C. 7:9-6) were promulgated in 1981; and third, a laboratory certification program was instituted to ensure that laboratories in the State were performing technically adequate and accurate procedures for analyzing water samples. Fourth, a joint USGS/ Department Ground Water Primary Monitoring Network was established to gather baseline ground water quality information where it is lacking. The Network for FY 1986 contains 100 stations (80 of which are in the Rockaway Aquifer) that are analyzed for conventional indicators, metals, and, in some samples, volatile organic compounds. A County Cooperative Network has also been developed with the Ocean County Health Department and with a number of other counties planning their programs for the near future. With these steps in place, the Integrated Ground Water Monitoring Strategy was then designed to provide for continuing, comprehensive ground water monitoring program coordination.

● Objectives

Surface Water:

Ideally, water quality monitoring results should serve as the basis for many water quality management activities, whether they be regulatory programs or voluntary cooperation. Therefore, monitoring should be designed so that water quality managers have the necessary information for making informed decisions which are environmentally sound and cost-effective. This type of information, however, is generated in only a few of the regulatory-oriented monitoring programs.

Presently, most monitoring programs are useful from the standpoint of providing information on general water quality conditions at specific monitoring sites, determining general trends in water quality at these sites over time, and identifying whether various pollutants are present in the water column (pollutant concentrations in sediments and aquatic biota are also determined at some sites). However, if site specific water quality management decisions are to be made on problems in New Jersey's watersheds, then the following questions need to be answered throughout the State:

- a. At what concentrations are specific pollutants entering streams?
- b. What are the components and locations of the sources of pollution?
- c. In what ways are the pollutants affecting stream water quality, aquatic biota and uses?
- d. How much pollution can specific stream segments and water bodies assimilate?

- e. Which specific pollution sources can be controlled through recommended action plans by existing programs and which sources need development and implementation of special control activities?

Surface water quality monitoring programs should be developed and operated to answer these questions. This information can benefit a great number of public and private regulatory or control programs that are associated with water quality. Water pollution control work can be targeted to those specific sources or categories of sources having the greatest water quality impact and to sources requiring only minimal resources to improve effluent or runoff quality. In addition, the potential of restoring impaired water uses because of water quality degradation can be identified and achieved through priority considerations. This monitoring would also support the water quality based approach for pollution control being emphasized by federal agencies, and ensure that the greatest water quality benefits can be achieved with the least possible public and private resources.

Accomplishing these objectives in statewide surface water quality monitoring programs will be difficult and requires an extraordinary amount of background work and cooperation between existing water monitoring and pollution control agencies. However, if resources can be effectively allocated on a priority basis, then the benefits will outweigh many of the program's resource needs. The following "Strategy" section reviews how these objectives should be implemented Statewide, who would be involved, and the time needed to initiate them.

Ground Water:

The four objectives of the Integrated Ground Water Monitoring Strategy are currently at various stages of development and implementation. These objectives are:

- a. The elimination of sampling duplication by coordinating the various monitoring programs through the interagency Water Monitoring Work Group;
- b. The enhancement of information accessibility between monitoring programs by developing a coordinated, computerized data base pool. Coordination is achieved by using a common information identifier in all of the various, existing ground water data files. (This includes data from existing and projected ambient monitoring programs, and special or regulatory required data such as landfill monitoring well data, New Jersey Geological Survey pollution case files and NJPDES permit compliance monitoring);
- c. The assurance that all monitoring programs incorporate a standard level of laboratory and sampling quality control; and
- d. The establishment of sampling programs to fill existing ambient ground water information gaps. This has been accomplished with the development of the USGS/Department Ground Water Primary Monitoring Network and the County Cooperative Network through the County Environmental Health Act.

As has been noted above, these objectives are being implemented. Laboratory and sampling quality assurance regulations have been implemented and laboratories are being certified throughout the State. The Department, USGS, EPA and DRBC are currently working together on the development of a coordinated data pool, using the various data bases already in place as the ground water data pool framework.

One county-level ambient sampling program has been implemented in Ocean County, and a Statewide ambient ground water monitoring program is currently under development. The Division is encouraging county-level ground water monitoring under the auspices of the County Environmental Health Act (see the separate strategy for this subject). Ocean County has been the leader in assuming such a monitoring program with assistance from the USGS, the Division and a Water Quality Management grant. The statewide ambient ground water monitoring program will consist of a USGS/Department cooperative ambient network, developed out of the existing USGS/Department Ambient Surface Water Quality Monitoring Network. One hundred wells are expected to be sampled yearly for a variety of chemical indices, and the major focus of the first years is to collect ambient ground water data in the northern section of the State.

• Strategy

Surface Water:

The Division's primary monitoring emphasis is directed to the use of intensive surveys in surface water monitoring activities throughout the State and performing those monitoring activities necessary to meet regulatory requirements. The Division, in cooperation with other agencies, will conduct two types of monitoring programs: water quality monitoring through the use of routine ambient fixed stations and intensive surveys; and compliance monitoring of point source effluent quality. Consistent with EPA and Department priorities on assuring the quality of all water quality monitoring data in New Jersey, the laboratory certification program will conduct performance and systems audits on drinking water and wastewater laboratories throughout the state. Additionally, quality assurance project plans will be developed for monitoring projects, and systems audits will be conducted pursuant to these plans. All water quality data collected and quality assured will be entered on the STORET water quality data base for use in report preparation.

The routine ambient surface water monitoring programs will continue to comprise a significant portion of the monitoring performed in the State for the near future. The routine or fixed-station portion of ambient monitoring will consist of a statewide Basic Water Monitoring Network sampled by the Division four times yearly, a statewide Primary Network (approximately 80 stations) sampled six times yearly by the Division in cooperation with USGS, six stations from the USGS National Stream Quality Accounting Network, one station from the USGS National Hydrologic Benchmark Network, fixed-station sampling of interstate waters (ISC and DRBC), and substate routine monitoring based on cooperative agreements with the State. In addition, a 2,500 station

monitoring program is conducted by the Division's Bureau of Shellfish Control to assess the sanitary quality of shellfish growing waters.

The development of the substate (primarily county) water quality monitoring is progressing, with five counties having routine monitoring programs through cooperative agreements. Additional counties are developing programs with implementation planned for by the end of FY 1986. Through the auspices of the County Environmental Health Act the State would like to have counties or other substate agencies conduct most of the routine, fixed-station monitoring for surface waters throughout the State (this would be accompanied by future reduction of the Primary Network to 30-40 stations). The amount and type of sampling will vary with each county, as each has a different set of resources from which to conduct its work. However, the State is striving for consistency between all counties. As part of the cooperative agreements, the Division will assist, where needed, the counties in developing and starting their own programs, and conduct initial analysis of the raw data collected.

In FY 1986, the Division will continue the use of intensive surveys for the purpose of collecting ambient water quality information, establishing cause and effect relationships and for identifying water quality based effluent limitations and other specific pollution control activities needed to improve water quality in a particular stream segment. Because of staff reductions and increased responsibilities due to emergency drought conditions, the FY 1986 work plan lists many fewer intensive surveys than did the FY 1985 work plan. However, the intensive surveys in the FY 1986 work plan are individually much more complex and labor intensive. The surveys will be coordinated with other monitoring agencies such as EPA, USGS, Division of Fish, Game and Wildlife, and county health departments. The sampling needs will vary from survey to survey, depending on the suspected sources of pollution, understanding of existing conditions, critical periods in the stream, and designated uses affected. Some intensive surveys will incorporate sampling of point source effluents.

Before an ambient intensive survey program can be initiated, the Division must formulate criteria for selecting the water bodies or stream segments to be surveyed and for conducting the survey. Factors to be considered include survey size, identification of pollution sources, number of parameters and samples needed, and number of surveys needed. Development of proper survey guidelines will lead to more efficient, informative and manageable surveys. The use of ambient intensive surveys by the State will play a greater role in subsequent years as more and more routine, fixed-station monitoring is conducted by regional, county and local agencies.

Compliance monitoring is being planned for 10 discharges (5 municipal and 5 industrial) during FY 1986, and will consist of 24 hour composite sampling. About 60 additional compliance inspections will be performed for DRBC (some 24 hour composite sampling, some grab sampling). Compliance bioassay monitoring is also being planned (three 24 hour screening bioassays and three 96 hour flow-through bioassays). Also, the Enforcement Element will continue to perform routine compliance

inspections during which sampling will be conducted as necessary. The Division's compliance monitoring will continue to be coordinated with compliance monitoring performed by EPA and ISC. The Division will also continue to review self-monitoring reports from wastewater dischargers. In addition, studies on statewide pretreatment and the evaluation of sludges from non-designated 201 Construction Grants areas will be performed during FY 1986 by the Department.

The Division and the Department are approaching surface water quality monitoring from a number of directions. However, the overall trend for the upcoming years is to promote monitoring by regional or county agencies of fixed-stations to establish background and ambient conditions; and to have state agencies make greater use of intensive surveys that will identify specific pollution sources. This will allow a thorough understanding of the chemical, physical and biological properties of a stream segment, and lead to corrective actions aimed at water quality improvement.

Ground Water:

The basis for the integrated ground water management strategy is to maximize available resources and information through efficient monitoring and data coordination. Much of the data to be included in a coordinated data pool will be from required monitoring of potential ground water pollution sources, past and future pollution cases, special studies, NJPDES compliance monitoring and USGS/Department cooperative monitoring programs. This data is to be filed by location so that information gaps can be more readily identified, and a clearer picture of conditions in an area produced.

Therefore, various agencies will be utilizing data which cost no more to collect in a manner beneficial for closing ground water data gaps. This data coordination is presently underway.

To assist in establishing ambient ground water information, the Division strategy is to assist counties in developing their own monitoring programs, and to conduct a statewide ambient monitoring network in conjunction with the USGS. Both of these programs will help to develop a long-term ambient ground water quality network and information base. The Department has also received a supplementary EPA grant under section 106 of the federal Clean Water Act to support a Ground Water Work Plan. Under one of the four tasks in the work plan ("Data Management and Coordination"), the existing collection and use of ground water data will be reviewed and recommendations for an improved and expanded data collection network will be made.

3. Environmental Health Services

- Background

The State Legislature, through creation of the County Environmental Health Act (CEHA), N.J.S.A. 26:3A2-21 et seq., has determined that environmental health programs for the control of water pollution are inherently regional in nature and that the existing lead agencies in each county have valuable experience in administering efficient environmental health programs on a regional basis. The legislature, therefore, declared that it is the policy of the State to provide for the administration of environmental health services by county lead agencies throughout the State in a manner which is consistent with certain overall performance standards to be promulgated by the Department. These environmental health services include monitoring, inspection, and enforcement of environmental health standards.

The need for a regional approach to environmental services was also discussed in the areawide Water Quality Management Plans. The plans indicate that there are significant gaps in the delivery of environmental health services on a local and regional level. The enactment of the CEHA should help resolve this problem.

The Division has the responsibility for coordinating the water resources related portions of the CEHA. The specific requirements of the Act require counties to expand their existing activities to include portions of current Division programs. This requires a close working relationship between the Division and the local agencies. This transfer of responsibilities and close relationship is especially important due to the fiscal constraints facing the State, counties, and municipalities. Therefore, it is necessary to establish a strategy that will provide the framework for a smooth transfer of responsibilities and a long term program for implementation.

- Objective

The CEHA seeks to transfer certain responsibilities and activities from the Division to local agencies. This would allow the resources and manpower of the State, county and municipal governments to be used most efficiently and would eliminate overlapping services. It is the objective of this strategy to ensure that the above goals of the CEHA are achieved.

- Strategy

The strategy for the implementation of the CEHA is divided into four closely integrated categories: Delegation of Responsibilities, Financial Strategy, Cooperative Agreements, and Training.

Delegation of Responsibilities:

The Division concurs that the lead agency designation for fourteen counties should be the existing county health departments. This was a logical choice since these departments are active and have the potential to be expanded in order to assume the additional CEHA responsibilities. The remaining seven counties without county health departments are: Mercer, Somerset, Union, Essex, Hudson, Morris, and Passaic.

Mercer and Somerset Counties are investigating the possibility of other lead agency scenarios, which include their health officer associations. The Hudson County Regional Health Commission has also demonstrated the ability to undertake the responsibilities of a CEHA lead agency and has been designated as the lead agency for Hudson County.

Financial Strategy:

In FY 1985, the State distributed CEHA-related grants totaling \$870,000 to counties applying for funding. An additional \$870,000 is available for distribution in FY 1986. Such appropriations are not to be considered a permanent funding source and the amount allocated will not be sufficient to fund the entire CEHA program. The counties will still have the responsibility to implement CEHA legislation with their own financial resources.

To overcome the lack of sufficient funding, the counties must rely on new means for financing their CEHA programs. These financial strategies can include money from county and municipal general revenues.

Probably the main sources of revenue for the implementation of the CEHA will be from indirect state aid, and new and pending legislation. Although the state will not be allocating 100% direct funds to counties, it can offer certain technical services that will help the counties function more efficiently.

Other direct or indirect funding is still needed to implement the CEHA. Some indirect funding measures have been passed by the legislature. P.L. 1982 Chapter 438, an amendment to the Solid Waste Management Act, allows county health departments to collect fees from landfill owners within the county's jurisdiction for the purpose of enforcement activities. This may provide some of the funding for counties to sample ground water near landfills. The language of this law precludes any lead agency, other than the counties with health departments, from collecting this fee.

Another possible source of limited funds would be an amendment to the CEHA, P.L. 1982 Chapter 38, which would allow the counties to initiate legal proceedings for a violation of any environmental health law, rule, regulation, ordinance, or standard. The amendment could allow the penalties collected from the prosecution of a violation to go to the general fund of the county or the municipality prosecuting.

In addition, an amendment to the CEHA which would allow counties, regional health commissions, and municipalities to collect fees for the provision of environmental services could be a source of revenue. Such an amendment could allow the lead agency to assess a fee to be paid by businesses or residents who are either in need of the environmental services (i.e., well inspections), or are creating a condition which requires the administration and/or monitoring of that potentially hazardous condition.

Since the present funding measures are inadequate to cover the additional expense of the counties for the implementation of the CEHA, and new CEHA legislation will not be available in the near future, it is necessary to gradually phase in CEHA programs as funds permit. Present and future CEHA programs will be initiated according to the individual county priorities as stated in the work plans with guidance by the Division.

Cooperative Agreements:

In accordance with current Department policy and the CEHA, the Division has initiated cooperative program agreements and has delegated, or will delegate, various activities to local environmental health agencies.

The development of such cooperative program agreements for monitoring, inspection, and enforcement activities among the local agencies, counties and the Department is a necessary measure to ensure that environmental health services are adequately maintained at the state and local levels. Numerous discussions with county and municipal health agencies have resulted in general acceptance of the concept of cooperative program development, delineation of responsibilities, elimination of overlapping functions, and trading of mutually beneficial services. To date, eleven cooperative agreements have been signed and an additional four are in the process of negotiation.

The development of cooperative program agreements for delegation to substate agencies of inspection and enforcement activities will initially cover Non-Community Water Supplies, Physical Connections, Well Installation Permit Compliance, Pollution Complaints Investigations, and Water Quality Monitoring, as follows:

a. Non-Community Water Supplies

Permit compliance for new and existing public water systems serving fifteen or more service connections or twenty-five or more persons at least 60 days per year on a non-resident basis.

b. Physical Connections

Permit compliance to allow flow between a public community water system and any unapproved water supply, or where dual but physically separate piping enters a common building where one pipe is from a public community water system and the other is from an unapproved water supply. Any acceptable backflow prevention device shall be installed in accordance with the New Jersey Safe

Drinking Water Act Regulations (N.J.A.C. 7:10-1 through 7:10-11.13).

c. Well Installation Permit Compliance

Permit compliance for the installation of wells with prior well permits and/or by licensed well drillers.

d. Water Pollution Complaints

Investigation of reports of pollution received by the Department which involve pollution of surface water, private well pollution, sewage complaints, and spills which may lead to ground water contamination.

These current Department functions were chosen for delegation because they are most effectively handled at the substate level. In certain cases, the health agencies are already performing some of these activities. Consequently, it is prudent to distinguish specific responsibilities in order to eliminate overlap between State and substate agencies. This cooperative approach ensures a more efficient utilization of resources, as well as maximizes the successful implementation of comprehensive program goals (i.e., delivery of services).

The implementation phase of the delegation of inspection and enforcement functions to the counties and municipal health agencies has been undertaken by a number of counties and the Department. This phase included the following activities: discussions between Division personnel and health agencies, to delineate the responsibilities of the respective agencies; the formulation of low cost training sessions for the health agencies; and an exchange of mutually beneficial services as necessary.

The development of cooperative program agreements for monitoring activities extends and formalizes the informal cooperative working relationship which has previously existed between many health agencies and the Department. The rapid expansion and increasing complexity of water monitoring needs in New Jersey necessitates coordination and planning among all agencies involved. In recognition of this need, the health agencies and the Department cooperate in developing more effective and efficient use of their respective water monitoring, laboratory analysis, and data management resources.

The implementation phase of the cooperative monitoring program between the Counties and the Department has already begun. The development of informal cooperative coastal monitoring arrangements between the coastal communities and the Department, which are planned each year prior to the influx of summer tourists, naturally led itself to the establishment of Cooperative Monitoring Agreements. These agreements are specific to each county, depending on their varying capability, and may include: routine surface water monitoring, recreation/bathing monitoring, potable water monitoring, landfill ground water monitoring, intensive surveys, laboratory services and quality assurance. The

agreements delineate the responsibilities of the respective agencies and possible exchange of services as required, to accomplish the mutual goals of the participating agencies and the Division.

The timetable for full program implementation is difficult to determine at this early stage, and is dependent on negotiation between the Division and the health agencies. However, based on the favorable response by most agencies to the concept of cooperative program agreements, it is anticipated that implementation will take place over the next two years.

Training:

The counties' personnel will need training for some of the new CEHA responsibilities. As with most CEHA activities, this will require additional funds to pay for the time and cost of the enrollment in training classes. The State is presently trying to determine the needs of such a training program. The Department can significantly cut the costs of training by using in-house staff having expertise in the specific topic area. This type of program can work for training county personnel in activities such as well inspections, monitoring and sampling.

Before future training programs can be initiated, however, the counties will have to be more specific with respect to their training needs and time frame for implementation. This information should be developed as the cooperative program expands and the training needs of the counties become more evident.

4. Feasibility of Assuming Section 404 Dredge and Fill Permit Responsibility

• Background

The federal Clean Water Act (33 USC 1251 et seq.) requires the issuance of Section 404 Permits for projects that propose the discharge of dredged or fill material into navigable waterways. The Army Corps of Engineers is responsible for issuing Section 404 Permits. In conjunction with these Section 404 Permits, the Department is responsible for issuing Water Quality Certificates (WQC). These WQC's are issued pursuant to Section 401 of the Clean Water Act. The purpose of the WQC is to ensure that such discharges will not have an adverse impact upon the designated uses of New Jersey's waters or violate the State's water quality standards.

In the past, WQC's were issued for both 404 Permits and National Pollutant Discharge Elimination System permits (NPDES). In 1982, the Department assumed responsibility for the NPDES program and incorporated the WQC for NPDES in with the new NJPDES program. Thus, at this time, WQC's are issued for 404 Permits.

Due to the national perspective required in the 404 Permit program, and the application of nationwide permits, certain inadequacies have developed with regard to the protection of New Jersey's inland waters. The issuance of WQC's does not adequately address these concerns. Since the Clean Water Act allows the 404 program to be assumed by states, the Department proposes to ascertain whether such an assumption would lead to a more effective program.

• Objective

It is the objective of this strategy to investigate the feasibility of assuming responsibility for the 404 Permit program. In addition, if assumption is found to be warranted, then a program must be developed to effectively fund and administer this permit.

• Strategy

The Department will seek a federal grant to fund the investigation. If federal funds are not available, then the Department will consider whether State funds should be allocated. Once funds are allocated, the feasibility study will examine the following factors:

- a. The ability of existing statutory and regulatory authority to enable assumption, and the identification of additional authority which would be required.

- b. The ability of existing institutional mechanisms to implement a 404 permit program, and the identification of additional mechanisms which would be required. This will include: program administration, permitting, and enforcement.
- c. The financial requirements necessary for the implementation of the program.
- d. An identification of existing inadequacies in the 404 Permit program and the environmental benefits to be gained by assumption.
- e. The technical expertise required for program implementation.
- f. An assessment of benefits and costs based upon the above factors.

It is expected that this examination will be conducted over a one year period. Based upon its findings, the Department will make a decision as to whether assumption is feasible and warranted.

5. Public Involvement Program

- Background

The Division has explored a variety of approaches to public participation, including an ambitious effort to establish a regional public participation program. Given the evolving nature of water issues and programs, and changing focus of public attention to these issues, the Division currently relies on a flexible but comprehensive framework of participation. The framework consists of regular meetings with established statewide public interest groups, program-specific meetings and advisory groups, formal public hearings, and general public education.

- Objective

As a regulatory agency, it is necessary for the Division to be responsive to the concerns of the citizens of New Jersey. Due to the complexities of issues surrounding water resources management today, there is a need to offer to those groups or individuals who are "potentially affected interests" an outreach/information program. Such a program includes interfacing with existing networks of statewide organizations as well as holding seminars and providing information for the general public.

- Strategy

Programs for which there is a need for public participation generally require project-specific meetings, or advisory boards. Examples of such programs are the Camden and South River studies, the annual update of the Statewide Water Supply Master Plan, public involvement with the Statewide WQM Plan and the revision of the standards for septic systems (Chapter 199). Due to the specific nature of these efforts, program-specific public participation is the primary responsibility of program managers. Information on strategies and appropriate techniques is available from the Office of Public Participation.

In addition to program-specific participation approaches, the following have also been organized by the Division:

- a. Statewide Informational Seminars/Public Forums

Seminars are conducted periodically, including a major seminar in cooperation with the Clean Water Council each spring. At the seminars, program managers can present their programs and discuss issues of interest with individuals and groups attending.

- b. Division Newsletter

The Division newsletter, has proven to be a highly successful tool for informing the public about the Division's activities. It is based upon items reported to the Director by each of the Elements,

Chapter III

Water Quality and Wastewater Management Policies and Procedures

and is therefore very current. Feature articles will continue to be prepared by either the program staff or by the editor in conjunction with the program staff.

c. Greater Cooperation with Other Statewide Organizations

Educational efforts organized in cooperation with established statewide organizations such as the League of Municipalities, League of Women Voters or others offer the opportunity to effectively and efficiently reach a greater audience. One example of such an effort is the annual Clean Water Week organized in conjunction with the Authorities Association of New Jersey and other statewide water quality groups.

d. Information Depository Within the Division Library

Efforts are made to include all regulations and reports in the Division library to be readily available to the public.

e. Regular Contacts with Public Interest Constituencies

Regular meetings are held by the Division Director with groups representing major constituencies, particularly environmental, industrial, and engineering. Agendas are prepared by the groups themselves to facilitate an open exchange of views. In addition, interest constituencies are consulted on new programs or changes to existing programs, as the need arises.

Chapter III.

WATER QUALITY AND WASTEWATER MANAGEMENT POLICIES AND PROCEDURES

Introduction

Like the "strategies" discussed earlier, the "policies and procedures" represent methodologies for the protection of water quality. Each policy and procedure statement discusses a water quality-related issue of concern, and outlines the manner by which the Division addresses that issue. The overall purpose of these sections is to clearly define and delineate the Division's course of action for each of the subjects discussed in order to ensure consistency in those actions. As noted earlier, these are binding as operational requirements in the implementation of the appropriate permit programs. Additional policies, procedures and strategies may be included in future updates of the Statewide WQM Plan.

This section consists of the Statewide WQM Plan's policies and procedures. These are divided into three subgroups: Water Quality Management, Wastewater Management, and Planning.

A. WATER QUALITY MANAGEMENT POLICIES AND PROCEDURES

These policies and procedures represent mechanisms that the Department will apply in addressing technical issues, factors or problems which are related to water quality. At present, only one policy is included ("Policy for the Protection of Ground Water Quality in the Discharge of Dredged Material at an Upland Disposal Site"); however, it is anticipated that additional sections will be added in future updates of the Statewide WQM Plan.

1. Policy for the Protection of Ground Water Quality in the Discharge of Dredged Material at an Upland Disposal Site

● Background

In accordance with Section 401(a)(1) of the Clean Water Act, activities which require a Section 404 Federal permit for the discharge of dredged or fill materials to waterways also require a State Water Quality Certification (WQC). Proposed discharges of dredged or fill material are technically reviewed for compliance with the State Surface Water Quality Standards, for potential impacts on designated water uses and for an evaluation of proposed mitigative measures. When a discharge of dredged material is proposed for an upland disposal site, potential exists for ground water contamination.

● Purpose and Scope

The purpose of this policy is to establish the Department's position with regard to: protecting ground water quality when discharge of dredged material at an upland disposal site is proposed; providing efficiency in the review of proposed discharges of dredged material; and eliminating or mitigating potential problems resulting from such discharges. This policy applies to all proposed discharges of dredged material at upland disposal sites.

● Definitions

"Upland Disposal Site" means any location other than a sanitary landfill, which is above the mean high water line of a tidal waterway, and is approved by the Department in accordance with the WQC process for the discharge of dredged material.

● Policy

- a. The protection of ground water quality shall be a major consideration of the WQC process when a discharge of dredged material is proposed for an upland disposal site.
- b. Proposals to discharge, at an upland disposal site, dredged material originating from the New Jersey/New York Harbor Complex and the lower Delaware River may be technically reviewed for potential ground water quality impacts.
- c. Proposals to discharge, at an upland disposal site, dredged material originating from areas other than those identified above shall be evaluated for the need for technical ground water quality impact review. The evaluation shall be based on the location and magnitude of the proposed dredging activity, the location of the proposed upland disposal site, information contained in the 305(b) Water Quality Inventory Report, and results of dredge spoil analyses contained in WQC files.

- d. Technical review of proposed discharges shall be based, in part, on analysis of dredged material performed in accordance with the provisions of the Technical Resource Document entitled "Dredge Spoil Analyses Criteria for Water Quality Certification Regarding Surface and Ground Water Impacts" which is available from the Bureau of Planning and Standards, and on an evaluation of proposed mitigative measures.
- e. The Department may approve, conditionally approve, waive, or deny a WQC based upon the findings and conclusions of the technical review of potential ground water quality impacts, with regard to a proposed discharge of dredged material at an upland disposal site.
- f. Proposals to discharge dredged material at a sanitary landfill shall be referred to the Division of Waste Management.
- g. Existing WQC requirements for the discharge of dredged or fill material to surface waters shall remain in effect.
- h. Requests for WQC's shall continue to follow the administrative procedures contained in Department Policy 5.01.
- i. This policy shall remain in effect until such time as the Department institutes a formal ground water pollutant discharge permit program for the discharge of dredged material at an upland disposal site.

B. WASTEWATER MANAGEMENT POLICIES AND PROCEDURES

The following policies and procedures establish the Department's position with regard to various components of wastewater treatment. It is anticipated that additional policies will be incorporated into this section as amendments, as they are developed in the future. The goal of these policies and procedures is to provide for adequate treatment of wastewater, and to minimize or eliminate the detrimental impacts of wastewater on water quality.

Over the years, a number of different types of facilities have been designed and built to treat sewage. The primary strategy for sewage treatment in recent years has been to encourage centralized regional facilities. This strategy has been fostered by the 201 Facilities Grants program sponsored by the EPA and administered by the Department. This program provided 75% federal grants and 8% state grants to local or regional agencies to plan, design and construct sewerage facilities. However, since 1980 these grants have been reduced, and may continue to be reduced. While proposals have been made to provide alternative funds, the primary effect of these cutbacks has been to place more of the responsibility for building sewage treatment facilities on either local governments or the private sector.

While these entities have been receptive to this responsibility, there is clearly a need to establish a consistent Department position with regard to the policies, procedures, and/or plans for the planning, construction, location, operation, expansion and permitting of such facilities.

Policies and Procedures presently included in this section are:

1. Policy on Permitting of Domestic Wastewater Treatment Facilities.
2. Policy on Wastewater Management Plans.
3. Policy for Interim Construction, Expansion, Upgrade and Unplanned Wastewater Treatment Facilities.
4. Sewer Extension Policy and Procedure.

1. Policy on Permitting of Domestic Wastewater Treatment Facilities

● Purpose and Scope

The purpose of this policy is to establish the Department's position with regard to the permitting of domestic wastewater treatment facilities (DWTF). This policy supersedes all other policies, procedures and recommendations pertaining to such facilities, of the Department, or as specified in any of New Jersey's areawide WQM Plans. This policy will be implemented through the WQM Plan Consistency Determination Program (N.J.A.C. 7:15-3.1) and the New Jersey Pollutant Discharge Elimination System Permit Program (N.J.A.C. 7:14A-1 et seq.). This policy is designed to provide accountability in the construction and long-term operation of DWTF and to eliminate or mitigate potential problems with these facilities.

● Definitions

"Domestic wastewater treatment facilities (DWTF)" means any treatment plants, spray irrigation systems, community septic systems, or any other facility regulated by the Regulations Concerning the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A-1 et seq.), and used to treat primarily biological wastes from human sources including drainage from toilets, urinals, sinks, tubs, basins, laundry and kitchen wastewaters from both residential and commercial sources. This does not include systems used primarily for treating industrial wastes, or individual subsurface sewage disposal systems pursuant to the Realty Improvement Sewerage Facilities Act (N.J.S.A. 58:11-23).

"Governmental entity" means federal, state, county or municipal government.

"Municipal government" means a city, town, borough, township or other municipal government created by State law, which has an elected governing body, a chief executive, and municipal public officials including a municipal clerk, tax assessor, and tax collector.

"Sewerage/utilities authority" means any authority created pursuant to the Sewerage Authority Law (N.J.S.A. 40:14A-1 et seq.), the Municipal Utilities Authority Law (N.J.S.A. 40:14B-1 et seq.), or joint meeting designated as a wastewater treatment management agency in an areawide WQM Plan.

● Policy

Governmental entities or sewerage/utilities authorities shall be either the sole permittee or co-permittee for all new or expanded DWTF (defined as "unplanned" under the Policy for Interim Construction, Expansion, Upgrade and Unplanned Wastewater Treatment Facilities) permitted after the adoption of the Statewide WQM Plan. All such entities or authorities shall be identified as a Wastewater Management Agency in a Wastewater Management Plan that is adopted in an areawide or county WQM Plan.

2. Policy On Wastewater Management Plans

● Purpose and Scope

The purpose of this policy is to establish the Department's position with regard to the development and implementation of Wastewater Management Plans (WMP). This policy will be implemented through the WQM Planning Consistency Determination Program (N.J.A.C. 7:15-3.1) and the WQM Plan Amendment Process (N.J.A.C. 7:15-3.4). The policy applies only to non-federally funded projects and does not affect the requirements for 201 Facilities Plans established under federal laws or regulations. 201 Facilities plans will continue to be utilized in the WQM planning process, (see "Policy on Incorporation of 201 Facilities Plans"). The distinction based on the use of federal funds is made in order to differentiate the federal 201 requirements from the State requirements for WMP's. WMP's are intended to provide either supplemental planning to those areas where approved 201 Facilities Plans exist, or new wastewater planning where there are no present plans. WMP's will also serve as the basis for WQM Plan amendments. These plans are further intended to provide long term continuity in the planning and regulation of domestic wastewater treatment systems.

● Definitions

"Unplanned" means either the construction of a new domestic wastewater treatment facility or industrial wastewater treatment facility not identified in either the WQM Plan(s), a Wastewater Management Plan, or approved 201 Facilities Plan(s), or expansion of an existing facility above the capacity allocated in the Plan(s).

"Domestic wastewater treatment facilities (DWTF)" means any treatment plants, spray irrigation systems, community septic systems, or any other facility regulated by the Regulations Concerning the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A-1 et seq.), and used to treat primarily biological wastes from human sources including drainage from toilets, urinals, sinks, tubs, basins, laundry and kitchen wastewaters from both residential and commercial sources. This does not include systems used primarily for treating industrial wastes, or individual subsurface sewage disposal systems pursuant to the Realty Improvement Sewerage Facilities Act (N.J.S.A. 58:11-23).

"Wastewater Management Agency" means a governmental entity or sewerage/utilities authority designated in an areawide WQM Plan to provide one or more of the following services: planning, construction and/or operation of wastewater treatment or conveyance facilities.

"Wastewater Management Plan" means a written and graphic description of existing and proposed, wastewater treatment and conveyance facilities.

● Policy Statements

- a. The Department shall only issue a NJPDES permit for "unplanned" DWTF after they are identified in an approved Wastewater

Management Plan, an approved 201 Facilities Plan, or an approved WQM Plan.

Where a proposed facility is not already identified by an approved plan, such a plan will have to be developed prior to the issuance of a NJPDES permit.

- b. NJPDES permits for "unplanned" DWTF shall only be issued to an agency identified as Wastewater Management Agency (WMA) in an approved WQM Plan. A WMA shall be either the sole permittee or co-permittee of the DWTF. Existing designated management agencies for sewerage facilities shall be considered to be WMA's. (This includes all 201 Facilities Planning agencies).
- c. WQM Plan amendments that involve significant modifications to sewer service area delineations shall require the preparation of a WMP.
- d. No State grants or loans will be given to an agency or municipality without an approved WMP.
- e. WMP's shall be prepared on a municipal or regional planning area basis where an area is part of a regional planning area. Where the appropriate portions of the regional plan adequately address the area's wastewater management needs, those portions may be used as corresponding sections of the WMP (Example: a municipal sewer collection system as part of a regional conveyance and treatment system). Applicants shall also apply for a NJPDES Discharge Allocation Certificate for the treatment plant, concurrently with the development of the WMP's. WMP's for municipalities must be endorsed by the 201 Wastewater Facilities Planning Agency where appropriate.
- f. All WMP's must be submitted to the Department for approval. Approved plans will be adopted as amendments to the appropriate areawide or county WQM plan following the respective WQM Plan amendment procedure. The Department shall review and, if appropriate, approve and adopt Plans in the non-designated areas of the State.
- g. The requirements for a WMP are available from the Bureau of Planning and Standards in a document entitled "Requirements for Preparing Wastewater Management Plans."

3. Policy for Interim Construction, Expansion, Upgrade and Unplanned Wastewater Treatment Facilities

● Purpose and Scope

It is the purpose of this policy to establish the Department's position with regard to planning for interim construction, expansion, upgrade, and/or unplanned wastewater treatment facilities proposals. While the policy provides for certain WQM Plan amendment exemptions, it is the objective of this policy that all wastewater planning must be consistent with the adopted WQM Plan(s), Wastewater Management Plans, and the approved 201 Facilities Plan. This policy applies to all domestic and industrial wastewater treatment facilities.

● Definitions

"Unplanned" means either the construction of a new domestic wastewater treatment facility or industrial wastewater treatment facility not identified in either the WQM Plan(s), a Wastewater Management Plan, or approved 201 Facilities Plan(s); or an expansion of an existing facility above the capacity allocated in the Plan(s).

"Interim construction and/or expansion" means a treatment plant construction and/or expansion in accordance with the following conditions or situations:

- a. Expansion of existing permanent treatment facilities to a flow less than the design capacity indicated in the WQM Plan(s), Wastewater Management Plan or approved 201 Facilities Plan.
- b. Construction and operation of new treatment facilities during the defined period from grant or contract award to construction completion of a public or regional facility, where such new facilities are designated to be abandoned or incorporated into the regional facility. Such facilities are to be located on the site of the funded facility, where practicable.
- c. Expansion of existing treatment facilities, during the defined period from grant or contract award, to construction completion of a public or regional facility, where such existing facilities are designated to be abandoned or incorporated into the regional facility.

"Wastewater treatment facilities" for the purpose of this policy means domestic and industrial facilities whose primary purpose is to treat wastewater as identified in the Regulations Concerning the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A-1 et seq.), primarily treatment plants and interceptors; and/or the Policy on Permitting of Domestic Wastewater Treatment Facilities.

"Upgrade" means improvement in plant efficiency to achieve permit requirements and/or increase in flow to NJPDES permitted flow.

● Policy Statements

a. Water Quality Policies

- i. Secondary treatment will be required as the minimum treatment level for any interim expansion or upgrade. However, for a primary treatment facility, increases in flow up to NJPDES permitted flows may be allowed with incremental increases in treatment level, when there is adequate evidence of significant municipal and/or Statewide, social or economic benefit. Such incremental increases shall be in accordance with an approved compliance schedule incorporated in a revised permit. This policy in no way abrogates the Federal mandate of attaining secondary treatment for all municipal wastewater treatment facilities by July, 1988.

For secondary and advanced secondary treatment facilities, upgrade to NJPDES permitted flow shall be required to meet existing NJPDES permitted levels if more stringent than secondary. For advanced wastewater treatment (AWT) facilities, upgrades shall meet water quality based effluent limitations.

- ii. Interim expansions beyond existing NJPDES permitted flows, but below flow levels allocated in the WQM Plan, Wastewater Management Plan, or 201 Facilities Plan, shall meet either: secondary treatment; water quality based effluent requirements developed by the Department; or level of treatment indicated in the Plan(s); whichever is most stringent. Incremental increases in flow tied to incremental increases in levels of treatment beyond secondary may be allowed in accordance with an approved compliance schedule incorporated in a revised permit.
- iii. Interim construction of new facilities that are to be abandoned or incorporated into a regional facility, (which is either under construction or has a contract awarded), shall meet water quality based effluent requirements developed by the Department.
- iv. Interim expansion of existing facilities that are to be abandoned or incorporated into a regional facility (which is either under construction or has a contract awarded) shall meet secondary treatment as a minimum requirement, or existing NJPDES permit levels (shall maintain same pounds/day loadings) if more stringent. AWT facilities shall meet water quality based effluent requirements.
- v. Unplanned facilities shall meet water quality based effluent requirements. Increases of unplanned facilities effluent shall also meet water quality based effluent requirements.

Incremental increases in treatment may be allowed in accordance with an approved compliance schedule incorporated in a revised permit.

Table 4 illustrates the application of these policies.

b. Planning Policies

- i. All unplanned facilities (expansion or new construction) proposals are considered to be inconsistent with the WQM Plans and shall require WQM Plan amendment.
- ii. Proposals for upgrades and interim construction/expansions will not require WQM Plan amendments. However, these proposals shall be noted in the Plan updates, as appropriate.
- iii. Where existing regional sewage treatment facilities are available, domestic wastewater flows from proposed collection facilities for projects in the treatment facility's sewer service area shall be conveyed to such facilities. Upgrading and/or expansion of existing facilities to serve new flows, shall be examined and utilized prior to construction of new treatment facilities at another site.

TABLE 4 - WASTEWATER FACILITIES POLICY ILLUSTRATION

Current Design of Treatment Plant	Facilities To Be Abandoned**				Unplanned Existing Facility
	Upgrade to NJPDES Permitted Flow	Expand Beyond NJPDES Permitted Flow, But Below WQM/201 Allocated Capacity*	Construction of New Facility	Expansion of Existing Facility	
Primary	Minimum of secondary treatment or increases if warranted, up to secondary treatment.	Secondary treatment; level of treatment required in WQM/201 Plans*; or water quality based effluent limitations, whichever is more stringent. Incremental increases may be approved.	N/A	Secondary treatment shall be the minimum requirement or existing NJPDES permitted levels (shall maintain same pounds/day) if more stringent than secondary.	Shall meet water quality based effluent requirements. Incremental increases may be approved.
Secondary or Advanced Secondary	Secondary treatment shall be minimum requirements; or existing NJPDES permitted levels (shall maintain same pounds/day) if more stringent than secondary.	Same as above	Water quality based effluent requirements.	Same as above	Same as above
Advanced Wastewater Treatment	Water quality based effluent limitations	Same as above	Same as above	Water quality based effluent requirements	Same as above

Notes: * Design capacity indicated in Areawide Water Quality Management Plans (208) or Wastewater Facilities Plans (201)

** These are facilities which will be abandoned into a regional facility which is either under construction or has a contract awarded.

4. Sewer Extension Policy and Procedure

• Purpose and Scope

The purpose of this document is to provide an efficient procedure for reviewing sewer extension permit requests, and to establish the Department's planning policy regarding sewer extensions, pump stations, and force mains. This policy formalizes the Department's program to change the primary emphasis of this permit process from sewer extension engineering design review to sewer allocation review.

• Policy Statement

The Department will henceforth utilize the design engineer's sealed plans and the endorsement of the operating authorities as the primary mechanism for engineering design review approvals. The emphasis of the Department's review will focus primarily on the appropriateness of the sewer allocation and on the provision of sewer service.

• Procedure

Traditionally, the Department has made in-depth reviews of engineering plans and specifications prior to issuing a sewer extension construction permit. After careful consideration, the decision has been made to reduce processing time of applications by relying on the design engineer's plans and the endorsements of the operating authorities. To effectuate this decision, the following changes are being made:

- a. A form ("Engineers Report for Sewer System": FSE#6) has been developed by the Department. This form consolidates, in a uniform manner, all of the basic data needed for a review of an application.
- b. A new "Endorsements" Form (FSE#4) has been designed as a supplement to the Standard Application Form CP#1. This form embodies in one location all of the approvals required by various agencies prior to an application being submitted.
- c. A new permit "Notice of Authorization" (FSE#2) has been designed to consolidate both the authorization to construct and operate a sewer extension, pump station or force main. This form will be issued by the Department but requires local agency approval prior to commencement of partial or total operation.
- d. Upon completion of a project, the certifying engineer must complete and have approved by the local agency, a "Certification of Approval" form (FSE#5) which will be submitted to the Department.
- e. To authorize partial or total operation, the local agency must issue an "Approval to Operate by Local Agency, Sewer Extension, Pump Station, Force Mains" (FSE#8).

- f. A "Flow Summarization, Quarterly Report" form (FSE#7) has been designed to provide uniform reporting by local agencies of their flow volumes.
- g. Sewer systems (interceptors, collectors, pump stations) for residential developments of 50 or more units and industrial/commercial developments having flows of 25,000 gallons or more per day require a WQM Plan consistency determination by the Department or designated planning agency; residential developments of 49 units or fewer, and industrial/commercial developments having flows less than 25,000 gallons per day do not require a consistency determination (pursuant to N.J.A.C. 7:15-1 et seq.); however, these projects shall still be consistent with the appropriate WQM Plans and the Department reserves the right to review any project for consistency.
- h. Applications will also be reviewed by the Department for consistency with approved 201 Facilities Plans and Wastewater Management Plans, through the WQM Consistency Determination Program. Consistency with other applicable State and Federal laws and regulations shall also be required.
- i. Applications will also be reviewed to determine if any adverse environmental impacts will result from the activity. Adverse water quality related environmental impacts may result in revision or denial of the application.

C. PLANNING POLICIES AND PROCEDURES

The planning policies constitute various mechanisms which are integral to the WQM planning process. Such policies provide for the effective coordination between Division planning programs (e.g., WQM Planning and wastewater facilities planning), in order to ensure consistency in planning outputs. The planning policies include:

1. Policy on Incorporation of 201 Facilities Plans
2. 201 Facilities Planning Area Designation
3. Procedures for the Use and Review of Population Projections in Water Resources Management Planning

1. Policy On Incorporation of 201 Facilities Plans

● Background

201 Facilities Plans were prepared pursuant to the Federal Clean Water Act (33 U.S.C. 1251 et seq.) which authorized the preparation of plans and specifications for the construction or modification of treatment works. These plans address a wide range of issues in relation to the provision of wastewater treatment facilities. The preparation and implementation of these plans are primarily the responsibility of the facilities planning agencies designated in the areawide WQM plans, with the approval of the Department.

The "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq.) require that all NJPDES permitted projects be consistent with adopted 201 Facilities Plans. In addition, the New Jersey Water Quality Planning Act (N.J.A.C. 58:11A-1 et seq.) requires that all waste treatment activities be consistent with the adopted areawide WQM Plans. In accordance with Federal and State law, 201 Facilities Plans must be consistent with the areawide WQM Plans. Since the 201 Facilities Plans identify various aspects of wastewater treatment that are also concurrently required to be addressed by the areawide WQM Plans, it is appropriate that the applicable portions of these plans be integrated. In addition, the successful implementation of the WQM Consistency Determination Program requires that the two plans be utilized in conjunction when performing reviews.

The 201 Facilities Plan preparation and approval process, however, was significantly modified in 1975, particularly in regard to delineations of sewer service areas constrained by environmentally sensitive features. Therefore, the Division concluded that only those 201 Facilities Plans approved after May 31, 1975, should automatically be incorporated. 201 Facilities Plans completed prior to this date may be incorporated on a case-by-case basis, through the WQM Plan amendment process.

● Scope and Purpose

This policy applies to all 201 Facilities Plans approved and certified by the Department and approved by the EPA, after May 1975.

● Policy Statements

- a. Water quality management planning related documentation in present and future 201 Facilities Plans, approved and certified by the Department and approved by the EPA, are hereby incorporated in the appropriate WQM Plans. This documentation may include, but is not limited to: selected facilities alternative, future design capacity and flows, treatment levels, sewer service areas, septic management areas, sludge and septage management and disposal plans, environmental constraints mapping, identification of

management agencies, and grant conditions. Itemized abstracts of the appropriate documentation are available at the Division.

- b. Amendments, revisions, corrections, and updates to the planning related documentation cited above, will be made through the WQM Plan in accordance with the Water Quality Management Planning and Implementation Process Regulations (N.J.A.C. 7:15-1 et seq.), State and Federal laws, regulations, and agreements.

2. 201 Facilities Planning Area Designation

• Background

The Division's Bureau of Planning and Standards, in September 1981, developed "Policy and Procedures for the Designation of Facilities Planning Areas." This document concerned the designation of new facilities planning areas or the modification of boundaries of existing facilities planning areas. Changes in the federal construction grants program (as part of the federal Clean Water Act Amendments of 1981), however, necessitated that the policy outlined in the September, 1981 document be revised.

The 1981 policy and procedures was based on the requirement that before a Step 1 Section 201 construction grant could be awarded to a project, the facilities planning area boundaries must be clearly mapped in the Plan of Study, and that such boundaries be consistent with the appropriate and adopted WQM Plan(s). New or modified facilities planning area boundaries were considered consistent with WQM Plans on the basis of interim and/or adopted amendments to the WQM Plan. This determination was a result of review and approval by the Bureau of Planning and Standards (BPS), which has the responsibility for the proper delineation of such areas. The grant applicant was encouraged to consult all interested agencies, adjacent facilities planning agencies and adjacent undesignated areas (if present). This was to promote the study of the most cost-effective and environmentally sound planning area boundary. The policy and procedures were designed to eliminate the confusion of existing facilities planning area boundaries, resulting from a previous lack of a consistent State procedure for designation of facilities planning areas. The BPS also assumed responsibility for producing an updated Statewide map of facilities planning area boundaries to be a part of the Statewide WQM Plan. A reduced version of this map is presented as Figure A-1 in the Appendix. The full-sized map is available for inspection at the office of the BPS.

The federal Clean Water Act Amendments of 1981 reduced the scope of a project eligible for 201 grant funds. Only Steps 2 (design) and 3 (construction) of a project are now eligible. The Department reduced the scope of eligibility even further to cover the Step 3 process only. This is to allow the funding of a greater number of projects because of severely reduced 201 grant appropriations at the federal level. These procedures reflect these changes.

• Scope and Purpose

The purpose of the procedures outlined below is to allow for the designation of wastewater facilities planning areas by the Department and planning agencies. The specified procedure requires that 201 wastewater facilities grants be certified by the Department only if a corresponding facilities planning area and planning agency has been designated beforehand by the Department. These procedures supersede

the 1981 "Policy and Procedures for the Designation of Facilities Planning Areas."

- Procedure

These procedures seek to ensure that wastewater facilities planning, dependent upon federal and state grant aid, is initiated only where needed and that proposed new or modified facilities planning areas are adequately discussed and mapped prior to Step 3 grant certification. The Department will utilize these procedures in determining the adequacy of facilities planning area boundaries. These procedures require that any agency's request for designation, or modification, of facilities planning areas will be referred to the BPS for timely review and approval, in consultation with the Division's Construction Grants Administration and the appropriate designated WQM agency (if any). The Department also requires that applicants discuss their proposal with officials of adjacent designated or undesignated facilities planning areas so that the most cost-effective and environmentally sound area is considered.

The designation of facilities planning areas shall be consistent with the New Jersey Water Quality Management Planning and Implementation Process Regulations (N.J.A.C. 7:15-1 et seq.). In conformance with these regulations, designations will take the form of amendments to the appropriate WQM Plan(s). The procedures for the designation of facilities planning areas will follow the WQM Plan Amendment Procedures listed in the Water Quality Management Planning and Implementation Process Regulations (N.J.A.C. 7:15-1 et seq.), with the exception that the following information will be required:

- a. A map clearly showing the boundaries of the proposed new or modified facilities planning area boundaries;
- b. A brief discussion of the need for facilities planning area designation or modification of existing planning area boundaries;
- c. An analysis of the relationship between the proposed undesignated area and adjacent areas (applies to the designation of undesignated areas only). This is to encourage that the area being proposed consider the possibility of being included in adjacent and existing designated areas, or to include adjacent undesignated areas in their proposal. Certain cost and/or environmental benefits may result from such joint studies. In addition, the Department feels it is undesirable to leave small or isolated portions of areas undesignated, especially if an adjacent area is proposing designation;
- d. Other information as needed on a case-by-case basis.

In addition to the designation of facilities planning areas, the Department shall require the designation of a facilities planning agency to conduct the planning for the area. Designation for facilities planning areas will not be considered to be complete unless accompanied by a designation of a facilities planning agency.

3. Procedures for the Use and Review of Population Projections in Water Resources Management Planning

- Background

These procedures supersede the policies and procedures presented in the five State-developed areawide WQM Plans (Monmouth, Northeast, Upper Raritan, Upper Delaware, and Lower Delaware), as well as the Division draft version prepared in May 1981. The population projections presented in this procedure (see Table 5) represent the most recent data available including the 1980 Census. These numbers are projections and not forecasts. They are based on analysis of past trends and do not reflect policy-based objectives.

- Purpose

As a result of the 1980 Census, the Department determined that there was a need to update and revise the population forecasts presented in the areawide WQM Plans. In addition, the State determined that projections of population should not reflect policy objectives and should be based solely on analysis of past economic and demographic data trends.

- Scope

This procedure replaces and supersedes all previously developed population forecasts and/or projections in New Jersey's twelve areawide WQM Plans, as well as the New Jersey State Water Supply Master Plan. These projections are to be used for all wastewater, water quality, and water supply planning purposes. In addition, the Commissioner of the Department of Environmental Protection, on August 4, 1983, adopted these projections for all Departmental activities.

- Policy and Procedure

The population projections in this document are county-wide disaggregations of the Statewide population projection for the year 2000 of 8.533 million. The projections were based on projections developed by the N.J. Department of Labor (DOL). DOL developed four sets of projections, two of which ("ODEA Economic/Demographic (E/D) Model" and "ODEA Demographic Cohort (DC) Model") were deemed preferred. The projections in this document represent a combination of these two models.

The E/D model used employment trends and demographic analysis to project population. The DC model projected population on fertility rates of surviving females age 15 to 44 years and migration of persons. The detailed methodology descriptions of these models are available in a working paper entitled "New Jersey Revised Total and Age & Sex Population Projections July 1, 1985 to 2000," Department of Labor, July 1983 (hereby adopted in this Plan by reference).

Chapter IV

Initial WQM Activities and Other Planning
Related Outputs and Accomplishments

Chapter IV.

INITIAL WQM ACTIVITIES AND OTHER PLANNING RELATED OUTPUTS
AND ACCOMPLISHMENTS

The twelve initial WQM plans addressed a wide range of water quality-related subjects and issues. Subjects which had previously received little or no attention in the State were studied in considerable detail during the initial stage of WQM planning. Priorities varied between study areas and as a result, those issues which were of greatest concern locally were stressed.

Findings and recommendations, however, often proved beneficial over a wide area of the State. This section discusses those topics stressed in the initial WQM plans. Also included, are summaries of other technical outputs completed by the Division as part of the WQM planning program.

A. SUMMARY OF AREAWIDE WATER QUALITY MANAGEMENT PLANS

Each of the WQM Plans was required, by Federal and State mandate, to address certain subjects and issues. Among the items to be included in the plans were: description of planning boundaries, water quality assessment, inventories and projections, nonpoint source assessment, water quality standards, total maximum daily loads, point source load allocations, municipal and industrial waste treatment systems needs, nonpoint source control needs, residual waste control needs, urban and industrial stormwater systems needs, target abatement dates, regulatory programs, management agencies, and an assessment of impacts of carrying out the plan. Of these subjects and issues, those of greater importance received emphasis, based on a consideration of the water quality issues of greatest concern in each planning area.

Among the more significant subjects addressed by the non-designated areawide plans (Northeast, Upper Raritan, Lower Raritan, Upper Delaware and Monmouth), were: point source control, nonpoint source control, water quality assessment, and designation of management agencies to address issues and needs of concern. Point source control was addressed through such plan components as "Point Source Control Plans," "Interim Procedures for Establishing Water Quality Based Effluent Limitations" (later modified and included in Department regulations), and "Guidelines for the Evaluation of Alternatives to Regional Treatment Systems in 201 Facilities Plans."

The non-designated areawide plans addressed nonpoint source control through the inclusion of "Best Management Practices" for agriculture, silviculture, construction, and surface mining. The plans had determined nonpoint sources to be of relatively significant water quality impact, based on study of existing information as well as surface water and ground water sampling. The ground water sampling study was performed in coordination with the State's Program of Environmental Cancer and Toxic Substances project.

A significant element of the non-designated areawide plans was their legal/institutional analysis and designation of management agencies to address point source control, nonpoint source control and other water

quality-related issues. Subsequent to completion of the initial non-designated areawide WQM Plans, the planning program emphasized implementation of the County Environmental Health Act, development and implementation of a Consistency Determination procedure, refinement of population forecasts, further development of nonpoint source control programs and other key topics.

The designated planning areas also sought to address the issues of greatest concern to their areas. The Middlesex WQM Plan was broad in scope and addressed several of the required plan components to some degree. Due to the essential nature of ground water to the area, however, that subject was given some emphasis during the initial and continuing phases of planning. The initial plan contained many recommendations which were intended to promote ground water protection and to provide guidelines for local program development. Later, in continuing planning, some of those recommendations were further addressed through study of such mechanisms as conjunctive use water management, a ground water management manual and a program of municipal ordinances for ground water management. Other priority concerns in the initial plan were stormwater management, lake management, stream corridor protection, major point sources, and institutional arrangements at the county and watershed levels.

The Sussex County Planning Area was also concerned with ground water protection and it sought to address such protection through development of a ground water protection manual. The study area also emphasized the management of on-site disposal so as to minimize the impact of septic tanks on the ground water. Another priority concern to the planning area is the protection of its lakes. To that end, lakeshore development guidelines were planned for completion, as well as other mechanisms for lake protection.

The Cape May WQM Plan shared Sussex's concern for on-site wastewater system management. That plan included a strategy for the management of the county's septic tanks. That plan was implemented initially in Dennis Township. The county on-site management program is being further developed and implemented through the County Environmental Health Act program. Cape May has also focused attention on land application of wastewater. A pilot program of land application of secondarily treated wastewater is being undertaken in cooperation with the Cape May Municipal Utilities Authority to determine the effect of the effluent on animal food crops.

Atlantic County has stressed protection from stormwater-derived impacts. While that planning area's specific results, such as an inventory of stormwater structures, are of use primarily to the county, other components are of prototype value for other areas of the State. The Township of Egg Harbor has developed and approved passage of a municipal stormwater ordinance. That ordinance also provides protection for wetland areas within the municipality. Environmentally sensitive areas had been an item which was stressed during the initial phase of Atlantic County's planning program.

The Tri-County and Mercer County initial planning studies were conducted by the same planning agency (Delaware Valley Regional Planning Commission), and so were similar in structure. The studies were ambitious and attempted to address several of the planning topics. Strong components of those plans were water quality assessments on a watershed basis, development of a

procedure for considering environmentally sensitive areas, and the inclusion of recommendations addressing a wide range of water quality-related issues. In its continuing planning activities, Tri-County stressed the adaptation of prototype planning findings to its area and stormwater management; while Mercer (now with the County Board of Chosen Freeholders as planning agency) stressed stream corridor management, stormwater toxics analysis and control, and County Environmental Health Act activities.

The Ocean County WQM planning study addressed a wide range of water quality related issues, and was especially strong in its discussion and mapping of environmentally sensitive areas and ground water protection. The planning area's interest in ground water protection was reflected in its continuing planning activities, which included further study, in coordination with the Division and the USGS of its ground water resources. Ocean County developed a ground water monitoring program, which included the drilling of new wells to obtain essential water quality data. The County also sought to develop a septage management plan, and to develop technical and institutional modifications to its stormwater program.

In addition to the items discussed above, it should be noted that each of the WQM planning studies included public participation programs which allowed interested organizations, agencies and the general public to be involved throughout the course of planning. This activity was conducted through Policy Advisory Committees, Technical Advisory Committees and other groups.

B. OTHER OUTPUTS OF THE WQM PLANNING PROGRAM

Since the completion of the initial WQM Plans, several Department activities have served to further meet the objectives discussed in the Introduction (see Section I.c.). These WQM planning activities have resulted in Technical Resource Documents which are available from the Division for review. Each of the Technical Resource Documents is described below. It should be noted that Technical Resource Documents serve to provide information or guidance: they are not considered as binding in the Consistency Determination Program, and they do not require a plan amendment for revision. Working papers written during the initial stage of WQM planning have a similar status, as they also are not used in Consistency Determinations.

While the Technical Resource Documents do not constitute WQM plan amendments, other Department outputs are to be considered plan amendments. Those amendments are discussed in Section II of the Appendix.

1. "Basic Information About New Jersey Trout Waters" (July 1982, Revised October 1983): This report, which has been of interest to other agencies and the public, contains information related to trout and trout waters. Among the topics discussed are: trout life history and ecology, distribution of Trout Production and Trout Maintenance watersheds in the State, provision of protection for trout and trout waters by Department programs, and other related information.

In addition, appendices to the report list trout waters classifications (corresponding to the New Jersey Water Quality Standards), list recommended trout waters classification changes, and specify the different kinds of trout found in New Jersey waters.

2. "Literature Review on Degradation of Trout Habitat from Stream Encroachments" (July 1982): The placement of structures in or near a trout stream, as well as physical modifications of the stream channel and riparian banks, may result in changes which can threaten trout living in those water bodies. This report discusses several categories of stream encroachment projects and the detrimental effects to trout habitat which may result. Such factors should be considered in the design of projects so that adverse effects to trout may be minimized.
3. "Requirements for Preparing Wastewater Management Plans": Non-federally funded projects involving the construction or expansion of domestic wastewater treatment facilities require the completion of a Wastewater Management Plan. This document discusses what is required in completing a Wastewater Management Plan. The document also includes the policy requiring the completion of a Wastewater Management Plan.
4. "Financial and Institutional Modifications to the State of New Jersey Soil Erosion and Sediment Control Act (Chapter 251) Regulations": The New Jersey Soil Erosion and Sediment Control Act was evaluated to determine its effectiveness in helping meet water quality objectives. The evaluation included such factors as: financial management, institutional arrangements, effectiveness of technical standards, administration, legal assistance, review, inspection and enforcement

procedures, and identification of resource needs for effective soil erosion and sediment control. The project had several objectives, among which were:

- a. Establishment and documentation of policies and procedures for review, inspection, and enforcement of erosion and sediment control plans.
- b. Identification of total resource needs (technical, legal, administrative) for effective program implementation.
- c. Assessment of the performance of districts and State authorized exempt municipalities, and development of performance monitoring procedures.
- d. Achievement of Chapter 251 program effectiveness in controlling erosion and sedimentation from private and public construction, mining, and other controlled activities.

Several papers were written as part of this project, and are listed below:

- i. "Analysis of All District Procedures and Operations"
- ii. "Report of Strengths and Needs for Improvements in Implementing the Soil Erosion and Sediment Control Act"
- iii. "Administrative Policies and Procedures Manual"
- iv. "A Study of Exempt Municipalities in Coordination and Cooperation with Soil Conservation Districts"

Also completed were revisions and modifications to existing soil erosion and sediment control standards.

5. "Dredge Spoil Analyses Criteria for Water Quality Certification (WQC) Regarding Surface and Ground Water Impacts."

This document is a master list of analyses which may be required of a Water Quality Certificate applicant proposing a dredge/fill activity. Some or all of the analyses could be required, with the applicant responsible for having the analyses conducted and submitted to the Division of Water Resources for review.

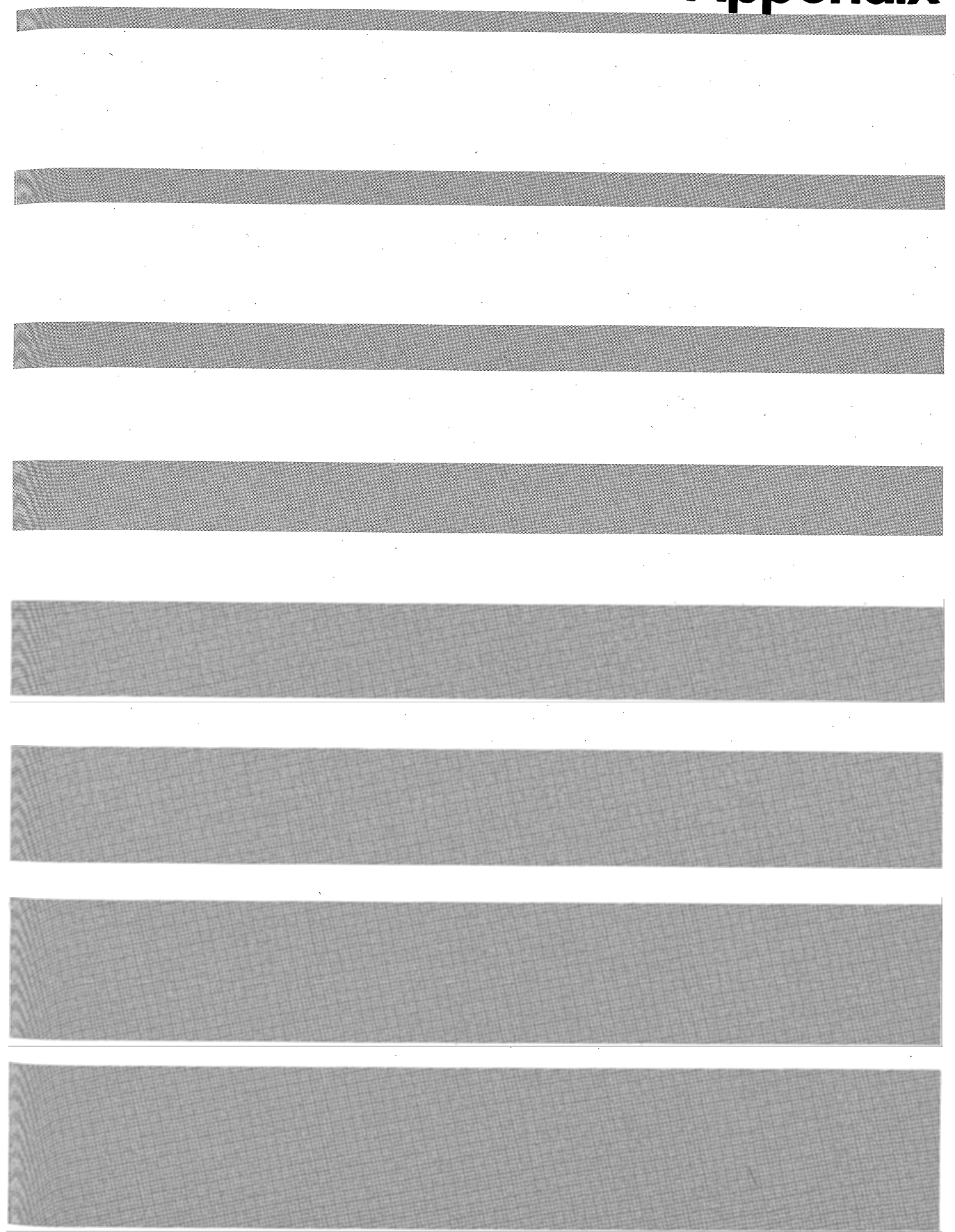
6. "Guidelines of the Utilization and Disposal of Municipal and Industrial Sludges and Septage" (July 1981): This document was developed in response to the Department's position that sewage sludge contains recoverable resources and that ultimate disposal of sludge should, whenever possible, result in an environmental and economic benefit to society. In order to ensure the most environmentally acceptable and cost effective means of disposing of or utilizing sludge and septage, the development of sludge management plans is necessary. This document provides guidance for the development of such plans.

Related guidelines which are also components of the Statewide WQM Plan are:

- a. "Guidelines for Land Disposal of Effluent by Spray Irrigation"
 - b. "Guidelines for the Land Application of Residuals"
7. Computerized Ground Water Data Base: A computerized ground water data base was developed to store the wealth of data generated from the Division's ground water permitting activities. The data base is near implementation, as the data reporting forms have been developed and are being readied to send to the ground water permittees. Among the facilities to receive reporting forms are: landfills, discharges to infiltration/percolation lagoons, land application of sludge or septage, and land treatment of industrial wastes.
 8. "Sourland Mountain Ground Water Management Report:" This project was conducted in order to study problems related to ground water depletion in the Sourland Mountain area of Central New Jersey. While the study concentrated on that portion of the State, it was designed to serve as an example for other areas having similar problems and geohydrologic conditions. Among the components of the document are a description of the ground water system, a discussion of well yields, a legal and institutional analysis, and a model ordinance for the protection of ground water through designation of critical ground water supply areas and regulation of ground water withdrawal.
 9. "Bacterial Contamination of Shellfish Harvest Areas in the Navesink River" (June, 1982): This report describes the planning and implementation of a nonpoint source identification and control program aimed at restoring and protecting shellfish growing waters in the Navesink River, currently impaired by bacterial pollution from agricultural and urban/suburban animal sources, as well as identification of federal, state and local management agencies with responsibility for carrying out the plan. This study was the basis for the authorization of a \$1.2 million "Navesink Watershed Plan" (Feb. 1985) by the Soil Conservation Service (U.S.D.A.), to provide cost-share funding to control agricultural pollution in the Navesink Watershed.
 10. Landfill Control Priorities: Landfill studies have resulted in the development of a priority system to aid in determining which facilities should be issued a New Jersey Pollutant Discharge Elimination System (NJPDDES) permit. In prioritizing the landfills, several factors are considered, among which are: acreage of the facility, whether it is currently operating, its Superfund status, whether it is in litigation; the geological formation on which it is sited, the type of waste accepted, and whether or not it is lined. A "Bureau of Ground Water Discharge Permits Tracking Report - Landfill Section" is prepared monthly. That report tracks the current status of landfill facilities in the NJPDDES process.
 11. Chloride Concentrations in Wells of the New Jersey Coastal Plain: The report entitled "Distribution of Chloride Concentrations in Principal

Aquifers of New Jersey Coastal Plain" documents areas where saltwater intrusion is presently occurring as well as areas where the potential for intrusion is great. Trends were determined based on data from 202 different wells, screened in fourteen water-bearing formations.

12. Ground Water Level Trends: The report entitled "Evaluation of Water Levels in Major Aquifers of the New Jersey Coastal Plain" maps and evaluates water level trends for several important Coastal Plain aquifers. Ground water withdrawals from Coastal Plain aquifers have increased since 1900 and a periodic evaluation of water levels is necessary for effective ground water management. As part of this project, water level trends from the early 1970's to 1978 were studied and described.



APPENDIX

INTRODUCTION

The Appendix contains several sections which append the main Statewide WQM Plan. Two types of information are included: background for the Statewide WQM Plan, such as relevant State statutes and regulations; and sections which are components of the Plan, but which were felt to be most appropriately included in the Appendix due to their lengthy nature or other factors. The former includes such items as the New Jersey Water Quality Planning Act, and the Water Quality Management Planning and Implementation Process Regulations. The latter includes the Areawide WQM Plan Amendments and Revisions, the Summary of Certification Conditions, and the Summary of the Division of Water Resources Water Quality Management Implementation Program.

I. Summary of the Division of Water Resources Water Quality Management Implementation Program

The Water Quality Management (WQM) Program, of which the Statewide WQM Plan is a component, is part of the Division's overall effort to protect water quality. Various elements within the Division are involved in other water quality-related implementation programs and activities. These responsibilities are described in this section, as each Division element (including sub-units) is discussed.

1. CONSTRUCTION GRANTS ADMINISTRATION

The Construction Grants Administration (CGA) is organized as follows:

- Bureau of Grant Management
- Bureau of Design and Technical Services
- Bureau of Construction Management

The responsibilities assigned to the CGA include the administrative and technical review and evaluation of Facility Planning (Step 1); engineering design (Step 2); and constructing (Step 3) of public wastewater collection, conveyance, treatment and disposal facilities and all other project related technical documents, studies, and reports funded with federal and state grant funds for public wastewater facilities; and the overall financial and program management of construction grant projects.

The CGA is responsible for administering the EPA Construction Grant program authorized by the Federal Water Pollution Control Act as amended (PL 92-500, PL 95-217, PL 97-117). Authority delegating the responsibility for this program to the Department is contained in an agreement executed between the Department and EPA and the following statutory authorities:

Federal Water Pollution Control Act as amended by the Clean Water Act of 1977 (PL 95-217, Title II - Grants for Construction of Treatment Works); the New Jersey Water Pollution Control Act (NJSA 58:10A-1 et seq.); the State Public Sanitary Sewerage Facilities Assistance Act of 1965 (C.26:2E-8); the Water Conservation Bond Act of 1969; and the Clean Water Bond Act of 1976.

Specific functions and duties are set forth below:

i. Bureau of Grant Management

The functions of the Bureau include the following: developing and maintaining grants management systems, conducting needs surveys, maintaining the Federal Grants Information Control System (GICS), maintaining the Contract Management System, developing and maintaining a project financial management system, coordinating the procurement and usage of outside professional services, coordinating with other Division elements in conjunction with the development of the Priority List, Needs Survey and special reports, developing the GICS data base to monitor project

milestones, developing statewide data bases to be used in preparing the project priority lists, and responding to Freedom of Information requests.

ii. Bureau of Design and Technical Services

The Bureau of Design and Technical Services is responsible for the evaluation, control and overall development of Step 1 and Step 2 projects; development and implementation of new program initiatives; review of facility plans, construction plans and specifications and related documents; coordinating reviews with all other programs; and approving and certifying projects to EPA.

The Bureau consists of a Metropolitan/Northern Design Unit, a Southern/Central Design Unit and a Technical Services Unit.

The Design Units are responsible for the overall management and technical services of all facility plans and construction plans and specifications. Responsibilities include monitoring and tracking projects and assuring that all projects listed for Step 3 grant awards are completed and certified to utilize the State's grants monies in a timely fashion.

The Technical Services Unit is responsible for the environmental aspects of grant projects and the development of new program initiatives; coordinating program elements and public interest groups; developing programs for individual systems, land treatment and multi-use projects; developing programs for Innovation/Alternative and combined sewer overflow correction projects; and promoting the development and implementation of specialty projects.

iii. Bureau of Construction Management

The Bureau of Construction Management is responsible for the overall management of construction projects, including the technical and financial aspects. The Bureau is also responsible for maintaining computer tracking systems, development of the biennial needs surveys and developing special and routine reports on program activities.

The Bureau consists of the Northern and Southern Construction Control Units, the Grants Administration Unit and the Grants Management Unit.

The Construction Control Units are responsible for all technical aspects of construction projects from the award of a Step 3 grant through and including project closeout and final payment; monitoring construction progress; conducting preconstruction conferences; reviewing bid material, construction change orders, user charge and industrial cost recovery systems; and reviewing operation and maintenance plans.

The Grants Administration Unit is responsible for the administrative review and processing of federal and state grant applications; processing payment requests; performing cost and price analysis for engineering contracts; reviewing grantee's accounting systems; and maintaining project files.

The Grants Management Unit is responsible for developing grants management systems; conducting needs surveys; maintaining the Federal Grants

Information Control System (GICS); developing reports using the GICS data base to monitor project milestones; developing statewide data bases to be used in preparing the project priority lists and responding to Freedom of Information requests.

2. ENFORCEMENT ELEMENT

The Enforcement Element is responsible for enforcing compliance with permits, approvals, authorizations, orders and penalties issued by the Division and statutes and regulations for which the Division has jurisdiction. In addition, it is responsible for the investigation of water related pollution problems for which the pollution source may not be known. Most important, the Enforcement Element is the leader in the correction of problems and violations through a variety of enforcement techniques.

The Enforcement Element consists of an Office of Special Services and Investigations, and four regional subgroups. The Office of Special Services and Investigations reports directly to the Assistant Director and acts as his liaison with the Regional Offices. The Office is responsible for the development and implementation of such special projects, services, and task forces as the Assistant Director deems necessary and appropriate. The four regional subgroups each have responsibility over a certain region of the State. The Metropolitan Region includes: Bergen, Essex, Hudson and Union Counties; the Northern Region includes: Hunterdon, Morris, Passaic, Somerset, Sussex and Warren Counties; the Central Region includes: Burlington, Mercer, Middlesex, Monmouth and Ocean Counties; and the Southern Region includes the remainder of the State. The responsibilities of each of the regions are similar and are discussed in the following paragraphs.

In addition to the more traditional enforcement techniques of inspection forms, correspondence, directives, administrative orders, penalties, consent orders, notices of violation, offers of settlement and attorney general referrals, the Enforcement Element has learned through experience and success to rely heavily on the techniques of cooperation, personal contact, telephone calls, meetings, discussions, persuasion, logic, public relations and negotiation to correct the problems found to exist. A large number of enforcement cases undertaken by the Element are settled in this latter fashion without ever having to resort to the more formal techniques. Therefore, it is important to note that there are far more problems solved by the Enforcement Element than are represented by the statistical compilation of formal enforcement actions.

In addition, the Enforcement Element operates the often overlooked program of responding to complaints involving noncompliance and general pollution. The public expects prompt response to their complaints and historically a large percentage of the complaints of pollution or other problems are valid. Whenever appropriate, complaints are referred to county and municipal agencies or authorities; however, Enforcement must still get directly involved in many cases.

Known discharges of wastewater, septage and sludges to surface and ground waters of the State are regulated by permits issued by the Division which contain prescribed limits for various parameters and/or schedules for

upgrading. Permits are issued for both industrial facilities and publicly owned facilities.

Permittees are required to submit discharge monitoring reports (DMR's) and/or monthly operator reports (MOR's) advising the Division of the permittees' self monitoring data relative to permit requirements. Noncompliance reports summarizing the DMR and MOR inputs are reviewed by staff and detailed analysis of the DMR and MOR reports are performed in preparation for compliance monitoring inspections. Since submission of reports by the permittee is of key importance to maintaining current information on permit compliance, it is necessary to operate a program whereby the submission of the required reports is actually accomplished in a timely and complete fashion.

In addition to the review of self monitoring reports, the periodic compliance inspections performed by the Enforcement staff are a means to evaluate the validity of the self monitoring data submitted by the permittee. Grab sampling by the Enforcement staff is performed as necessary during these inspections. An additional check on the validity of self monitoring data is accomplished by means of sampling inspections. In those instances requiring the sampling of toxic or hazardous wastes, or the collection of composite samples, sampling may be conducted at the request of Enforcement by the Emergency Response and Compliance Monitoring Unit with the results being forwarded to Enforcement for appropriate action.

In cases where noncompliance is noted, further investigations are performed by the Enforcement Element and/or by scheduling the collection of samples. Such further investigations may include operations and maintenance inspections which provide detailed investigations of individual facilities as part of the case development for an enforcement action. In cases where noncompliance is confirmed, enforcement is initiated. Depending on the nature of the violation and the position taken by the violator toward correction and compliance, one of the previously discussed enforcement techniques will be used.

The scheme of controls under the permitting system includes the issuance of pretreatment permits for those industries discharging to a publicly-owned treatment works. The Enforcement Program is directly involved in requiring pretreatment activities as necessary. This will be done directly in cases where the state has permitting responsibility and indirectly through treatment facilities where treatment facilities have that responsibility.

In order to assure that permitted facilities are operated properly, the State requires the licensing of operators of waste treatment facilities. The Enforcement Element is active in assuring compliance with the licensing laws as well as the evaluation of the operators in terms of their requests to operate multiple facilities. In some cases, enforcement actions are initiated to bring operators into compliance with required standards.

Other programs for which permits are either issued or are expected to be issued include the Underground Injection Control Program which is limited in scope but which will require monitoring and enforcement by this Element. A program which permits the land application of septage and sludge has already begun to require monitoring and enforcement and is expected to expand to

include interim on-site disposal of sludges and involvement with the Resource Conservation and Recovery Act, usually in coordination with other agencies in the Department.

In addition to wastewater and other discharges, potable water facilities are also controlled by the permit system. The potable water systems fall into two general categories, community water supplies and non-community water supplies.

In both categories, facilities are required to submit self monitoring data on a prescribed schedule. As with the Discharge permits, the submission of these reports is necessary in order to maintain current information on compliance. Therefore, a similar program to that described under wastewater discharges, in conjunction with the Bureau of Safe Drinking Water, will be carried out to assure that reports are submitted in a timely and complete fashion and, as in the discharge programs, data processing capabilities are required to be fully developed.

In the case of non-community water supplies, the number of permits outstanding and projected becomes very large. Strict adherence to the law requires inspections, the submission of self monitoring data, review of that data by the regulatory agency and follow up enforcement in cases of violation. Complaints concerning the potable water programs are investigated by the Potable Water Program. In those instances where noncompliance is determined, the problems are referred to the Enforcement Element for appropriate action. In the future, potable water related enforcement problems will be referred to local health agencies, under the CEHA, where those agencies have indicated a capability and desire for that responsibility.

A major category which accounts for a large portion of Enforcement's staff time is investigation, which frequently results in enforcement actions. Enforcement actions are designed in some cases to have a facility permitted and in other cases they are designed to completely stop the illegal activity. Many of these investigations are the result of complaints received, while others result from the Division's discovery of a contaminated well or a contaminated body of surface water.

The Enforcement Element also is frequently requested to perform special surveys, develop special reports and investigate, evaluate and coordinate activities which relate to the correction of problems on an area-wide or regional scale. Examples of past activities in this category include pollution source investigations on segments of the D & R Canal, and in Logan Township.

The Enforcement Element is involved in the investigation and resultant enforcement activities associated with the Stream Encroachment program. In recognition of the need to prioritize enforcement activities, only high priority stream encroachment cases are being undertaken. Those cases include violations which occur in a stream channel, violations which occur in a floodway only if the violation would cause significant adverse impact, violations which occur in a flood fringe area only if the violation will cause a major adverse impact and when a violation will create a public health hazard. A portion of the enforcement responsibilities related to the

stream encroachment program will be delegated to interested counties. Projects of special concern will still be the responsibility of the State.

Permits are required for the installation of wells. The Enforcement Element is responsible for compliance with the laws governing this program and the permits issued by it. Under the CEHA, the health agencies will insure that when a well is drilled, a State permit was issued, and that the work is performed by a licensed well driller.

A part of the funded activities under the Construction Grants Program is the rehabilitation of existing sewer collection systems. When such an activity is undertaken, the Enforcement Element provides staff on a continuing basis at the site to perform the visual inspections and final testing since this type of project moves quickly and would be held up if the inspection staff were not available on a full time basis.

There are also activities performed by either individuals or groups in the Enforcement Element which do not fall within the scope of well established programs. One such activity is the supervision of the task force to control illegal septage handling and disposal. Other items include representation on the Licensing Board, the Executive enforcement Committee and similar boards, committees and groups.

3. MONITORING AND PLANNING ELEMENT

The Monitoring and Planning Element develops plans, implementation programs and standards for the protection and improvement of water quality. The Element seeks to monitor, report and analyze the quality of ambient water in New Jersey and to ensure the integrity and defensibility of such data used for all regulatory programs. The Element also monitors and classifies shellfish growing areas in coastal bays, estuaries, and waters of the Atlantic Ocean within the State's jurisdictional three mile limit. The following subsections discuss the responsibilities of each of the Element's bureaus: Planning and Standards, Systems Analysis and Wasteload Allocation, Monitoring and Data Management, and Shellfish Control.

i. Bureau of Planning and Standards

The Bureau is the principal planning, standards, interagency operations, and program development unit for the Division. It maintains a variety of interrelated programs, responsibilities and functions, and is closely involved with the other elements and Divisions in the Department. The Bureau carries out a range of projects involving identification and assessment, development of alternative solutions, regulatory review and modification, institutional analysis, and implementation strategies. The Bureau's responsibilities are divided among long term planning projects, routine activities, and projects designed to meet specific immediate needs and problems.

The Bureau operates under the authority of the N.J. Water Quality Planning Act, the N.J. Water Pollution Control Act, the federal Clean Water Act (Sections 205, 208, 303, 305, and 401), and the County Environmental Health Act.

Based on these authorities, the Bureau's programs are divided into four major areas: Statewide/Areawide Water Quality Management (WQM) Planning, Nonpoint Source Management and Control, Water Quality Inventory Report and Rating System, and Permit Coordination/Regulatory Program Development.

Statewide/Areawide Water Quality Management Planning: The Bureau serves as the lead agency for the Statewide WQM Process and the Statewide WQM Plan. In addition, the Bureau is responsible for amending, revising, updating and certifying the five non-designated areawide WQM Plans (Upper and Lower Delaware, Northeast, Monmouth, and Upper Raritan). In accordance with the N.J. Water Quality Planning Act, the Bureau provides "Consistency Determinations" (CD's) for the Department's permits. These CD's ensure that projects are consistent with the provisions of the Statewide and areawide WQM Plans. The applicable permits are listed in the Water Quality Management Planning and Implementation Process Rules (N.J.A.C. 7:15-1 et seq.).

In an effort to provide for comprehensive wastewater facilities planning, the Bureau is also integrating approved 201 Wastewater Facilities Plans and the proposed Wastewater Management Plans into the WQM Plans. The Bureau is also actively pursuing the delegation of certain planning and implementation responsibilities to various designated planning agencies and other county governments, in keeping with the Department's objective of delegation to county and local governments.

Nonpoint Source Management and Control: The Bureau is developing a Statewide Nonpoint Source Management Program Plan which will: identify nonpoint source problems, review and assess current management programs, and recommend new or improved management options. This Plan will be incorporated into the Statewide WQM Plan and will provide direction for Statewide implementation programs.

The Bureau is also conducting the Navesink River Nonpoint Source Project which is an area-specific study designed to identify nonpoint source bacterial contamination in the Navesink River, and to develop management practices to control these sources. The Bureau is working closely with federal, state and local governments, and agricultural and health agencies. The ultimate objective of this project is to improve water quality in the Navesink River in order to open the river for shellfishing.

Water Quality Inventory and Rating System: On a biennial basis, the Bureau prepares a Statewide Water Quality Inventory Report. This report, prepared pursuant to Section 305(b) of the Clean Water Act (CWA), is an assessment of the quality of the State's streams and rivers. The report describes improvements or declines in water quality, progress towards achievement of the fishable and swimmable goals of the CWA, and recommendations for mechanisms to achieve improvements in water quality. In addition, the report contains a waterbody rating system. This system is utilized in establishing the Division's program priorities, and for federal and state funding priorities.

Permit Coordination/Regulatory Program Development: The Bureau conducts both the routine administrative coordination of the permit review process, and the coordination of technical water resource reviews on various

Department permits. The permit review responsibility within the Division ensures that all permit applications and projects receive a thorough review from the appropriate Division personnel in order to identify and mitigate impacts on water resources.

In addition, the Bureau provides technical expertise in the development of regulatory programs for the Department and the Division including: legislation, regulations, plans, and implementation mechanisms. Examples of such programs include: the proposed Freshwater Wetlands Act, the Water Quality Management Planning and Implementation Process Rules, the Flood Hazard Area Regulations, the Stormwater Management Regulations, the Surface Water Quality Standards, and the Statewide Solid Waste Management Plan.

ii. Bureau of Systems Analysis and Wasteload Allocation

The functions that this Bureau provides are of a technical nature in support of the Division's activities. In carrying out its responsibilities, the Bureau coordinates with, and provides information in support of such Division elements as the Construction Grants Administration, Water Quality Management, Enforcement, and Water Supply.

Among the most essential of the Bureau's activities is the periodic updating and revision of the State Water Quality Standards. That document is basic to several of the Division's implementation functions, and is revised by the Bureau in light of site specific studies, scientific literature, State policies, and other factors.

The Bureau serves as a technical resource for the Water Quality Management Element by developing wasteload allocations at their request. Water quality based effluent limitations, including numeric limits and bioassay requirements, are developed for municipal and industrial NJPDES permits. Related to its wasteload allocation function, the Bureau conducts technical analyses and prepares reports to support decisions associated with treatment requirements higher than technology-based standards. The Bureau also conducts policy analyses related to technical water resource issues and recommends cost-effective approaches for dealing with those issues.

Applications for water quality certifications, permit renewals, and other projects are reviewed at the request of other Bureaus to ensure compliance of those projects with the Water Quality Standards. The Bureau also reviews projects proposed through the State Water Supply Master Plan, in terms of possible water quality impacts.

The Bureau examines and assesses point source and nonpoint source management techniques using scientifically defensible procedures. As appropriate, possible control measures are recommended for dealing with these pollutant sources in order to protect significant sources of water such as potable water sources or environmentally sensitive areas.

Based on the needs of the permit programs, Construction Grants Administration, and Enforcement Program, priorities for intensive surveys and biological monitoring are developed. Facilities Planning (201) decisions are occasionally reviewed based on new State needs in order to ensure effective use of existing resources.

In addition to these functions, the Bureau also conducts other hydrological and water quality modeling studies, assists and serves as expert witness at enforcement related court cases, and provides other technical guidance as needed by the Division.

iii. Bureau of Monitoring and Data Management

This Bureau is charged with the critical support functions associated with developing, maintaining, utilizing (in an assessment fashion) the Department's water quality data base. Although this function is one of support for all Department program areas, its outputs are critical to any decision-making process involving planning, permitting, enforcement, or regulatory programs. Additionally, several functions and activities are mandatory for receipt of either grant (106, 314, and SPMP) or fees (laboratory certification, NJPDES) funding resources.

The following narrative discusses the responsibilities of each of the major units of the Bureau. These units are: Biological Services, Quality Assurance, Data Management, Data Acquisition and Analysis, and Emergency Response.

Biological Services: The Biological Services Unit performs studies of a limnological, marine biological, or toxicological nature assessing the biological quality of surface waters. It functions primarily as a laboratory support unit for the other offices, providing valuable biological information bearing on regulatory decisions.

The program includes baseline surveys of the macro- and microscopic flora and fauna, and bioassays measuring toxicity such as from industrial discharges. Other activities involve monitoring of potentially harmful conditions such as "red tides" along the coast, and evaluating the biological suitability of proposed projects. Specific procedures deal with analysis and species identification of benthic, periphytic, planktonic and fish populations. Bioassays involve tests of acute toxicity to fish or macro-invertebrates in fixed or mobile, flow-through laboratory facilities.

Results are evaluated with regard to water quality, using statistical indices and relative tolerance of individual species. Additional facilities will allow chronic fish toxicity studies, primary productivity assessments and phycotoxicity tests.

Responsibilities of the Biological Services Unit include:

- Development and implementation of Division bioassay compliance monitoring program based on priorities established by EPA, Systems Analysis and Wasteload Allocation, Water Quality Management, and Enforcement programs.
- Provide biological input, evaluating and expertise for Division and Department planning, monitoring, and enforcement program activities.
- Provide biological laboratory analysis capability for ambient, compliance, and special purpose monitoring programs.
- Bioassay compliance data review and facility evaluation and inspection for laboratory certification.

Data Acquisition and Analysis: The primary purpose of the Data Acquisition Unit is to plan and conduct ambient biological and chemical surveys and provide data analysis and environmental assessment as a support function to other Department and Division units. To this end, the staff is skilled in all phases of water column, sediment and biological sampling techniques and is experienced in the interpretation of chemical and biological data for environmental assessments.

Program responsibilities have been divided into two broad program areas:

1. Intensive and special survey
2. Routine ambient monitoring networks

Special or intensive surveys are designed and conducted to satisfy the data requirements for establishing wastewater discharge treatment limitations, toxic substances assessments, lake trophic state determinations, nonpoint pollution assessments, as well as enforcement actions.

The unit operates the Statewide water quality monitoring networks in conjunction with the EPA, USGS, ISC and DRBC. Approximately 200 stream, bay and estuary stations are sampled 6-9 times per year. Sampling includes water column, sediment, and fish tissue analysis. The data comprises the major source of background ambient water quality data in the Department and is utilized by many agencies within and outside the Department. Both the 305(b) Statewide Water Quality Inventory and environmental assessments associated with sewage treatment plant construction projects rely on this data for decision-making. Locations near surface water supply raw water intakes are monitored as part of this program and an ambient groundwater monitoring program was developed and initiated in FY 1983.

The unit is also responsible for the Department's Lakes Management Program. This includes the State Aquatic Weed Control Program, coordinated jointly with the N.J. Division of Fish, Game & Wildlife. Also, the program is responsible for administering the State Aid to Municipalities account and EPA grants for lakes diagnostic and restoration activities. These programs allow the local governing bodies to initiate lakes management programs without severe financial burden.

Emergency Response Compliance Monitoring (ERCOM): This unit was established in October of 1980 with existing personnel but without any operating budget of its own. Its formation came about as a result of two major factors. Firstly, the lengthy debriefing meetings following the Chemical Control fire in Elizabeth in April, 1980 showed a dire need for a well trained specifically identified cadre of Division personnel for emergency sampling activities. Consequently, a significant effort was put forth to establish such a group of which ERCOM was a part. Secondly, the Division 24-hour compliance monitoring program had been relegated to an extremely low priority status seriously jeopardizing continued federal funding in this area. It was anticipated that the formation of the ERCOM Unit would revitalize this program.

In addition to its 24-hour compliance monitoring duties, the unit now conducts and/or designs special samplings and monitoring programs for

health, enforcement or scientific data gathering agencies. It is also the Department's designated emergency sampling team for water sampling in the event of a nuclear emergency. The ERCOM Unit has also become the primary contact in the Division for all calls from the Department's 24-hour hot line, relaying messages and coordinating responses on a 24-hour per day, seven day per week schedule.

iv. Bureau of Shellfish Control

Shellfish (oysters, clams and mussels) if contaminated present a health hazard to the consumer because: (1) of the shellfish's ability to filter and concentrate pathogenic microorganisms and toxic substances present in the environment, (2) the environment in which shellfish grow is almost universally subject to some degree of domestic, industrial or animal pollution, and/or (3) shellfish are packed whole and alive and are often consumed either raw or only partially cooked. In order to provide adequate consumer protection and minimize the health hazards, sanitary controls in the shellfish industry must begin at the growing area level and continue through all aspects of harvesting, processing, packaging, storage and distribution.

The primary hazard to the consumer presented by shellfish relates to the quality of the water in which they are grown. Shellfish pump vast quantities of water through their bodies as an essential part of their life process. In this process they accumulate and concentrate microorganisms, chemicals and heavy metals from their marine/estuarine environment. If they are exposed to water polluted with human and animal wastes, they may become agents of gastroenteric diseases such as infectious hepatitis, typhoid and cholera.

Since people frequently eat raw or partially cooked shellfish, a health hazard may be present if shellfish are harvested from contaminated waters. Even in cases where shellfish are fully cooked, the presence of heat stable marine biotoxins and other chemicals can result in shellfish poisoning.

Such being the case, and with New Jersey being one of the largest producers of shellfish in the country, the Bureau of Shellfish Control has the responsibility to classify all actual or potential shellfish growing areas as to their suitability for shellfish harvesting on the basis of sanitary quality. In addition, the Bureau is responsible for the conducting of special resource recovery programs and the issuance of the associated permits. Said special permits provide the guidelines or rules which govern the harvesting from Condemned and Special Restricted areas.

4. WATER QUALITY MANAGEMENT

The Water Quality Management Element is primarily regulatory in function, and includes permit-issuance activities. The element includes five units: Bureau of Permits Administration, Bureau of Industrial Waste Management, Bureau of Municipal Waste Management, Bureau of Ground Water Discharge Permits, and Office of Technical Assistance. These are discussed below.

i. Bureau of Permits Administration

The primary function of this Bureau is to plan, organize, direct, and manage permit and data processing, and to assess, substantiate and collect permit fees to fully support the permit program. The Bureau develops permit fees and manages all of the monitoring data submitted by the permittees and maintains State and Federal data management systems.

The Bureau establishes, maintains and manages the Element's data bases related to: NJPDES permit development, NJPDES ground water permitting, sludge quality assurance reports, wastewater management information, correspondence compliance, and NJPDES fee development. The Bureau also provides services to various elements within the Division to satisfy requirements related to program development, maintenance and evaluation.

ii. Bureau of Industrial Waste Management

The functions of this Bureau can be divided into industrial permits, pretreatment, and best management practices. Descriptions of these responsibilities follow.

Industrial Permits: The Industrial Permits Section was delegated the responsibility by EPA effective April 14, 1982 to prepare draft and final industrial NJPDES permits for Discharge to Surface Water (DSW). Prior to that date, industrial discharge permits were issued by EPA Region II and included State certification conditions prepared by this Section to set forth water quality based effluent requirements and State effluent regulations.

The issuance of NJPDES DSW permits is required by the New Jersey Water Control Act (N.J.S.A. 58:10A-1 et seq.). The DSW permit effluent limits are based on EPA technology-based guidelines, Interstate or State Regulations, and State Surface Water Quality Standards.

These permits also include specific discharge monitoring requirements, and, where applicable, interim limits and a compliance schedule to achieve the final effluent limits.

Preparation of a Draft DSW Permit requires evaluation of the permit analysis of existing file information, a field inspection of the facility, determination of applicable EPA technology-quality-based limitations and Solid Waste disposal requirements, determination of applicable requirements of WQM and 201 plans, and compilation of appropriate permit basis and background information for public review. Interaction in this regard is required with EPA, the Bureau of Systems Analysis and Wasteload Allocation, the Bureau of Planning and Standards, the Enforcement Element, the Construction Grants Administration, the Division of Waste Management, the Delaware River Basin Commission, the Interstate Sanitation Commission and the Hackensack Meadowlands Development Commission. For new facility discharges, the effluent limitations are issued as Discharge Allocation Certificates (DAC's) which require input from this Element's Environmental Impact Statements submitted as part of the DAC applications.

Industrial Pretreatment: In the past only those industries discharging directly to surface waters, and owning and operating a treatment works, were required to meet national effluent standards. In many cases, a competitor of such an industry could discharge into a municipally-owned sewer system, with no restrictions on the type of discharge allowed (other than the prohibited discharges specified by 40 CFR 403.5 and those restrictions placed by sewerage authorities to protect against damage (e.g., explosives) or toxicity that would affect sewage treatment plant operation). The lack of effective, uniform requirements for indirect discharges has become recognized as a major loophole in the national pollution control legislation. Toxic pollutants entering municipal systems may pass through the system unchanged, or may accumulate in the sludge, precluding certain beneficial uses thereof. In addition, toxic industrial wastes generally inhibit the efficiency of treatment and require the oversizing of affected facilities to achieve the necessary degree of treatment. The objective of industrial pretreatment is to eliminate the discharge of toxic pollutants in toxic amounts into surface and ground waters via municipal treatment systems and to prevent the interference by such pollutants with the efficient operation of such treatment plants.

The State pretreatment program requires that any significant industrial user (SIU) of a publicly-owned treatment works (POTW), as defined in Section 1.10 of the NJPDES regulations (N.J.A.C. 7:14A-1 et seq.), apply for a NJPDES permit in accordance with a schedule outlined in the regulations. The issuance of pretreatment permits to SIU's and direct discharge permits to POTW's under the NJPDES system will ensure uniform regulation and control over discharges to, through, and from municipal wastewater systems throughout the State.

The following is a listing of the major responsibilities of the program:

- Award Section 201 Federal Construction Grants to the designated publicly-owned treatment works for development of pretreatment programs.
- Review and approve the designated POTW's Pretreatment Programs.
- Develop and implement the pretreatment program for the nondesignated portions of the State.
- Issue NJPDES/SIU Permits to indirect industrial discharges.
- Issue guidance documents or provide verbal or written instructions to aid applicants for either grants or permits.
- Provide assistance in administering the Statewide Pretreatment Management Program.

Best Management Practices: The Best Management Practices (BMP) Section was established to review Best Management Practices Plans as required by the Federal Clean Water Act under Section 304.

"BMPs mean schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the

pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage." (Definition from NJPDES Regs 7:14A-1.1 et seq.)

The purpose of the BMP program is to control industrial activities which contribute toxic pollutants to the waters of the State, specifically of the non-process related type (runoff). Permittees are required by regulatory agencies to file BMPs on a case-by-case basis where the agencies determine that it is necessary to carry out provisions of the Act. Permittees may also be required to file BMPs when required by an EPA promulgated effluent guideline.

The BMP Section is responsible for review of Treatment Works applications in accordance with Subchapter 12 of the NJPDES regulations. Responsibilities include review of reports, plans and specifications for the planning, design, construction and operation of industrial treatment works; preparation of Examining Engineer's Reports, and issuance of Treatment Works Approvals (Permits) for Stage I (Preliminary Review), Stage II (Construction), and Stage III (Operation).

The BMP Section is responsible for preparing the industrial works operator's licensing examinations and corrects the exams. This program is in compliance with the "Licensing of Superintendents or Operators of Public Water Treatment Plants, Public Sewage Treatment Plants and Public Water Treatment Plants, Public Sewage Treatment Plants and Public Water Supply Systems," N.J.S.A. 58:11-18.10 et seq.; 13:1D-1 et seq., and 13:1B-3. The examinations are prepared specifically for the industrial facility the candidate operates.

The BMP Section reviews applications by industries for financing of industrial treatment works under the Economic Development Authority (EDA) program, pursuant to the Industrial Pollution Control Financing Law, N.J.S.A. 40:37C-11, and the Economic Development Authority Act, N.J.A.C. 34:1B-3h. The Commissioner of Environmental Protection is required by law to certify that the facilities where financing is requested are indeed pollution control facilities. The BMP section technically reviews the applications and recommends to the Commissioner's office whether a certification is justified.

In addition to the above responsibilities, the section conducts Discharge Prevention Countermeasure Control Plan/Discharge Cleanup Removal reviews, and reviews requests for delisting wastewater treatment units from the Resource Conservation and Recovery Act program.

iii. Bureau of Municipal Waste Management

The Bureau of Municipal Waste Management within the Water Quality Management Element has Statewide responsibility for the issuance of all municipal waste treatment facility permits. Within the Bureau, there are two major sections; the Municipal Discharge Permit Section and the Technical Review Section.

The Technical Review Section performs the technical and engineering reviews of all sewerage projects which are not funded under the 201 Federal/State programs. These projects include sewage collection systems, pump stations, force mains and treatment plants. The review process takes into account compliance with local requirements, WQM plans and 201 plans, environmentally sound projects as well as consistency with all public health codes. The Section works under the "90 day" program and is supported by a review fee under P.L. 1975, Chapter 232, N.J.S.A. 13:1D-29 et seq. The Section maintains a tracking computer system of sewage capacities for all municipal or private sewage treatment facilities. This responsibility is dictated under the Sewer Ban Regulations. Sewer Bans are prepared as needed as well as lifting or modifying Sewer Bans where appropriate. Staff provides testimony before the Administrative Law Judge and State/Federal Courts.

Municipal Discharge Permit Section has the responsibility to prepare draft and final NJPDES permits. This function was transferred from EPA under an agreement between EPA and the Department. The issuance of these permits is required by the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Federal Clean Water Act (33 U.S.C. 1251 et seq.). The conditions imposed within the permits are technology based and/or water quality based effluent limits. These limits are enforceable. Based on circumstances, interim effluent limits may be imposed as well as "Schedules of Compliance" in order to meet certain quality requirements. In addition, the section is responsible for developing and issuing Discharge Allocation Certificates, which specify permit requirements to be applicable at a future time.

iv. Bureau of Ground Water Discharge Permits

The responsibility of the Bureau of Ground Water Discharge Permits is twofold. Primarily, the function is to execute the statutory responsibility of the Department to regulate, protect and enhance the ground water resources of the State. Secondly, the function is to provide high quality technical expertise in the fields of geology, soils and ground water to State, local and private entities which will assist in the maintenance of the ground waters of the State for present and future citizens.

In addition, this Bureau, through its permitting activities endeavors to reduce, and eventually eliminate, pollutants being generated by point and nonpoint sources which would contravene State ground water standards and/or potable water standards, to ensure an adequate supply of clean water for appropriate domestic, agricultural, commercial, and industrial uses throughout the State. This will be achieved by the development and implementation of permit programs which will control the discharge of pollutants to the ground water. The Bureau has primary responsibility within the Department of Environmental Protection for all permit related decisions relative to ground water aspects of the NJPDES regulations. This includes any discharger to the ground water (lagoons, ponds, infiltration - percolation, industrial wastes to septic systems, landfills, overland flow, application of septage to the land, hazardous wastes disposal (under the Resources Conservation and Recovery Act) and Underground Injection Control.)

The following are activities being conducted by the Bureau:

1. NJPDES Ground Water Permits: This activity includes all the work necessarily involved in permit issuance such as pre-application conferences, application reviews, preparation of fact sheets, preparation of statements of basis, application tracking, permit development, input for public notices, public hearings, review of public and agency comments, permit coordination, and actual permit issuance for landfills, infiltration/percolation, injection wells, spray irrigation, overland flow, surface impoundments, and land application of residuals for hazardous and nonhazardous wastes.
2. Industrial Waste Management Facilities Reviews: All owners or operators of Industrial Waste Management Facilities must comply with Subchapter 4 of the NJPDES Regulations. This compliance is required for the treatment, storage, or disposal of hazardous waste at facilities requiring a NJPDES permit. This activity includes the review of applications, plans, and specifications, including closure plans. This activity also includes developing ground water monitoring programs for inclusion in the state hazardous waste permits for surface impoundments and land application of waste.
3. Hazardous Waste Facilities Review: All owners of hazardous facilities must comply with Subchapter 6 of the NJPDES Regulations, the New Jersey Hazardous Waste Regulations (N.J.A.C. 7:26-1 et seq.) and the Federal (RCRA) Regulations 40 CFR 260-267 and 40 CFR 122-124). Technical reviews for compliance with state and federal hazardous waste standards regarding ground water quality are performed for all hazardous waste facilities with discharges to ground water. Review conclusions and recommendations are submitted to the Division of Waste Management or EPA (whichever has jurisdiction over the project) for inclusion into state and federal hazardous waste permits.
4. Sludge and Septage Management Program: The Sludge Management and Septage Management Programs are managed by the Program and Regulatory Development Section. A Statewide Sludge Management plan is being developed under the authority and mandate of the Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.). This Section provides a service to sludge generators and solid waste management districts by developing programs which will form the basis and standards for the evaluation of specific sludge disposal planning alternatives. Staff members also serve as a resource to the public to provide information on existing disposal options. Emergency disposal assistance is given to generators in the event of incinerator shutdown, landfill closure or other interruption of routine disposal modes.
5. Subsurface Sewage Disposal: This section reviews and either approves or denies applications for all major subdivisions utilizing septic systems for domestic sewage disposal as well as community systems and systems with industrial input. In addition, at the request of local authorities, this section will provide a courtesy review of septic system applications, either individual

or subdivision, in all parts of the state. The last five years have seen a tremendous advancement in new alternate design technologies for subsurface sewage disposal systems in areas where standard septic systems are not feasible. This section reviews and permits alternate designs and provides individuals and affected industries with guidelines to implement new technologies. This section assumes a primary input role in any administrative hearings and/or court proceedings.

6. Chapter 199 Regulations Revision: The Bureau is spearheading an effort to revise and expand the scope of these regulations which outline the construction and design standards for individual subsurface disposal systems.

v. Office of Technical Assistance

The Office of Technical Assistance is responsible for providing assistance and training to optimize the operations of waste treatment facilities so that they will perform as designed in order to meet State water quality standards. The staff utilize latest state-of-the-art techniques and data information and support systems to diagnose, analyze and evaluate wastewater treatment systems to determine the least costly approaches to improve and optimize the treatment systems, effluent quality, and the quality of the receiving streams.

5. WATER SUPPLY AND WATERSHED MANAGEMENT ELEMENT

This element is composed of five organizational units: the Bureau of Water Supply, the Bureau of Flood Plain Management, the Bureau of Safe Drinking Water, the Bureau of Water Allocation, and the Office of Water Policy. While those units have many diverse responsibilities, some of their water functions relate to quality protection or to dependence on satisfactory water quality. A description of each of the units follows:

i. Bureau of Water Supply

The Bureau's activities include the following: Planning and Analysis, Project Development, Stormwater Management, and Water Supply Rehabilitation and Financial Assistance.

Planning and Analysis: The purpose of this program is the collection and analysis of demographic, hydrologic, economic, environmental and other data for use in the assessment of water supply needs and the formulation of recommendations for timely satisfaction of those needs in an environmentally acceptable manner. These needs include the development, maintenance, conservation, and protection of the State's water supplies. One of the most important analyses being conducted is the continuous monitoring of the status of the major reservoir systems in the State. The purpose of this program is to ensure a quick response to drought conditions.

This program also coordinates planning with design and construction of capital projects of the New Jersey Water Supply Authority. In addition, the

acquisition, leasing and sale of lands connected with reservoirs are coordinated with the Green Acres program.

The Planning and Analysis Program will also be responsible for computer simulation of water supply facilities. An important study currently underway is the Safe Yield and Deficit Analysis for the northeastern part of the State. From this we will be able to make rational decisions as to specific water supply system needs in that critical region and improved project selection and timing decisions.

Project Development: The purpose of these studies is to determine the technical, economic and environmental feasibility of water supply projects. With the passage of the 1981 Water Supply Bond Act, as soon as appropriations are made available, the Bureau of Water Supply Planning can begin to carry out the action plan for specific water supply projects listed in the Statewide Water Supply Master Plan 1981-85 Action Plan for early implementation. The feasibility studies being conducted by the Bureau include the analysis of specific regional water supply problems, a statewide interconnection study and local feasibility studies of contaminated well fields.

According to the procedure outlined in the Water Supply Master Plan, a feasibility study must be completed for each project. Funding for these studies will be subject to the approval of the Legislature and the Governor. If approved and funds are appropriated from the 1981 Water Supply Bond Act, the detailed project feasibility report can be developed. The studies will involve the review of alternatives, environmental and sociological impacts, economic considerations as well as other factors.

Storm Water Management: The Storm Water Management Program is designed to encourage counties and municipalities to develop storm water management plans and adopt ordinances to implement the plans. The program shall also serve as a component of the Watershed and Aquifer Protection Program recommended by the Water Supply Master Plan.

The Storm Water Management Act requires the development and promulgation of state regulations. Those regulations define the requirements and minimum standards that will insure that county and municipal plans and ordinances comply with the provisions of the Act. Those regulations also define the administrative procedures to be employed by the State, counties and municipalities in complying with the intent of the Act.

The Storm Water Management Program will be implemented through a cooperative effort with county planning agencies. Counties will be encouraged to enlist their municipalities in a county-wide planning effort aimed at developing a comprehensive storm water management program. The programs will culminate in a storm water management plan implemented through ordinance. The plans and ordinances shall contain the minimum control standards outlined in the State Storm Water Management Regulations. In this manner, State supplied funds will be utilized in an optimum fashion as storm water management planning is generally most cost effective when it proceeds on a regional basis. The use of existing local governmental agencies to implement this program is mandated by the enabling legislation.

Water Supply Rehabilitation and Financial Assistance Program: The Bureau is responsible for all water supply financial assistance programs pursuant to the Water Supply Bond Act of 1981 and as recommended by the New Jersey Statewide Water Supply Master Plan. These programs currently include the Water Supply Bond Loan Rehabilitation, Interconnections and Contamination Programs. All aspects of these programs from regulatory/program development to complete administration and oversight of funded construction projects are assigned to the Bureau.

The Bureau is also responsible for conducting and completing an ongoing Water Supply Infrastructure Needs Survey for all public and privately owned water supply systems in the State.

ii. Bureau of Flood Plain Management

The Bureau of Flood Plain Management is responsible for administering the following programs. In addition to these programs, the Bureau also responds appropriately to dam failures and other water-related emergencies.

1. Stream Encroachment Permits and Violations Program
2. Dam Safety Program
3. Dam Grants Program
4. Flood Control Grants Program
5. Flood Control Planning Program
6. Flood Plain Delineation Program
7. National Flood Insurance Program
8. Stormwater Management Program

A brief description of each of these programs is provided below.

1. **Stream Encroachment Permit and Violation Program:** This program is administered pursuant to the provisions of the Flood Hazard Area Control Act, and regulates stream encroachments within the 100 year flood plain of all nondelineated streams and within the flood hazard area of delineated streams. The program objective is to minimize loss of life and damage to public and private property that may be caused by improper land use. The program also includes investigation of stream encroachment violations and coordination of that activity with the Enforcement Element in order to resolve unauthorized activities.

The permit program is administered under 90-day permit rules. Comprehensive regulations for this program were adopted in FY-1984 and a Technical Manual has also been published. A series of Informational seminars concerning the new rules and the manual were held in the fall of 1984 in locations throughout the State. These measures will facilitate the preparation and processing of stream encroachment applications. An important change made in the rules is the provision for increased delegation of the permitting and enforcement authority to the local governments. An additional change in the rules is the provision that calls for fact finding meetings in the Division of Water Resources when differences of opinion arise concerning stream encroachment applications and for Projects of Special Concern. This allows for the possibility of reconciling conflicting viewpoints without the necessity of a judicial proceeding. This procedure was established on a trial basis for appeals and has been very successful.

2. Dam Safety Program: Administered under the provisions of the Safe Dam Act, this program is aimed at regulating and monitoring the construction, repair and inspection of proposed and existing dam structures. The staff reviews and issues permits for the construction of new dams and for the repair of existing dams. The review includes, but is not limited to, hydrologic, hydraulic, stability and seepage analyses. Inspections are also made to investigate the safety of existing dams, as well as those under construction. New rules for this program were adopted in May 1985.

3. Dam Grants Program: This program provides 50 percent matching grants to rehabilitate publicly-owned high hazard dams that have been found deficient. A total of \$15 million for this program was provided by the Natural Resource Bond Act of 1980.

The Bureau has reviewed 30 dam restoration grant applications and conditional grant awards for 13 of these projects have been made. The project applicants have now initiated the preparation of design reports, construction plans, specifications and cost estimates. The Bureau will process grant awards after acceptance of this material and will monitor the construction of these projects.

4. Flood Control Grants Program: This program provides 50 percent matching grants to local governments pursuant to the provisions of the Emergency Flood Control Bond Act of 1978. To date, a total of 26 projects have been approved, committing approximately \$16 million in flood control grants. An additional four projects requesting a total of \$1.7 million have been recommended for approval and three grant applications requesting a total of \$1.7 million are under active review. Therefore, of the \$22 million grant funds provided by the Emergency Flood Control Bond Act, a minimum of \$2.6 million will remain available in FY-86. The staff will review the design, construction plans, specifications, and cost estimates for grant applications submitted and will rank eligible projects on a priority list. The top ranking projects will be awarded state grants awards will be prepared.

The staff will also monitor the construction of all projects funded under this program. As of this date, the construction of fifteen flood control projects has been completed and four projects presently under construction will extend into FY-1986. Since the construction of seven additional projects is expected to commence soon, a total of eleven projects will be monitored for construction during the year. Relevant requests for grant payments will also be processed.

5. Flood Control Planning Program: The 1978 Bond Act provided \$3 million for comprehensive flood control planning including the preparation of a Statewide Flood Control Master Plan. A final draft of the Plan has recently been completed by the consulting firm of Anderson-Nichols and is presently being published. The draft plan will be distributed to local governments and other interested parties and public meetings will be held in FY-1986. The comments and input received will be appropriately incorporated into the Plan before its finalization by the Department. The Plan recommends a long term, State supported flood control grants program through action by the legislature to ensure multi-year funding for this purpose. It also recommends that the State expand its role in flood control planning, perform

the local sponsorship role for major federally funded projects to expedite their construction and facilitate the implementation of the Storm Water Management Act. The Bureau will undertake further detailed planning activities in accordance with the recommendations of the Master Plan. Coordination of Federal Flood Control studies being conducted by the U.S. Army Corps of Engineers and Soil Conservation will also be continued by the Bureau.

6. Flood Plain Delineation Program: This program is responsible for delineating flood hazard areas in the State. Public hearings are conducted to formally adopt these delineated flood hazard areas. The Bureau is presently under contract with several engineering consultants who are preparing flood plain delineation maps for adoption by the State. In addition, the staff also performs other flood plain delineation functions, including update and/or revision of existing studies, preparation of State maps on the basis of existing studies (by other agencies), review of studies conducted by other agencies, amendment of maps, the provision of assistance related to stream encroachment projects, and indexing and listing of completed delineations.

7. National Flood Insurance Program: The Bureau will continue to distribute flood insurance studies, flood insurance rate maps, and program publications to public and private agencies and individuals. Interpretation of FEMA maps and studies by certifying insurance zones by letter and computing approximate 100-year flood stages will be undertaken. Community assistance visits and community assistance contacts will continue to explain NFIP regulations and policies and monitor or investigate local enforcement of development and construction standards.

8. Storm Water Management Program: This program provides assistance to municipal and county agencies in the development of local storm water management (SWM) programs. A model ordinance for municipalities has been developed and has been forwarded to all communities. Funding for the program was recently appropriated, with \$1 million allocated for the development of municipal storm water plans and another \$1 million allocated for county programs. The counties have been notified of the availability of county grants and eight counties have applied.

Municipalities will be notified of the municipal grant program shortly. The counties and municipalities will be ranked according to their need for SWM planning, and grants will be awarded based on this ranking.

Water Supply Rehabilitation and Financial Assistance Program: The Bureau is responsible for all water supply financial assistance programs pursuant to the Water Supply Bond Act of 1981 and as recommended by the New Jersey Statewide Water Supply Master Plan. These programs currently include the Water Supply Bond Loan Rehabilitation, Interconnections and Contamination Programs. All aspects of these programs from regulatory/program development to complete administration and oversight of funded construction projects are assigned to the Bureau.

The Bureau is also responsible for conducting and completing an ongoing Water Supply Infrastructure Needs Survey for all public and privately owned water supply systems in the State.

iii. Bureau of Safe Drinking Water

The purpose of this Bureau is to institute the overall management of work programs and activities to insure a desirable and effective comprehensive Statewide drinking water program. Its basic objective is to ensure safe drinking water and adequate water supply facilities for the citizens of New Jersey. The Bureau seeks to ensure that water of the highest quality is delivered and that adequate prime source, pumpage, storage transmission and distribution facilities are provided so as to maintain sufficient volume and pressure to all consumers at all times. Public health concerns are the Bureau's highest priority.

In order to safeguard nationwide public health, Congress enacted the Safe Drinking Water Act signed into law on December 16, 1974 (P.L. 93-523). This Act gave the EPA the responsibility for setting minimum national drinking water regulations for all public water systems throughout the nation. A public water system is defined as one which has at least 15 service connections or which regularly serves at least 25 people. The regulations define two kinds of public water supply. A public community water supply is one which serves at least fifteen connections used by year round residents. There are approximately 620 "community" supplies currently under Bureau regulation. A public non community water supply is defined as one which provides water service to at least 25 people under conditions where, in general, they are non residents. This type of supply includes motels, hotels, restaurants, schools, shopping centers and others where the water is not the consumers' principal source of supply. The number of these supplies in New Jersey is estimated at over 8,000. In addition to public supplies there are an estimated 300,000 to 400,000 non-public supplies owned and used by individuals in areas where no public supply exists.

Priority is placed on the regulation of public community water systems. These systems serve approximately 85% of New Jersey's population and, therefore, have the greatest impact on public health. Regulation of the numerous public non community water systems presents difficulties, because these have not previously been under the direct jurisdiction of the State and their numbers and locations are unknown. Regulation of non-public supplies is through close working relationships with the local and regional health agencies.

Major Bureau workload includes coordination and technical assistance to the enforcement element in the inspection of public water supply facilities; review of appropriate plans and specifications; response to consumer complaints, contamination episodes, and water supply emergencies; promotion of central public water systems to serve areas currently reliant upon shallow individual homeowner type wells; and coordination of Department response to water contamination incidents.

The staff provides technical direction and assistance to the Enforcement Element in the regular inspection of public water supplies. These are on-site reviews of the water source, treatment facilities and distribution network, and the operation and maintenance thereof.

When deficiencies are found, the purveyor will be given formal notice through a copy of the inspection report and if the formal notice and

follow-up correspondence does not effectuate change, then an order will be issued. These activities will be coordinated between the staffs of the Bureau and the Enforcement Element.

With guidance from the Bureau, plan review for non-community water systems will be carried out by the appropriate local Boards of Health in accordance with the provisions of N.J.A.C. 7:10-12, "Standards for the Construction of Non-Public and Public Non-Community Water Systems."

The Bureau will conduct a permitting program for physical connections between approved public water supply systems and unapproved supplies. Regulations prescribe minimum requirements for the design, construction and installation of backflow-prevention devices installed in accordance with the statute and conditions which must be met for the issuance of original and annual renewal permits.

The Safe Drinking Water Act permits variances and exemptions to be issued to water purveyors provided public health is not endangered. The purpose is to avoid placing undue burdens upon systems that would have great difficulty in meeting the standards, and they are intended to extend the time period needed for a system to conform. Necessary variances and exemptions will be written with schedules that specify time frames within which the purveyor must comply with specific requirements.

The majority of the community systems currently regulated by the Bureau comply with the requirements of the Primary Drinking Water Regulations. Some, however, cannot meet the standards for turbidity, nitrate, and fluoride. A substantial number have deficiencies related to the secondary standards of iron and manganese. Strategy will be directed toward the installation of remedial treatment facilities to assure that the primary standards will be met in those cases where it is possible. In those cases where it is not possible to install remedial treatment facilities in order to meet the primary standards, variances and exemptions will be considered.

The responsibility for routine monitoring of public water systems has been placed upon the owners of such systems. Every public community supply within the State has received written notification of the requirements. As public non-community systems are found they will also be advised of this requirement.

Except where a shorter reporting period is specified, every supplier of water must, in accordance with the primary Drinking Water Regulations, report to the State within 40 days the result of any test, measurement or analysis required by regulations. Since suppliers were not routinely required to report such results in the past, their submittal has not been satisfactory. A maximum effort will be made to secure appropriate compliance, and the reported results will be entered into the data management system.

A data handling system designated MSIS (Model State Information System) is designed to handle the influx of analytical data, etc., that is received from water purveyors under the requirements of the Act. The Bureau is responsible for an inventory and data handling system for an estimated 9,000 public systems. Water purveyors are required to sample their water

quality and transmit these results to the State. Technical information on the water supply is developed and maintained to determine if standards are being met, if conditions for exemptions and variances are being complied with, if new or undesirable compounds are being found in the delivered water and if the existing standards are appropriate. The system is also used to develop the Federal reporting system required under the Act and to provide information on the supply.

Water purveyors must notify the public when they have failed to comply with the Primary Drinking Water Regulations. This activity will require a significant effort by staff to ensure that public notification requirements are being met.

In regard to complaints, procedures exist for the investigation of all consumer complaints relative to the adequacy and quality of water delivered by the public supplies. As a result of these investigations, remedial action is generally required of a purveyor. Disease surveillance and investigation is done in concert with the State Department of Health. All disease incidents suspected to be of water borne origin are investigated by Bureau staff. Both biological and chemical contaminants are investigated.

A potable water supply can be confronted with any number of emergency situations. The source of water may become contaminated; water shortages and outages may occur; treatment facilities may break down or malfunction; therefore an emergency plan is essential. Such a State Water Supply Emergency Plan was developed by Rutgers University under contract with the Bureau. This will need to be updated.

The Bureau, in conjunction with other interested Bureaus and Sections of the Department, will continue a program to detect suspected carcinogens in drinking water supplies. Investigations of suspected cases of contamination will be undertaken through special sampling of water supply systems so as to monitor quality that may be affected by adjacent sites containing chemical wastes. Consistent with the availability of staff and the requirements of other commitments, efforts will be made to sample a maximum number of public community water supply sources for specific organics. At present there are over 3,000 such sources. Technical assistance will continue to be provided to water utilities, local health departments, and other agencies and offices as requested. Such requests deal with sampling, evaluation of data, interpretation of standards and regulations, and attendance at meetings.

The Bureau of Safe Drinking Water will continue to assist in the training and certification program for licensing water works operators by providing technical assistance and advice and, on occasion, direct participation in training programs. It has representation on the Board of Examiners for the licensing of operators, and on the Commissioner's Advisory Committee for the Statewide training of operators. In addition, the staff will provide assistance to organizations such as the American Water Works Association, the Conference of State Sanitary Engineers, the American Water Resources Association, universities and colleges, and a number of other organizations.

iv. Bureau of Water Allocation

The purpose of this unit is to manage existing supplies of water within each basin to ensure adequate water supplies for present and future needs.

The program is based upon uniform permit systems for drilling wells and allocating water diversions from surface and subsurface water sources. Both systems are supported by a fee schedule to defray the cost of program operations; a monitoring program to measure water usage; and an inspection program to ensure that wells are properly constructed to prevent aquifer contamination, to properly measure diversion, to verify safe yield and to insure that abandoned wells are properly sealed. A licensing and certification program insures that well drillers, pump installers and well sealers are properly qualified. The Water Allocation Office also calculates and bills purveyors for excess diversions as defined by law.

Well drilling permits are received at a rate of approximately 1,000 per month. These permits are now being processed in a timely fashion; however, the permit staff is being hindered by increasing requests for information on existing wells (A result of the water diversion permit program which requires an applicant to provide information on other water supplies which might be affected by a requested diversion. There are approximately one million wells in New Jersey and the only source of data on such wells is the Water Allocation Office). The first priority for this activity is to facilitate public access to such data and to reduce staff time in research.

A second priority for the Well Permit Section is to increase the sealing of abandoned wells. This program has had little emphasis in the past and is needed to protect aquifers from contamination. The third priority is to increase the inspection of well activities, so as to ensure compliance with standards and regulations.

v. Office of Water Policy

The Office of Water Policy was created: (1) to stimulate and promote the achievement of the policy goals of the Statewide Water Supply Master Plan by recommending means for integrating them into the program of the Water Supply and Watershed Management Administration (WS&WMA) and the Division; (2) to periodically update the Water Supply Master Plan; (3) to develop and implement a water conservation program for New Jersey (4) recommend new or modified policies and program for the WS&WMA; and (5) to provide advice and recommendations to the Element and the Division on water supply related matters.

The duties of the Office include:

- Conducting periodic update and revision of the Water Supply Master Plan, including the revision of water demand projections based on estimates of population growth and economic development.
- Coordinating the implementation of the recommendations of the update of the Water Supply Master Plan.
- Recommending short-term and long-term water use and water conservation measures that should be implemented to assure efficient utilization of the State's water supply.

- Preparing recommendations to the New Jersey representative (Commissioner) to the DRBC on all matters brought before the Commission including matters relating to New Jersey's position in any negotiations and discussions pertaining to the Supreme Court Decree of 1931, as amended in 1954, allocating the waters of the Delaware Basin.
- Conducting economic analysis of certain proposed and existing water projects and programs including their multi-purpose nature and benefits.
- Assisting the Administrator in evaluating budget requests and overall operations in terms of effective use of resources of the Administration and the efficient execution of the Administration's policies and programs.
- Provide advice and recommendations to the Division regarding national water policies and the State's participation in organizations such as the Coalition of Northeastern Governors, the Interstate Conference on Water Problems and similar national groups.
- Conducting special water supply and resource management studies and analyses (e.g., nonstructural flood control measures in the Passaic River basin).

6. GEOLOGICAL SURVEY ELEMENT

The Geological Survey assembles and analyzes geologic data which are interpreted in reports and on maps used to make decisions about water supplies, waste treatment, storage and disposal, and construction of major engineering works. Geologic data are also used to help develop mineral resources, and resources used in construction, such as sand, gravel and stone. From time to time, the Geological Survey provides information used to minimize damage to man-made structures from natural hazards including geologic faults, landslides, and land subsidence.

In addition to its geologic responsibilities, the Survey maintains the State Geodetic Control Network; a system of nearly 14,000 marks. Maintenance of State boundary markers is also the job of the Geological Survey.

Among the sensitive public issues for which the Division of Water Resources must have a strong scientific and applied geologic research capability are the following: sanitary landfill location and design; hazardous waste storage, treatment and disposal; abandoned hazardous waste site and spill cleanup priorities and procedures; aquifer delineation for ground water development and maintenance and location of drought emergency supplies; and the structural integrity of engineering works.

The Geological Survey is organized into four units: the Bureau of Ground Water Resource Evaluation; the Bureau of Ground Water Pollution Analysis, the Bureau of Technical Support, and the Bureau of Geology and Topography. Each of these units is described below:

i. Bureau of Ground Water Resources Evaluation

The Bureau of Ground Water Resources Evaluation provides government agencies, public and private organizations, and individual citizens with information and assistance regarding the geohydrologic characteristics of New Jersey's aquifers and aquitards. This includes not only providing and interpreting known information, but also the collection and evaluation of new data to further the understanding of the ground water regime in New Jersey as it affects both ground water quality and supply. This information aids not only the Division of Water Resources in making decisions concerning ground water but also provides local authorities and private individuals with the technical information they require to make sound decisions concerning the ground water resources within their local jurisdictions.

This Bureau is involved in the development of computer applications to ground water. It has developed, modified and/or used a variety of computer programs to analyze ground water flow, contaminant transport and geophysical data.

Geophysical techniques are finding wide application in the area of ground water resource evaluation due to their speed and improved accuracy. Specifically, the Bureau has been involved in the development of seismic and electrical surficial geophysical methods for determining aquifer/aquitard characteristics. This information has then been used to assess the geohydrologic regime in areas of interest.

The Bureau has also undertaken several projects of a special nature. In the past these have included: New Jersey's Surface Impoundment Assessment program, preparation of specifications and acquisition of detailed color aerial photography, interpretation of aerial photography for geohydrologic applications, the inventory of injection wells in New Jersey as part of the Underground Injection Control program, development of a Statewide ground water monitoring program, and presentations on ground water, geophysics and geology to various groups and organizations.

ii. Bureau of Ground Water Pollution Analysis

The Bureau of Ground Water Pollution Analysis provides experienced technical expertise on matters pertaining to ground water pollution cases. Its professional staff are a fundamental part of the enforcement program of the Department. Section geologists provide primary support and input to all Department regulatory agencies concerned with ground water enforcement matters. The unit is responsible, for example, for identifying and delineating aquifer contamination, pinpointing pollution sources, determining mechanisms of transport, assessing damage and threat, proposing remedies and supporting enforcement actions against parties liable to prosecution. Its program interacts closely with the Water Resources Enforcement Element, the Bureau of Ground Water Discharge Permits, the Division of Waste Management, the Division of Law, and provides technical assistance to local governments and other parties.

Ground water investigations vary enormously in magnitude and complexity. Major cases demand prolonged investigation and, occasionally, litigation of several years duration. The 1977 PCB spill near Runyon well field

jeopardized the water supply for the entire city of Perth Amboy. Organic chemicals in one of South Brunswick's wells sparked an investigation and clean-up that has cost nearly \$5 million and more than four years of effort. Minor spills on the other hand may require only a single field visit. Each major case is a costly and time intensive effort demanding frequent personal interaction with a host of Department representatives, consultants, attorneys and their clients, other government agencies, the public and often the media.

iii. Bureau of Technical Support

This unit is primarily a field operation in support of the other Survey activities. It provides sophisticated geophysical and other subsurface geological information. Such activities as drilling of holes to determine direction of ground water flow and geophysical work to determine amount of overburden are performed. The Bureau maintains the equipment and schedules its use for the Department as needed.

iv. Bureau of Geology and Topography

This Bureau's activities include field mapping. The unit develops and updates the geologic data base in each of the State's physiographic provinces, as well as provides information to be used in the development of geologic quadrangle maps. Such information and maps are invaluable for State and local government bodies as well as private interests concerned with land use, mineral development, construction or other matters.

The Bureau also is the surveying-related operation of the Survey. It installs and maintains the geodetic control monuments (bench marks), which are the basis for all land surveying in the State. Related activities the program is responsible for include the restoration of damaged geodetic control monuments and maintenance of the location inventory of these units. In addition, the unit is responsible for planning, preparing and/or participating in the production of topographic and hydrographic maps and sophisticated photogrammetric, remote sensor and LANDSAT surveys that meet the needs of the Department.

7. MANAGEMENT SERVICES ELEMENT

The Management Services Element primarily addresses administrative functions required in operating the Division. The element consists of three units: the Bureau of Administrative Services, which includes fiscal budget, personnel, audit, training, public participation, and management reporting; the Bureau of Productivity and Support Services, which includes functions related to office services and data management; and the Office of the Superfund Coordinator.

8. OTHER DIVISION UNITS

In addition to the above elements of the Division, are two councils which serve in an advisory capacity. These include the Water Supply Advisory Council and the Clean Water Council; and are described below.

i. Water Supply Advisory Council

The Water Supply Advisory Council consists of seven members appointed by the Governor, with each serving for a term of three years. The main responsibilities of the Council include advising the Department concerning the preparation, adoption and revision of the New Jersey Water Supply Master Plan; advising the New Jersey Water Supply Authority concerning the construction, maintenance and operation of the State Water Supply facilities and projects; and advising the Department concerning the preparation and implementation of the Emergency Water Supply Allocation Plan.

ii. Clean Water Council

The Clean Water Council consists of eighteen members, each serving for a period of four years. The duties of the Council are specified in N.J.S.A. 58:25-12. Among those responsibilities are: consideration of any matter relating to the preservation and improvement of the Water Pollution Control Program, submission to the Commissioner of any recommendations which it deems necessary for the proper conduct and improvement of the Water Pollution Control Program, and study of regulations promulgated by the Department and the recommending of improvements. Public hearings are held at least once a year to discuss various water pollution control issues and subjects, with recommendations thereupon reported to the Commissioner.

II. Areawide WQM Plan Amendments and Revisions

This section contains amendments and revisions to the initial areawide WQM Plans. Plan amendments are significant, substantive changes to the Plans and require a formal process for adoption, while a Plan revision is more minor in nature and does not require a formal process for adoption.

Lower Delaware WQM Plan

1. "Designation of Lower Alloways Creek Township as a Sewerage Facility Planning Agency for the Village of Hancocks Bridge" - changes adopted November 18, 1982 after a thirty-day public comment period. Lower Alloways Creek Township requested to be the designated Sewerage Facilities Planning Agency for the Village of Hancocks Bridge, thereby removing this area from the jurisdiction (for purposes of sewerage facilities planning) of the Salem County Department of Health. Included in this amendment are the following specific changes to the WQM Plan:

- P. V-16, Figure V-2, Public Wastewater Treatment Services Areas and Facilities Planning Areas; Supplement, Figure V-2: Add Village of Hancocks Bridge to the map. Add, under AGENCY, "K. Lower Alloways Creek Township." Add, under STUDY AREA, "6. Village of Hancocks Bridge."
- P. V-18, V.B.2 Facilities (201) Planning Activities: Add "Lower Alloways Creek Township: This township is planning to install a 50,000 gallon per day extended aeration treatment plant for the Village of Hancocks Bridge. This project also entails building a pumping station with a force main to the treatment plant and the installation of house connections from existing dry lines. This area was formerly part of the area for which Salem County Department of Health has been conducting Step I planning."
- P. L-23, Appendix VII-1, Section B, INTERIM DESIGNATION OF PROPOSED MANAGEMENT AGENCIES FOR SEWERAGE FACILITIES. Add the following:

Lower Alloways Creek Township

Type of Facility	Construct	Operate	Maintain	Planning
1. Treatment Works (Conventional)	Village of Hancocks Bridge			Village of Hancocks Bridge
2. Conveyance Systems	Village of Hancocks Bridge			Village of Hancocks Bridge
3. Collector Systems	Village of Hancocks Bridge			Village of Hancocks Bridge
4. Other Systems (On-site, innovative)	Village of Hancocks Bridge			Village of Hancocks Bridge

2. "Designation of Lower Alloways Creek Township as a Sewerage Facility Planning Agency for Lower Alloways Creek Township" - changes adopted September 15, 1983 after a thirty-day comment period. Lower Alloways Creek Township requested to be the designated Sewerage Facilities Planning Agency for the entire Township of Lower Alloways Creek, thereby removing this area from the jurisdiction (for purposes of sewerage facilities planning) of Salem County Department of Health. Included in this amendment are the following specific changes to the WQM Plan:

- In addition to the changes resulting from adoption of a previous plan amendment concerning Lower Alloways Creek Township (11/18/82): page V-15, Table V-9, Municipal Wastewater Treatment Agencies Within Study Area. Under Agency, add "Lower Alloways Creek Township." Under County, add "Salem." Under Area Served, add "Village of Hancocks Bridge." Under Facility Capacity and Type of Treatment, add "0.050 mgd, secondary treatment."
- p. V-16, Figure V-2, Public Wastewater Treatment Service Areas and Facilities Planning Areas; Supplement Figure V-2: Add, under STUDY AREA, "6. Lower Alloways Creek Township."
- p. V-18, V.B.2. Facilities (201) Planning Activities, Lower Alloways Creek Township: Add to the first paragraph "This plant will be built with private funds."
- Add a second paragraph under this heading: "The Township of Lower Alloways Creek is also the Sewerage Facility Planning Agency for the entire township. The township in addition to the plant at Hancocks Bridge, is planning sewage treatment facilities for the villages of Harmersville and Canton. The township will be responsible for the planning, construction, and operation of all existing and proposed on-site sewage disposal systems within the township boundaries. This area was formerly within the area for which Salem County Department of Health is the Sewerage Facility Planning Agency."
- p. L-23, Appendix VII-1, Section B, INTERIM DESIGNATION OF PROPOSED MANAGEMENT AGENCIES FOR SEWERAGE FACILITIES. Add the following:

Lower Alloways Creek Township

Type of Facility	Construct	Operate	Maintain	Planning
1. Treatment Works (Conventional)	Lower Alloways Creek Township			Lower Alloways Creek Township
2. Conveyance Systems	Lower Alloways Creek Township			Lower Alloways Creek Township

3. Collector Systems	Lower Alloways Creek Township	Lower Alloways Creek Township
4. Other Systems (on site, innovative)	Lower Alloways Creek Township	Lower Alloways Creek Township

Monmouth WQM Plan

1. "Diversion of wastewater flow from the Manasquan River Regional Sewerage Authority to the Ocean County Utilities Authority northern treatment plant" - amendment adopted January 6, 1983 after a thirty-day public comment period. Manasquan River Regional Sewerage Authority requested that the flow from its entire service area be directed to Ocean County Utility Authority's northern treatment facility in Monmouth County. Included in this amendment are the following specific changes to the WQM Plan:

- P. V-35, Manasquan River Regional Sewerage Authority: Delete the first paragraph and insert: "The Manasquan River Regional Sewerage Authority (MRRSA) consists of five member communities: Howell Township, Farmingdale, Freehold Boro, Freehold Township and Wall Township. In early 1981 a conceptual agreement was reached between the MRRSA and the Ocean County Utilities Authority (OCUA), whereby the OCUA will treat and discharge sewage generated from service areas within the MRRSA. The MRRSA will as a result of the conceptual agreement be responsible for the planning, construction and operation of all conveyance facilities in the MRRSA's jurisdictional boundaries. The OCUA's northern wastewater treatment plant will accept the sewage, and the OCUA will charge a user fee to the MRRSA based on flows. AT the present time, however, the member communities are being serviced by individual treatment plants, where sewered. The service area is 103.4 square miles or 66,170 acres."
- Appendix VII-2, Section B, p. A-162. For the Manasquan River Regional Sewerage Authority, delete "Treatment Works" as a management and planning responsibility of the Manasquan River Regional Sewerage Authority. Add "Ocean County Utilities Authority" under Treatment Works.

2. "Extension of the Manasquan River Regional Sewerage Authority boundary to include the northwestern portion of Freehold Township" - amendment adopted August 18, 1983, after a thirty-day comment period. The Manasquan River Regional Sewerage Authority (MRRSA) requested that the boundary of the MRRSA facilities planning area be extended to include the northwestern portion of Freehold Township that is currently in the service area of Western Monmouth Utilities Authority (WMUA). The MRRSA service area flows are directed to the Ocean County Utilities Authority northern treatment plant, which has sufficient capacity for present and future flows. Included in this amendment are the following specific changes to the WQM Plan:

- P. V-35, Section V.B, V.B.1 Existing and Future Facility Planning Areas, under Manasquan River Regional Sewerage Authority, insert the following in place of the last sentence in paragraph 1: "The service area is 105.03 square miles or 67,220 acres."
 - Replace paragraph 8 with the following: "The northern boundary follows the northern border Howell Township, to the Freehold Township border, and then over to the New Jersey Central tracks. The boundary then goes south until it joins the Freehold Borough border. It follows this border until it crosses the railroad tracks at which time it follows the railroad tracks to the Manalapan Township border. The western border is formed by the Freehold Township border."
 - Under the Western Monmouth Regional Sewerage Authority, insert the following in place of the last sentence in paragraph 1: "The service area is 45.61 square miles or 29,190 acres."
 - Replace paragraph 2 with the following: "The jurisdictional boundary includes all of Manalapan Township, Marlboro Township, and Englishtown. The portion of Freehold Township within the area is comprised of the northwestern section, or that area which is not serviced by the Manalapan Regional S.A. or the Manasquan River Regional S.A. In Marlboro Township, the boundary follows the border between Marlboro and Colts Neck Township; along the border with Holmdel Township; then westward along the border with Matawan Township, up to the basin line separating the Matawan Creek Sub-Basin and the Deep Run Sub-Basin. The boundary follows this ridgeline in a south-westerly direction to the county border. The remainder of Marlboro Township, north of the Deep Run ridgeline, is serviced by the Bayshore S.A."
 - P. V-40, Figure V-9, Facility Planning Areas: Revise map to include the northwestern section of Freehold Township in the Manasquan River Regional Sewerage Authority service area.
 - P. V-41, Figure V-10, Sewerage Authority Service Areas: Revise map to include the northwestern section of Freehold Township in the Manasquan River Regional Sewerage Authority service area.
3. "Expansion of the Middletown Township treatment plant" - amendment adopted August 18, 1983 after a thirty-day comment period. The Middletown Township Sewerage Authority requested permission to expand the Middletown Township treatment plant from the current design capacity of 6.5 million gallons per day (mgd) to 10.8 mgd. The increased capacity will serve both Middletown (3.0 mgd) and the Atlantic Highlands/Highlands Sewerage Authority (AH/HSA) service area (1.3 mgd). As a result of this expansion, two primary plants in the AH/HSA area will be abandoned. The interceptor from the AH/HSA area to the Middletown plant will be privately funded. Included in this amendment are the following specific changes to the WQM Plan:
- P. V-7, Table V-1, "Summary of Point Source Inventory" Under RARITAN BAY BASINS, Institutional/Municipal, TREATMENT, number 7

for Borough of Atlantic Highlands add "To be abandoned upon completion of the Middletown Township STP expansion." Under the same heading, TREATMENT number 8 for Highlands Boro STP in Highlands Boro add "To be abandoned upon completion of the Middletown Township STP expansion."

- P. V-31, Section V.B Municipal Waste Systems, V.B.1 Existing and Future Planning Areas, Township of Middletown Sewerage Authority. Add a second paragraph:

The Middletown Township Sewerage Authority (MTSA) is currently planning to expand the 6.5 mgd plant to 10.8 mgd. The increased capacity will be used to serve both Middletown (3.0 mgd) and the Atlantic Highlands/Highlands Regional Sewerage Authority (AH/HRSA) service area (1.3 mgd). As a result of this expansion, two primary treatment plants in the AH/HRSA area will be abandoned. The interceptor will be built with Federal funds; the expansion of the plant will be privately funded.

Under the same heading, Atlantic Highlands - Highlands Regional Sewerage Authority, add a second paragraph:

The Atlantic Highlands/Highlands Regional Sewerage Authority will abandon the Boro of Atlantic Highlands plant and the Highland Boro Sewage Treatment Plant upon completion of the interceptor from the Middletown Sewage Treatment Plant. The proposed expansion of the Middletown Township plant includes 1.3 mgd capacity for the Atlantic Highlands/Highland areas.

- P. V-26, Figure V-5, Raritan Bay Drainage: Footnote discharge numbers 7 and 8. Footnote should read "*To be abandoned upon completion of the Middletown Township STP expansion."
- P. V-42, Table V-3, Status of Current 201 Facilities Planning. Substitute the following information under the Status column for Atlantic Highlands - Highlands Sewerage Authority: Step III grant awarded September 1983; Construction to begin Spring 1984.
- Appendix VII-2, A-163, Section B, Interim Designation of Proposed Management Agencies for Sewerage Facilities, Atlantic Highlands S.A. Under the heading of Responsibility, Management, Construct/Operate/Maintain, delete Atlantic Highlands and Highlands S.A., and add "Middletown Township Sewerage Authority".

Upper Delaware WQM Plan

1. "Designation of Milford Borough and Holland Township, Hunterdon County as a Facilities Planning Area" - amendment adopted September, 1981. Milford Borough requested to be the Sewerage Facilities Planning Agency for Milford Borough and Holland Township. Included in this amendment are the following specific changes to the WQM Plan:

- P. V-17, Figure V-2, Public Wastewater Treatment Service Areas and Facilities Planning Areas: Add Milford Borough and Holland Township to the shaded areas of the map. Add, under AGENCY, "I. Milford Borough." Add, under the STUDY AREA, "7. Milford Borough and Holland Township."

- P. V-19, V.B.2 Facilities (201) Planning Activities: Add "Milford Boro; Milford Borough received a Step I grant to do facilities planning in September, 1981. The Borough is currently working on the I/I analysis which will be submitted to the State within the next few months. They are also working on a Sludge and Septage Management Plan. The Facilities Plan should be completed by the end of this year."

- P. L-22, Appendix VII-2, Section B INTERIM DESIGNATION OF PROPOSED MANAGEMENT AGENCIES FOR SEWERAGE FACILITIES; ADDENDUM, p. 105 update of Appendix VII-2. Add the following:

Milford Borough

Type of Facility	Construct Operate Maintain	Planning
1. Treatment Works (Conventional)	Milford Borough, Holland Township	Milford Borough, Holland Township
2. Conveyance Systems	Milford Borough, Holland Township	Milford Borough, Holland Township
3. Collectors	Milford Borough, Holland Township	Milford Borough, Holland Township
4. Other Systems (On-site, innovative)	Milford Borough, Holland Township	Milford Borough, Holland Township
2. "Boundary correction for Middle South Branch of the Raritan River Planning Area".	The Upper Delaware Water Quality Management (WQM) Plan has been revised to include all of Raritan Township in the Middle South Branch Planning Area. This revision changes the boundary of the Middle South Branch of the Raritan River Planning Area as presently shown in the Upper Delaware WQM Plan to include all of Raritan Township, instead of excluding the corner of Raritan Township that drains into the Delaware River. This amendment includes the following specific change:	

- P. V-17, Figure V-2, Public Wastewater Treatment Service Areas and Facilities Planning Areas; Addendum, p. 31, Figure V-2: Correct boundary of the undesignated area in the Upper Delaware Plan to exclude Raritan Township.

Northeast WQM Plan

1. "Expansion of the Secaucus Municipal Utilities Authority treatment plant" - amendment adopted June 7, 1984 after a thirty-day comment period. The Secaucus Municipal Utilities Authority requested permission to expand the Secaucus treatment plant from the current design capacity of 2.25 million gallons per day (mgd) to 2.8 mgd. Included in this amendment are the following changes to the WQM Plan:

- P. V-5, Table V-2, "Municipal-Institutional Discharges": Change Design Cap. of Map No. 9-Secaucus STP to 2.8 mgd. Change average flow to 2.46 mgd.
- P. V-46,, Table V-10 Wastewater Flow Projections: Delete "Other Flow" and "Total Flow" information for Secaucus. Add "Pl. amendment - expand to 2.8."
- P. V-51,5. Hudson County Sewerage Authority (HCSA): Delete paragraph three and insert the following: "Secaucus- The 2.25 mgd secondary facility serving a portion of Secaucus will be expanded to 2.8 mgd with not less than treatment Level 1. (The additional flow above 2.25 mgd was originally to have been directed to the Jersey City East Plant.) The long-term treatment requirement for discharges to the Hackensack River will be Level 3. However, this level of treatment may be achieved through incremental phases over the period of time specified in the modified NJPDES permit."

2. "Expansion of the Warren Stage IV plant" - amendment adopted May 16, 1984 after a thirty day comment period. The Warren Township Sewerage Authority (WTSA) requested permission to expand the Warren Stage IV treatment plant from the current design capacity of 0.45 mgd to 0.80 mgd. The regional facility that would have served that part of Warren Township draining into the Upper Passaic River and Passaic Township will no longer be built. Included in this amendment are the following specific changes to the WQM Plan:

- P. V-57, Treatment Plant Wastewater Flow Projections, Upper Passaic River Basin, Passaic - Stirling: The Stirling plant will serve Passaic Township only, and the Warren Township plants will remain in operation and expanded and upgraded as necessary. The original proposal was for the Passaic Township plant to be expanded and upgraded to serve both Passaic Township and that part of Warren Township draining into the Upper Passaic River. This concept has been abandoned since the expansion of the separate treatment plants was found to be more cost-effective than building a regional facility. The Passaic Township plant will be expanded from 0.65 mgd to 0.85 mgd and upgraded to treatment Level 4 to serve parts of Passaic Township only; the Warren Stage IV plant will be expanded form 0.45 mgd to 0.80 mgd and also upgraded to treatment Level 4.

- P. V-105, Table V-16 "Required Treatment Levels" Under Upper Passaic Sub-Basin, add "Warren Stage IV" and "4" for treatment level.
 - P. V-108, Table V-14. Change the "2000 Conditions" for Secaucus plant to "2.8", "1", and "Upgrade and Expand" under the appropriate headings.
 - P. V-109, Table V-17 "Municipal Treatment Plants" Under "Recommended Action" for Warren Stage I & II, delete present recommendation, add "Upgrade". Under 2000 Conditions for Warren Stage IV, delete present information, add "0.80", "4", and "Expand and Upgrade."
 - P. V.113, paragraph 4. Delete this paragraph and insert the following: "The Secaucus plant will be expanded from 2.25 mgd to 2.8 mgd at treatment not less than Level 1. The long-term treatment requirement for discharges to the Hackensack River will be Level 3. This level of treatment may be achieved through incremental phases over the period of time specified in the modern NJPDES permit. If the SMUA requests further flow expansions in the future beyond 2.8 mgd, then NJDEP's determination will be dependant upon the NJDEP approved facilities planning developed by the Hudson County Utilities Authority concerning the Jersey City East Sewage Treatment Plant.
 - P. V-115. Under Upper Passaic Sub-Basin, line 2, change "ten" to "all". Insert the following paragraph on place of paragraph three: "Passaic Township has a 0.65 mgd secondary plant (Stirling) that will be expanded to 0.85 mgd. This expanded facility will have to upgrade to treatment Level 4. The Warren Stage IV facility will also be expanded to 0.80 mgd at treatment Level 4. Treatment Level 4 will also be required for the Warren Stage I and II plant."
- "Designation of Wood-Ridge Township as a Sewerage Facility Planning Agency" - revised March, 1981. The Northeast WQM Plan is revised to show the Township of Wood-Ridge to be a Sewerage Facilities Planning Agency for the Township.
- P. V-15, V.B.1 Existing and Future Facilities Planning Areas: Add "25. Township of Wood-Ridge. The township of Wood-Ridge is not to be considered in the planning of the Bergen County Utilities Authority plant as it is its own facilities planning area. '
 - p. V-16, Table V-4 FACILITY PLANNING AREAS: Add "25." under MAP NO. Add "Wood-Ridge Township" under PLANNING AREA.
 - P. V-17, Figure V-3 EXISTING 201 FACILITIES PLANNING AREAS: Changed map to conform to new planning area boundaries.
 - P. V-18, Table V-5 STATUS OF 201 PLANS Add onto the line for Wood-Ridge, under COST-EFFECTIVE ANALYSIS and I/I, "Submitted." Add, under EAS, "Not submitted."

- P. V-44, Figure V-4 RECOMMENDED FUTURE 201 FACILITIES PLANNING AREAS: Changed map to conform with new planning area boundaries.
- P. B-49, b. TREATMENT PLANT WASTEWATER FLOW PROJECTIONS, 1. Bergen County Utilities Authority (BCUA): Delete Wood-Ridge from the list of municipalities to be served by BCUA. Add "23. Township of Wood-Ridge. The township of Wood-Ridge received a Step I grant on March 31, 1981 and has submitted a Cost-Effective Analysis and an I/I report to the State. They have studied the cost-effectiveness of two wastewater alternatives: 1) upgrading present plant to Step III, IV or V treatment (depending on analysis by NJDEP) or 2) hooking into BCUA system."
- P. A-101, Appendix VII-2, Section B, INTERIM DESIGNATION OF PROPOSED MANAGEMENT AGENCIES FOR SEWERAGE FACILITIES. Add the following:

Type of Facility	<u>Wood-Ridge Township</u>		
	Construct	Operate	Maintain
1. Treatment Works	Wood-Ridge Township	Wood-Ridge Township	Wood-Ridge Township
2. Conveyance	Wood-Ridge Township	Wood-Ridge Township	Wood-Ridge Township
3. Collectors	Wood-Ridge Township	Wood-Ridge Township	Wood-Ridge Township
4. Alternative Systems	Wood-Ridge Township	Wood-Ridge Township	Wood-Ridge Township

- 3. "Construction of Chatham Glen Sewage Treatment Plant". The Northeast WQM Plan is revised to show a new treatment plant, owned, constructed and operated by Chatham Township. Included in this amendment are the following specific changes to the WQM Plan:

- P. V-7, Table V-2 Municipal - Institutional Discharges, add the following information under the appropriate headings: Map No., 55; NPDES (NJPDES) Permit Number, not assigned; discharger, Chatham Glen STP; Receiving Stream and Classification, Passaic River FW-2; Flow Design Capacity, 0.12; Average, Not applicable.
- P. V-40, V.B. Municipal and Industrial Discharges, V.B.1.a. Delineation and Discussion of Existing 201 Facilities Planning Areas, 22. Upper Passaic River Basin. Add the following after the first paragraph: "Construction of the Chatham Glen treatment plant".

The Northeast WQM Plan is revised to show that a new treatment plant, Chatham Glen, has been built in Chatham Township. This plant was built to serve a development of approximately 1800 people. This plant serves some of the population in Chatham Township that are designated not to be served by the Chatham Township main plant. The plant will be owned and operated by Chatham Township.

- P. V-56 b. Treatment Plant Wastewater Flow Projections, 19. Upper Passaic River Basin. Add the following under Chatham Township. The Chatham Glen plant will serve approximately 1800 people in Chatham Township. The design capacity for this plant is 0.12 mgd.
- 4. "Construction of Warren Stage V Sewage Treatment Plant". The Northeast WQM Plan is revised to reflect that a new treatment plant, owned and operated by Warren Township Sewerage Authority, has been constructed in Warren Township. Included in this amendment are the following specific changes to the WQM Plan:
 - P. V-7, Table V-2 Municipal and Institutional Discharges, add the following information under the appropriate headings: Map No. 54, NPDES (NJPDES) Permit Number 0050369, Discharger Warren Stage V STP, Receiving Stream and Classification Dead River FW-2, Flow Design and Capacity .38, Average.
 - P. V-40, V.B. Municipal and Industrial Discharges, V.B.1.a. Delineation and Discussion of Existing 201 Facilities Planning Areas, 22. Upper Passaic River Basin. Add the following paragraph at the end of the page: The Warren Stage V plant was constructed in 1981 at a design capacity of 0.38 mgd. This plant treats domestic sewage and discharges into the Dead River. This plant is required to use treatment Level 4.

Upper Raritan WQM Plan

- 1. "Expansion of the Raritan Township Municipal Utilities Authority plant" - amendment adopted January 19, 1984 after a thirty day comment period. The Raritan Township Municipal Utilities Authority (RTMUA) requested permission to expand the Raritan Township treatment plant from the current design capacity of 1.6 mgd to 2.2 mgd, to modify the NJPDES permitted flows in Flemington Borough to 0.3 mgd (the flow at which Flemington Borough can effectively treat its wastewater; 0.5 mgd will continue to be treated at the RTMUA plant), and to work with Flemington Borough to solve the problem of wastewater overflows into Bushkill Creek at the Flemington plant during storm events. Included in this amendment are the following specific changes to the WQM Plan:
 - P. V-4, Table V-2, "Municipal and Institutional Discharges in the Upper Raritan Planning Area". Under flow Design Capacity for Raritan Township MUA, change value to 2.2 Under Avg. for RTMUA, change value to 1.53. Under follow Design Capacity for Flemington Boro STP, change value to 0.3.
 - P. V-24, Middle South Branch Planning Area- Delete second, third, and fourth paragraphs and replace with the following:

The Facilities Plan was developed for the Raritan Township Municipal Utilities Authority by Clinton Bogert Associates, Fort Lee, New Jersey.

There are two treatment plants serving this area, the Flemington Borough Council Sewer Department, and the Raritan Township Regional Utilities Authority. A portion of the wastewater collected from the Flemington collection system, up to 0.5 mgd, goes to the Raritan Township MUA plant and the balance is processed at the Flemington Borough sewage treatment facility. The design capacity of the Flemington plant was recently downgraded to 0.3 mgd due to the treatment ability of the plant. The Flemington plant is also subject to wastewater overflows during storm events which result in raw sewage entering Bushkill Creek. The two municipalities will study ways to alleviate this problem in the future.

The Raritan Township sewage treatment plant has a design capacity of 2.2 mgd. The plant uses single stage activated sludge treatment to provide better than secondary treatment. The lagoon system, prior to discharge of the effluent, is no longer being used. The plant effluent is discharged to the Middle South Branch below Route 202.

2. "Increasing design capacity of Clinton Town STP" - The Upper Raritan WQM Plan is revised to reflect the increase in design capacity of the Clinton Town STP from 1.53 to 2.03 mgd. A sludge disposal plan was needed in order to utilize the remaining 0.5 mgd. The WQM Plan was revised on January 25, 1984. Included in this amendment are the following specific changes to the WQM Plan:

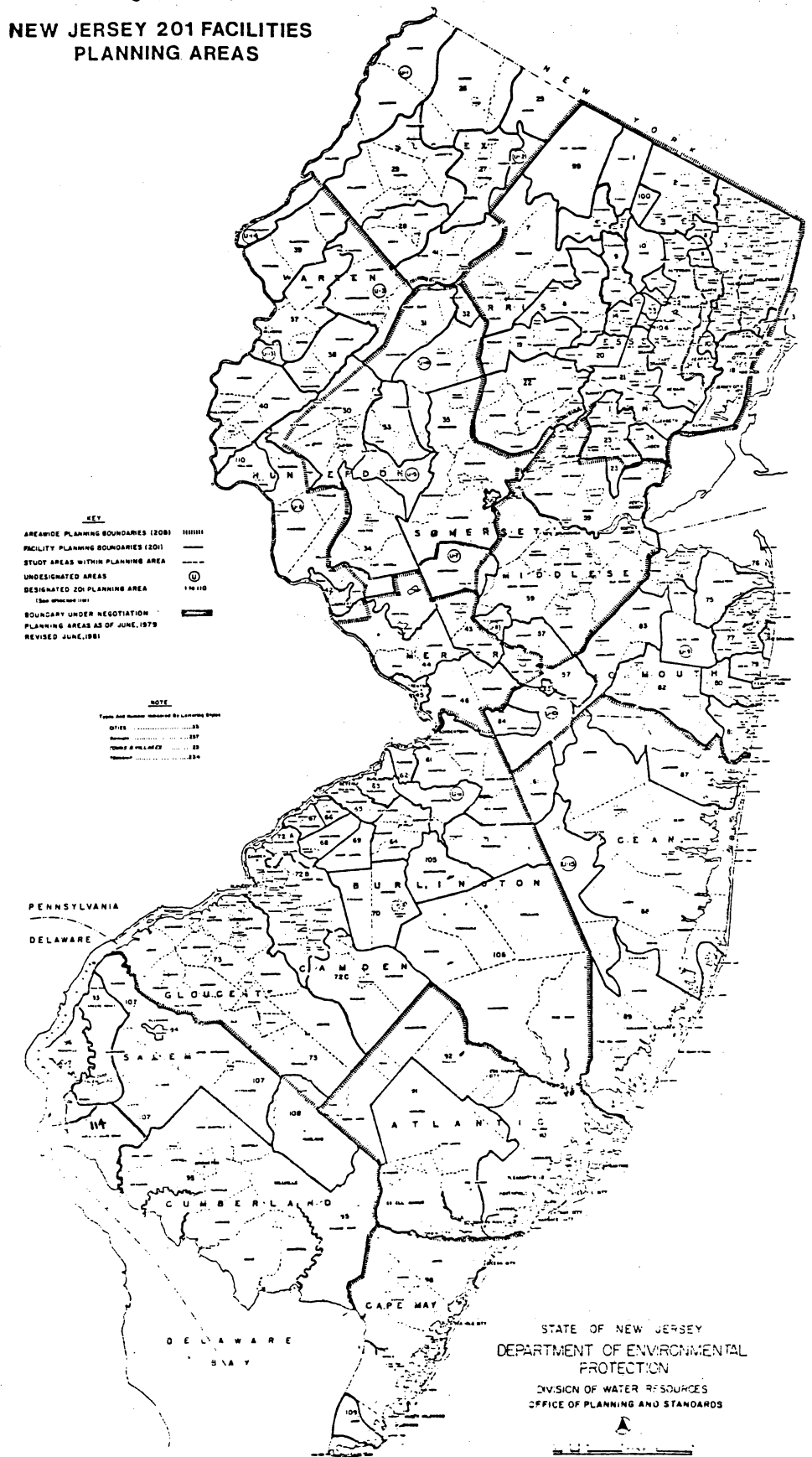
- P. V-4, Municipal and Institutional dischargers in the Upper Raritan Planning Area, under the heading Flow Design Capacity for Town of Clinton STP," change the volume to 2.03.
- P. V-20, North Hunterdon 10 Planning Area- Delete the third sentence of the second paragraph and replace with the following: The treatment facility has a design capacity of 2.03 mgd and operates an activated sludge contact stabilization process. The sludge from this facility is transported to Parsippany-Troy Hills where it is incinerated.

Miscellaneous

The following list is a compilation of wastewater facilities planning (201) areas in New Jersey. The list is to be used in conjunction with the "N.J. Facilities Planning Area" map which has been revised at the same time as this list. This list was originally completed in 1979 by the Office of Sludge and Industrial Pretreatment, Division of Water Resources, and has been periodically updated to reflect changes in planning areas.

The facilities planning areas are grouped according to WQM planning areas in the State, even though many 201 areas transcend WQM area boundaries. Abbreviations used in the list below include: SA-Sewerage Authority; UA-Utilities Authority, and MUA-Municipal Utilities Authority. (see Figure A-1, which is a reduced version of the "N.J. Facilities Planning Areas"

Figure A-1
NEW JERSEY 201 FACILITIES
PLANNING AREAS



map. The full-sized map is available for inspection at the office of the Bureau of Planning and Standards.)

I. Northeast WQM Area

1. Wanaque Valley Regional SA
2. Northwest Bergen UA
3. Bergen County UA
4. Pequannock River Basin Regional SA
5. Pompton Lakes MUA
6. Fairlawn/Ridgewood
7. Rockaway Valley Regional SA
8. Parsippany-Troy Hills
9. Pequannock-Lincoln Park & Fairfield SA
10. Wayne Township
11. Totowa/West Paterson
12. Passaic Valley Sewerage Commission
13. Edgewater
14. Caldwell Sewer Authority
18. Hudson County SA
19. Whippany River Basin Study Committee
20. Livingston/Florham Park
21. Essex and Union County Joint Meeting (portion)
22. Upper Passaic River Basin Study Commission (portion)
23. Rahway Valley SA (portion)
24. Linden/Roselle SA
99. West Milford Township
100. Oakland
101. Lyndhurst/North Arlington

102. Little Falls
103. Cedar Grove
104. Verona
111. Township of Wood-Ridge

II. Sussex County WQM Area

25. Pochuck Basin
26. Lower Wallkill Basin
27. Upper Wallkill Basin
28. Pequest Basin
29. Paulinskill Basin
41. Musconetcong SA (portion)
- U-1. Undesignated
- U-2. Undesignated

III. Upper Raritan WQM Area

21. Essex and Union County Joint Meeting (portion)
22. Upper Passaic River Basin Study Commission (portion)
30. North Hunterdon 10 (portion)
31. Mt. Olive/Washington Township
32. Roxbury Township
33. Rockaway Creek
34. Middle South Branch
35. Upper Raritan Watershed (portion)
36. Boro of Manville
- U-4. Undesignated
- U-5. Undesignated
- U-6. Undesignated (portion)

U-7. Undesignated (portion)

IV. Upper Delaware WQM Area

30. North Hunterdon 10 (portion)

37. Pequest River SA

38. Pohatcong Creek SA

39. Paulins Kill SA

40. Lopatcong Creek SA

41. Musconetcong SA (portion)

42. Lambertville SA

44. Ewing-Lawrence SA (portion)

110. Milford-Holland Planning Area

U-3. Undesignated

U-6. Undesignated (portion)

U-13. Undesignated

U-14. Undesignated

V. Mercer County WQM Area

43. Stony Brook Regional SA

44. Ewing-Lawrence SA (portion)

45. Trenton City SA

46. Hamilton Township MUA

57. Upper Millstone Water Management Study Group (portion)

VI. Lower Raritan/Middlesex WQM Area

23. Rahway Valley SA (portion)

35. Upper Raritan Watershed (portion)

57. Upper Millstone Water Management Study Group

59. Middlesex County UA

U-7. Undesignated (portion)

U-8. Undesignated

VII. Tri-County WQM Area

61. Northern Burlington County Regional SA (portion)

62. Florence Township

63. Burlington City and Township

64. Mt. Holly SA

65. Willingboro MUA

66. Delran SA

67. Cinnaminson SA

68. Moorestown Township

69. Mt. Laurel Township

70. Evesham MUA

71. Pemberton Township MUA

72. Camden County MUA

A. District 2

B. District 1

C. District 3

73. Gloucester County

105. Southampton Township

106. Southern Burlington County Septage Management

108. Landis SA (portion)

U-11. Undesignated

VIII. Monmouth County WQM Area

57. Upper Millstone Water Management Study Group (portion)

74. Bayshore Regional SA

- 75. Middletown Township SA
- 76. Atlantic Highlands/Highlands SA
- 77. Northeast Monmouth Regional SA
- 78. Long Branch SA
- 79. Ocean Township SA
- 80. Neptune Township SA
- 81. South Monmouth Regional SA
- 82. Manasquan Regional SA
- 83. Western Monmouth UA
- 84. Allentown Boro
- 85. Roosevelt Municipal SA
- U-9. Undesignated
- U-10. Undesignated

IX. Ocean County WQM Area

- 61. Northern Burlington County Regional SA (portion)
- 87. Ocean County SA-Northern District
- 88. Ocean County SA-Central District
- 89. Ocean County SA-Southern District
- U-10. Undesignated (portion)
- U-15. Undesignated

X. Atlantic County WQM Area

- 90. Atlantic Coastal Region
- 91. Lower Great Egg Harbor River Basin
- 92. Upper Great Egg Harbor & Mullica River Region

XI. Lower Delaware WQM Area

- 93. Salem County SA

- 94. Woodstown SA
- 95. Cumberland County SA
- 96. Pennsville SA
- 107. Salem County Health Department
- 108. Landis SA (portion)
- 112. Township of Lower Alloways Creek

XII. Cape May County WQM Area

- 98. Cape May County
- 109. Lower Township

III. Summary of Certification Conditions

The following are the certification conditions applicable to the initial Water Quality Management Plans, completed for the non-designated areas of the State. These conditions reflect current needs and priorities for the protection of water quality.

1. Sewerage Service - Related Conditions

- A. Designations of sewer authorities, municipalities, or other entities, for responsibilities pertaining to planning, constructing, operating, and maintaining sewerage facilities in the planning area should be updated and revised as appropriate.
- B. Sewer service area delineation information should be updated and expanded, and maps prepared to reflect current future conditions. Where possible, approved Wastewater Facilities (201) Plans should be used in the delineation of sewer service areas.
- C. A process should be developed for the annual updating of discussions of present and future wastewater treatment facilities; including ultimate capacity, service area, and wastewater flow projections. Approved Wastewater Facilities (201) Plans should be used where possible.
- D. Treatment facility wastewater flow projections should be developed based on updated Department projections.
- E. Where appropriate, develop the technical requirements and institutional arrangements necessary for implementation of septic tank management areas.

2. Planning - Related Conditions

- A. Approved Wastewater Facilities (201) Plans, or pertinent sections thereof, as utilized in 1.B and 1.C above, should be adopted into the WQM Plan and a procedure developed for resolving conflicts between the plans.
- B. Where appropriate, delineations of environmentally sensitive areas, resource protection and resource preservation areas, and other similar features must be technically justified on the basis of water quality; and a procedure outlined for protecting these areas.
- C. The sections of the WQM Plan to be used in consistency determinations should be indicated.

IV. New Jersey Water Quality Planning Act

C 75-1

C. 58:11A-1 et al.

P. L. 1977, CHAPTER 75, approved April 25, 1977

1977 Senate No. 1223 (Official Copy Reprint)

AN Act concerning water quality planning and specifying the functions, powers and duties of the Department of Environmental Protection, the county governments and certain areawide planning agencies and repealing parts of the statutory law.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. This act shall be known, and may be cited, as the "Water Quality Planning Act."
2. a. The Legislature finds that the people of the State have a paramount interest in the restoration, maintenance and preservation of the quality of the waters of the State for the protection and preservation of public health and welfare, food supplies, public water supplies, propagation of fish and wildlife, agricultural and industrial uses, aesthetic satisfaction, recreation, and other beneficial uses; and that the severity of the water pollution problem in the State necessitates continuing water quality management planning in order to develop and implement water quality programs in concert with other social and economic objectives. The Legislature further finds that water quality is dependent upon factors of topography, hydrology, population concentration, industrial and commercial development, agricultural uses, transportation and other such factors which vary among and within watersheds and other regions of the State and that "population" *abatement programs should consider these natural and man-made conditions that influence water quality. The Legislature further finds that the State's groundwaters are a precious and vulnerable resource.
- b. The Legislature declares that the objective of this act is, wherever attainable, to restore and maintain the chemical, physical and biological integrity of the waters of the State, including

EXPLANATION—Water enclosed in bold-faced brackets in the above bill is not enacted and is intended to be omitted in the law.

C 75-2

groundwaters, and the public trust therein; and that areawide waste treatment management planning processes should be developed and implemented in order to achieve this objective and to assure adequate control of sources of water pollutants in the State. The Legislature further declares that wherever practicable and feasible waste treatment management planning areas shall be coterminous with county boundaries, and that wherever appropriate county governments shall perform such areawide waste treatment management planning; that the Department of Environmental Protection shall conduct areawide waste treatment management planning for all areas of the State without a designated planning agency, and that said Department of Environmental Protection shall establish a continuing planning process which will encourage, direct, supervise and aid areawide planning and which will also incorporate water quality management plans into a comprehensive and cohesive Statewide program directed toward the achievement of water quality objectives; that the Department of Environmental Protection through the continuing planning process shall coordinate and integrate water quality management plans with related Federal, State, regional and local comprehensive land use, functional and other relevant planning activities, programs and policies; and that opportunities for meaningful public participation shall be provided during all phases of the water quality planning management process.

3. As used in this act, unless the context clearly requires a different meaning, the following words and terms shall have the following meanings:

- a. "Areawide plan" means the areawide water quality management plan authorized in section 5 of this act;
- b. "Commissioner" means the Commissioner of the Department of Environmental Protection;
- c. "Continuing planning process" means the Statewide planning process conducted by the Department of Environmental Protection as authorized in section 7 of this act;
- d. "Federal Act" means the "Federal Water Pollution Control Act Amendments of 1972" (Public Law 92-500; 33 U. S. C. 1251 et seq.);
- e. "Planning agency" means a single representative organization capable of developing effective areawide waste treatment management plans for a designated or nondesignated planning area; and

18 f. "Planning area" means those areas designated or nondesig-
19 nated herein or to be designated pursuant to section 4 of this act;

20 g. "Waters of the State" means the ocean and its estuaries, all
21 springs, streams and bodies of surface or ground water, whether
22 natural or artificial, within the boundaries of this State or subject
23 to its jurisdiction.

1 4. a. [The counties of Salem, Cape May, Monmouth, Somerset,
2 Hunterdon, Warren and Sussex are each hereby designated as
3 areawide waste treatment management planning areas pursuant
4 to the provisions of section 208 of the Federal Water Pollution
5 Control Act Amendments of 1972 for the entire area of each such
6 county which has not previously been designated as part of another
7 planning area provided further, however, that the Somerset
8 planning area shall include those portions of Morris county drain-
9 ing into the north branch of the Raritan and the Hunterdon
10 planning area shall include those portions of Morris county drain-
11 ing into the south branch of the Raritan. The existing designation
12 of the planning area consisting of Camden, Burlington and
13 Gloucester counties and of the planning areas based on the in-
14 dividual counties of Mercer, Middlesex, Ocean, Atlantic and
15 Cumberland are hereby confirmed as planning areas within the
16 boundaries of said existing designation. The area contained in the
17 Passaic and Hackensack River Basins and in those areas draining
18 into the Kill Van Kull and the Hudson river, which is known as the
19 Northeastern New Jersey Metropolitan Water Quality Manage-
20 ment Study Area, is hereby declared a nondesignated planning
21 area for the purpose of areawide waste treatment management
22 planning; provided, however, that the Governor may designate
23 portions of that area as one or more planning areas at any time
24 after the effective date of this act, after he reviews the existing
25 boundaries of the counties, the sewerage treatment agencies and
26 the river basins and sub-basins located therein.] *The Governor
27 may designate such areas as he may deem appropriate as areawide
28 waste treatment management planning areas pursuant to the pro-
29 visions of section 208 of the Federal Act. Said designation should
30 to the maximum extent practicable conform to county boundaries,
31 with appropriate modifications made to take account of the major
32 watersheds, as for example by including the south branch of the
33 Raritan in a Hunterdon county designation and the north branch
33a of the Raritan in a Somerset county designation. The existing
33b designation of certain planning areas is hereby confirmed.* The
33c Governor may also amend the boundaries contained in any of the

33b designated or nondesignated planning areas at any time after the
33c effective date of this act pursuant to the procedures required by the
33d Federal Act after he reviews the existing boundaries of the counties,
33e the sewerage treatment agencies and the river basins and sub-
33f basins located in that area. The Governor shall take whatever addi-
33g tional steps are required to implement this section.

34 b. The Governor shall designate, where practicable and appro-
35 priate and wherever the county conforms to the applicable require-
36 ments of the Federal Act or regulations promulgated pursuant
37 thereto, the county board of chosen freeholders as the designated
38 areawide planning agency in accordance with section 208 of the
39 Federal Act. The existing designation of certain areawide
40 planning agencies for certain planning areas is hereby confirmed.

1 5. Every designated planning agency and the Department of
2 Environmental Protection for all areas of the State without a
3 designated planning agency, shall conduct an areawide waste treat-
4 ment management planning process and submit an areawide plan
5 for that area to the Governor for adoption. Every county planning
6 board may also conduct a countywide waste treatment management
7 planning process and prepare a county water quality management
8 plan, which plan shall be consistent with the areawide plan or plans
9 provided for herein. The areawide plan shall be consistent with the
10 Statewide continuing planning process and shall be in conformance
11 with the rules and regulations promulgated by the commissioner
12 pursuant to section 9 of this act. Each planning agency shall
13 coordinate its work with every other planning agency with which it
14 shares a river basin or sub-basin and shall refer any conflicts
15 between itself and any such planning agency to the commissioner
16 for his mediation. The areawide plan shall include, but not be
17 limited to:

18 a. The identification of treatment works necessary to meet the
19 anticipated municipal and industrial waste treatment needs of the
20 area over a twenty-year period, annually updated, including an
21 analysis of alternative waste treatment systems and any require-
22 ments for the acquisition of land for treatment purposes; the
23 identification of the necessary waste water collection and urban
24 storm water runoff systems; and the determination of a program to
25 provide the necessary financial arrangements for the development
26 of such treatment works;

27 b. The establishment of construction priorities for such treat-
28 ment works and time schedules for the initiation and completion
29 of all treatment works;

30 e. The establishment of a regulatory program:
31 (1) to provide control or treatment of all point and nonpoint
32 sources of pollution, including in-place or accumulated pollution
33 sources, to the extent practicable;

34 (2) to regulate the location, modification, and construction of
35 any facilities within such area which may result in any discharge
36 in such area, and

37 (3) to assure that any industrial or commercial wastes dis-
38 charged into any treatment works in such area meet applicable pre-
39 treatment requirements;

40 d. The identification of those existing or required agencies or
41 political subdivisions necessary to construct, operate and maintain
42 all facilities required by the plan and otherwise necessary to carry
43 out the plan;

44 e. The identification of the measures necessary to carry out the
45 plan, including financing, the period of time necessary to carry out
46 the plan, the costs of carrying out the plan within such time, and
47 the economic, social, and environmental impact of carrying out the
48 plan within such time;

49 f. A process: (1) to identify, if appropriate, agriculturally and
50 silviculturally related nonpoint sources of pollution, including
51 runoff from manure disposal areas and from land used for live-
52 stock and crop production; and (2) to set forth procedures and
53 methods including land use requirements, to control to the extent
54 feasible such sources;

55 g. A process: (1) to identify, if appropriate, mine-related sources
56 of pollution including new, current, and abandoned surface and
57 underground mine runoff; and (2) to set forth procedures and
58 methods, including land use requirements to control to the extent
59 feasible such sources;

60 h. A process: (1) to identify construction activity related
61 sources of pollution; and (2) to set forth procedures and methods,
62 including land use requirements, to control to the extent feasible
63 such sources;

64 i. A process: (1) to identify, if appropriate, salt water intrusion
65 into rivers, lakes, and estuaries resulting from reduction of fresh
66 water flow from any cause, including irrigation, obstruction,
67 ground water extraction, and diversion; and (2) to set forth pro-
68 cedures and methods to control such intrusion to the extent feasible
69 where such procedures and methods are otherwise a part of the
70 waste treatment management plan;

71 j. A process to control the disposition of all residual waste
72 generated in such area which could affect water quality;

73 k. A process to control the disposal of pollutants on land or in
74 subsurface excavations within such area to protect ground and
75 surface water quality.

1 6. a. In every planning area in the State, the designated
2 planning agency or the Department of Environmental Protection
3 for all areas of the State without a designated planning agency,
4 shall consult the concerned county planning board or boards and
5 shall consider the advice of said county planning board or boards
6 for the planning area, and shall prepare all appropriate reports,
7 working papers, and plans in a manner which facilitates such con-
8 sultation with said county planning board or boards.

9 b. To assist the areawide planning agency in formulating its
10 plan, the agency shall appoint one or more policy and technical
11 advisory councils, consisting of selected elective and appointive
12 officials and members of the general public. The areawide plan
13 shall be prepared by the areawide agency only after consultation
14 with its policy or technical advisory council or councils.

1 7. The commissioner shall conduct a continuing planning process
2 which shall:

3 a. Integrate and unify the statewide and areawide water quality
4 management planning processes;

5 b. Conduct a statewide assessment of water quality and establish
6 water quality goals and water quality standards for the waters of
7 the State;

8 c. Develop a statewide implementation strategy to achieve the
9 water quality standards, which shall include, but not be limited to:

10 (1) the determination of effluent limitations and schedules of
11 compliance at least as stringent as those required by the Federal
12 Act;

13 (2) the determination of the total maximum daily load for
14 pollutants necessary to meet the water quality standards;

15 (3) the incorporation of all elements of any areawide waste
16 management plan prepared pursuant to this act;

17 (4) an inventory and ranking of needs, in order of priority, for
18 the construction of municipal waste treatment works needed to
19 meet the water quality goals and standards;

20 (5) methods for controlling all residual wastes from any water
21 treatment processing.

22 The commissioner may delegate aspects of the continuing
23 planning process to other State, Federal, interstate or local

C 75-7

24 agencies. The commissioner shall coordinate and integrate the
25 continuing planning process with related Federal, State, regional
26 and local comprehensive, functional and other relevant planning
27 activities, programs and policies.

1 8. The Department of Environmental Protection and all areawide
2 waste treatment management planning agencies shall establish a
3 comprehensive public participation program directed towards in-
4 forming the public and involving it in the water quality manage-
5 ment planning process. Opportunities for meaningful public
6 participation shall be provided during determination of planning
7 goals, plan development, review, and adoption in accordance with
8 the policy of this act and all applicable requirements of law.

1 9. The commissioner may, pursuant to the "Administrative
2 Procedures Act" P. L. 1968, c. 410 (C. 52:14B-1 et seq.), adopt
3 rules and regulations for the preparation and adoption of areawide
4 plans by the areawide planning agencies and in order to
5 effectuate the purposes of this act.

1 10. All projects and activities affecting water quality in any
2 planning area shall be developed and conducted in a manner con-
3 sistent with the adopted areawide plan. The commissioner shall
4 not make any grant for construction of a publicly owned treatment
5 works to any agency not identified as the necessary agency to
6 construct said facilities pursuant to any adopted areawide plan.
7 The commissioner shall not grant any permit which is in conflict
8 with an adopted areawide plan.

1 11. This act shall be liberally construed. If any one or more
2 sections, clauses, sentences, or parts of this act shall for any reason
3 be questioned in any court, and shall be judged unconstitutional or
4 invalid, such judgment shall not affect, impair or invalidate the
5 remaining provisions thereof, but shall be confined in its operation
6 to the specific provisions so held unconstitutional or invalid.

1 12. The following sections, acts and parts of acts are hereby
2 repealed:

3 P. L. 1971, c. 132 (R. S. 13:10-7),
4 R. S. 40:30-1 to 40:30-17, both inclusive,
5 R. S. 40:31-1 to 40:31-3, both inclusive,
6 R. S. 40:57-1 to 40:57-11, both inclusive,
7 P. L. 1909, c. 269 (R. S. 40:154-1),
8 R. S. 40:154-2 to 40:154-13, both inclusive,
9 R. S. 40:156-1 to 40:156-8, both inclusive,
10 R. S. 58:12-7 to 58:12-40, both inclusive,
11 R. S. 58:13-1, 58:13-2.

C 75-8

12 P. L. 1940, c. 46 (amending and supplementing P. L. 1909, c. 269
13 saved from repeal by R. S. 54:154-1),

14 P. L. 1951, c. 336, s. 11 (C. 40:154-1.6),

15 P. L. 1955, c. 112 (C. 40:154-1.7 to 40:154-1.10),

16 P. L. 1959, c. 93 (C. 40:154-1(26) to 40:154-1(28)).

1 13. This act shall take effect immediately.

N.J. Department of Environmental Protection
Division of Water Resources

April 2, 1984

V. Regulations Concerning the Water Quality Management
Planning and Implementation Process (N.J.A.C. 7:15-1 et seq.)

REGULATIONS CONCERNING THE WATER QUALITY
MANAGEMENT PLANNING AND IMPLEMENTATION PROCESS

SUBCHAPTER 1. GENERAL PROVISIONS

7:15-1.1 Scope

(a) This chapter establishes the following policies and procedures:

1. Policies, program requirements, and procedures for all State, areawide, and county water quality management planning and implementation activities;

2. The format for the Continuing Planning Process and the Statewide Water Quality Management Program Plan;

3. Mechanisms to resolve conflicts among State agencies, designated planning agencies, designated management agencies, counties, and other parties affected by the water quality management planning process;

4. Procedures for the amendment and revision of the Statewide Plan, and for other Water Quality Management Plans for which the State is responsible;

5. The objectives of the Continuing Planning Process; and

6. Procedures and criteria for the Department so that all projects and activities that affect water quality are consistent with the Water Quality Management Plans.

7:15-1.2 Construction

(a) This chapter shall be liberally construed to permit the Department to discharge its statutory functions, and to effectuate the provisions of the Water Quality Management Plans.

(b) The Commissioner may rescind, amend, or expand this chapter from time to time in conformance with the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq., as amended and supplemented.

7:15-1.3 Purpose

(a) The purpose of this chapter is to achieve the following objectives:

1. Establish the Continuing Planning Process and the Statewide Water Quality Management Program Plans;

2. Define the relationship between the Statewide, areawide, and county Water Quality Management Plans;

3. Identify the roles of the State, designated agencies, and county planning boards;

4. Establish a water quality management consistency determination procedure;

5. Establish procedures for resolution of conflicts in plan consistency;

6. Establish Water Quality Management Plan amendment procedures; and

7. Provide for the review, adoption, and certification of Water Quality Management Plan revisions, updates, and amendments.

7:15-1.4 Severability

If any section, subsection, provision, clause, or portion of this chapter is adjudged invalid or unconstitutional by a court of competent jurisdiction the remainder of this chapter shall not be affected thereby.

7:15-1.5 Definitions

The following words and terms as used in this chapter shall have the following meanings, unless the context clearly indicates otherwise:

"Amendments" or "adopted amendments" are formal changes to the Statewide, areawide, or county Water Quality Management Plans that have been approved, adopted, and certified pursuant to this chapter.

"Adoption" means the approval given by the Governor to the Department to implement, through rule-making procedures as necessary, any element of a Water Quality Management Plan.

"Areawide plan" means the areawide Water Quality Management Plan authorized in Section 5 of the Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.), and Sections 208 and 303 of the Clean Water Act (33 U.S.C. et seq.).

"Best Management Practices (BMPs)" means the methods, measures, or practices to prevent or reduce the amount of pollution from point or non-point sources, including structural and nonstructural controls, and operation and maintenance procedures.

"Certification" means the signification to the EPA Regional Administrator by the Governor, that Water Quality Management Plans or portions thereof are current in their inclusion of any annual revisions and their expected water quality improvements for specific Plan elements.

"Commissioner" means the Commissioner of the New Jersey Department of Environmental Protection or an authorized representative.

"Consistency determination" means the determination by the Department or designated planning agency as to whether a project or activity affecting water quality is either consistent, or not inconsistent with an adopted areawide plan and/or the Statewide Plan.

"Continuing Planning Process" means the Statewide planning process conducted by the Department of Environmental Protection as authorized in Section 7 of the Water Quality Planning Act (N.J.S.A. 58:11A-7).

"CP-1 application" means the formal application for a permit from the Department.

"Department" or "NJDEP" means the New Jersey Department of Environmental Protection.

"Designated area" means an area designated by the Governor as an areawide water quality management planning area pursuant to Section 4 of the Water Quality Planning Act (N.J.S.A. 58:11A-4).

"Designated management agency" means an agency designated in either the Statewide Plan, the areawide plan, or the county plan, to implement one or more of the policies, objectives, and recommendations of the appropriate document.

"Designated planning agency" means an agency designated by the Governor to conduct areawide water quality management planning pursuant to Section 4 of the Water Quality Planning Act (N.J.S.A. 58:11A-4).

"Division" means the Division of Water Resources, NJDEP.

"Drawings and/or plans" means those drawings, site plans and/or blueprints prepared by a Professional Engineer or Professional Planner, as appropriate, which portray the development specifications of the site project or activity.

"Environmentally sensitive areas" means those areas identified either in the 201 Facilities Plan or the Water Quality Management Plan as land areas possessing characteristics or features which are essential to the maintenance and/or improvement of water quality.

"Industrial/commercial" means any project or activity engaged in manufacturing, production and/or sales of services and/or products.

"Interim amendments" means amendments to the Statewide or areawide plans approved by the Commissioner or his designee but not yet adopted by the Governor or his designee.

"Major modification" means a significant alteration, expansion, or other change which may reasonably be expected to affect the quantity of flow treated or the quality of the effluent discharged to the waters of the State or to a publicly owned treatment works.

"Non-designated area" means an area not designated by the Governor as an areawide water quality management planning area pursuant to Section 4 of the Water Quality Planning Act (N.J.S.A. 58:11A-4).

"Non-designated planning agency" means the New Jersey Department of Environmental Protection which is responsible for water quality management planning in all areas not otherwise designated by the Governor, or where the responsibility has reverted back to the State.

"Non-point source" means a contributing factor to water pollution that cannot be traced to a specific discernible confined and discrete conveyance.

"Point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Revisions" means a change in the Water Quality Management Plan(s) necessary to correct existing information.

"State" means the State of New Jersey.

"Statewide Water Quality Management Program Plan" or "Statewide Plan" means the document containing the written policies, procedures and practices developed through the Continuing Planning Process pursuant to Section 7 of the Water Quality Planning Act (N.J.S.A. 58:11A-7).

"Storm water control plan" means a plan which details the necessary structures or measures designed to control storm water runoff from a site.

"201 Facilities Plans" means the plans for wastewater treatment facilities adopted pursuant to Section 201 of the Clean Water Act (33 U.S.C. 466 et seq.).

"201 Facilities Planning agencies" means those agencies which are responsible for conducting 201 facilities planning, pursuant to Section 201 of the Clean Water Act (33 U.S.C. 466 et seq.)

"303(e) and 209 Basin Plans" means the plans which establish the initial water quality standards and the preliminary continuing planning process for water basins.

"305(b) Water Quality Inventory Report" means the biennial report prepared by the State, pursuant to Section 305 of the Clean Water Act (33 U.S.C. 466 et seq.), which inventories and assesses the quality of surface and ground waters of the State.

"Update" means a change in the Water Quality Management Plan(s) necessary to modify existing information in order to reflect new or additional information.

"USGS quadrangle map" means any of the set of topographic maps prepared by the United States Geological Survey at 1:24,000 scale and known as "quadrangles" or "quads."

"Waste load allocation" means the assignment of maximum waste loads to point source discharges so as to maintain water quality standards.

"Wastewater treatment works" means any device or system whether public or private, used in the storage, treatment, recycling, or reclamation of municipal or industrial waste of a liquid nature including intercepting sewers, outfall sewers, sewage collection systems, cooling towers and ponds, pumping, power, and other equipment and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof, elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any other works including sites for the treatment process or for ultimate disposal of residues resulting from such treatment.

1. Additionally, "wastewater treatment works" means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of pollutants, including storm water runoff, or industrial waste in combined or separate storm water and sanitary sewer systems.

"Water Quality Management Plan" or "Plan" means the documents which encompass the activities, defined in and referred to, in Section 208 and 303 of the Clean Water Act (33 U.S.C. 466 et seq.) and the Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.) including both Statewide and areawide Plans.

"Water Quality Planning Act" means the Act which provides for the restoration and maintenance of the State's surface and ground waters through the use and coordination of areawide plans (N.J.S.A. 58:11A-1 et seq.).

"Work programs and plans" means those documents that detail the specific work activities proposed as part of a water quality management program.

SUBCHAPTER 2. PLANNING REQUIREMENTS

7:15-2.1 The Continuing Planning Process (CPP)

(a) The Department shall develop a Continuing Planning Process describing operating policies, procedures, and practices that comprise the water quality management planning process. This CPP is based upon formal State policy and on the policies, objectives, and programs in the areawide plans.

(b) The policies, goals, and objectives of the CPP which have Statewide or multi-county significance will be contained in the Statewide Water Quality Management Program Plan. In addition, elements of the adopted areawide plans having Statewide or multi-county significance may also be contained in the Statewide Plan. The remaining data and recommendations of the areawide and county plans will be incorporated by reference.

(c) The CPP may include, but is not limited to the following:

1. The following four-step process to insure that pollution problems are adequately addressed and solutions implemented:

i. Identification of existing and/or potential pollution problems related to surface and ground waters. (The 305(b) Water Quality Inventory Report shall be considered as the principal problem identification component of the Plan.)

ii. Development and recommendation of alternative technical solutions based upon available technology, effectiveness, economy, implementability, and public acceptance.

iii. Identification of strategies for the implementation of the aforesaid solutions through regulatory and non-regulatory programs, to include appropriate institutional and financial considerations.

iv. Designation of management agencies to carry out program activities.

2. Areawide Water Quality Management Plans, 201 Facilities Plans, the 305(b) Water Quality Inventory Report, and 303(e) and 209 Basin Plans.

3. Strategies, policies, standards, and criteria for point and non-point pollution control, protecting water resources, protecting environmentally sensitive areas and/or other water quality related issues.

4. Waste load allocation policy and effluent limitations for point sources.

5. A description of coordination activities of State, county and local agencies pursuant to applicable water quality related laws and regulations.

6. A description of existing and anticipated wastewater treatment needs, together with a description of actions and priorities to meet these needs.

7. Identification of measures necessary to implement the Water Quality Management Plans.

8. All regulations and modifications thereto adopted pursuant to all State laws that are applicable to water quality management and to water pollution control.

9. A description of a public participation strategy.

10. A description of delegated responsibilities of the CPP.

7:15-2.2 Relationship between the Statewide, areawide, and county Water Quality Management Plans

(a) The Statewide Water Quality Management Plan contains the written provisions of the Continuing Planning Process. It is the plan which directs and coordinates water quality management planning and implementation activities for the entire State and serves as a guide for areawide planning.

(b) The areawide plan is the basis by which the State and/or the designated areawide planning agencies conduct water quality management planning for a particular "area" or section of the State which has either designated or non-designated area status.

1. The areawide plan and its amendments shall be consistent with the Continuing Planning Process and the Statewide Plan.

2. All policies, objectives, and recommendations adopted in the Statewide Plan shall be concurrently adopted in the areawide plans without the need for separate hearings.

(c) Every county planning board may conduct a county-wide water quality management planning process and prepare a county Water Quality Management Plan. This process and Plan must be consistent with the appropriate areawide plan and the Statewide Plan. All policies, objectives, and recommendations adopted in the Statewide and appropriate areawide plans shall be concurrently adopted in the county plans, without the need for separate hearings.

7:15-2.3 Role of the Department

(a) The Department shall:

1. Conduct areawide planning for non-designated areas and for those designated areas where the responsibility for planning has reverted back to the State. Partial or full reversion of responsibility from designated planning agencies may result from one of the following circumstances:

i. An agency is financially, administratively, or otherwise unable to fulfill its responsibilities, as determined by the Department; or

ii. An agency desires to relinquish part or all of its responsibilities.

2. Coordinate and direct the activities of areawide and county water quality management planning agencies;

3. Review and approve areawide and county work programs, plans, and plan amendments;

4. To the maximum extent feasible, acts as a resource for areawide and county planning agencies, providing them with technical assistance, and information on Best Management and pollution control technologies;

5. Establish a Statewide Plan as part of its CPP responsibilities. Revise, update, and amend (as necessary) appropriate areawide or county plans, and/or the Statewide Plan;

6. Establish policies, procedures, standards, criteria, and regulations for water quality issues;

7. Establish waste load allocations on a case by case basis;

8. Prepare a biennial 305(b) Water Quality Inventory Report;

9. Prepare consistency determinations for non-designated areas and designated areas where the Department is responsible.

i. Also, determine consistency with 201 Facilities Plans for all designated and non-designated areas.

ii. Also, determine consistency for all projects and activities either proposed, constructed, and/or operated by the State for all designated and non-designated areas.

10. Coordinate State, county and local activities pursuant to the County Environmental Health Act. (N.J.S.A. 26:3A2-21 et seq.);

11. Make recommendations to the Governor, or his designee, regarding certification and adoption of the areawide Water Quality Management Plans; and

12. Delegate aspects and responsibilities of the CPP to other State, Federal, interstate, county or local agencies.

7:15-2.4 Role of designated water quality management planning agencies

(a) The designated water quality management planning agencies shall:

1. Revise, update, and amend the areawide and county plans as necessary;

2. Fulfill all responsibilities assigned to them under these rules, the Statewide Plan, their charter, any grant agreement, approved work program, and any agreement with the State;

3. Make consistency determinations pursuant to N.J.A.C. 7:15-3 et seq., and carry out other responsibilities as agreed with and/or assigned by the Department in accordance with N.J.A.C. 7:15-2.3;

4. Ensure that the areawide plan shall be consistent with the CPP and shall be in conformance with all State laws, rules and regulations; and

5. Ensure that environmental health ordinances adopted pursuant to the County Environmental Health Act shall be consistent with the applicable areawide plan and the Statewide Plan.

(b) Each planning agency shall coordinate its work with every other planning agency with which it shares a river basin or sub-basin and shall refer any conflicts between itself and any such planning agency to the Commissioner for his mediation.

SUBCHAPTER 3. PLAN ASSESSMENT, REVISION, AND ADOPTION

7:15-3.1 Water Quality Management Plan(s) consistency determinations

(a) The Commissioner shall not undertake, nor shall he authorize through the issuance of a permit, approval, or any similar action, any project or activity that is inconsistent with applicable sections of the areawide, county and/or Statewide Plans. This requirement shall apply, but not be limited, to the following:

1. No permit shall be issued by the Department for a project or activity that is inconsistent with an approved Water Quality Management Plan.

2. For certain projects and activities which will require NJDEP permits, the Department (where it is responsible) and the designated planning agencies (where they are responsible) shall perform the consistency determination. Other projects and activities do not require a consistency determination, however all projects and activities shall still be consistent with the approved areawide water quality management plans.

3. Table 1 identifies the appropriate consistency requirement. Actions that do not require a determination are considered to be either consistent or not inconsistent by their nature; or are not presently addressed in the Water Quality Management Plans.

Table 1

Identification of Project and Activities Requiring Consistency Determinations

i. Projects and activities proposing the following actions require Department or designated planning agency determinations:

(1) New surface water discharges (regulated by N.J.S.A. 58:10A-1 et seq.).

(2) New ground water discharges (regulated by N.J.S.A. 58:10A-1 et seq.).

(3) Existing surface water discharges proposing major modifications (N.J.S.A. 58:10A-1 et seq.).

(4) Existing ground water discharges proposing major modifications (N.J.S.A. 58:10A-1 et seq.).

(5) Sewer Systems (interceptors, collectors, pump stations) for residential developments of 50 units or greater (N.J.S.A. 58:10A-1 et seq.), and industrial/commercial and mixed use (including residential) developments having flows of 25,000 gallons per day or more.

(6) Actions regulated by the Coastal Area Facility Review Act (N.J.S.A. 13:19-1 et seq.).

(7) Actions regulated by the Wetlands Act of 1970 as Type B activities (N.J.S.A. 13:9A-1 et seq.).

(8) Actions regulated by the Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.).

(9) Diversion of surface or ground waters (over 100,000 gallons per day) (N.J.S.A. 58:1A-1 et seq.).

ii. Projects and activities proposing the following actions only, without any of the actions in part i of this table, do not require a consistency determination but shall still be consistent with the approved areawide Water Quality Management Plans:

(1) Purchase of water (pursuant to N.J.S.A. 58:1B-1 et seq., N.J.S.A. 58:22-1 et seq., N.J.S.A. 13:1).

(2) Approved and non-approved water supply connections (N.J.S.A. 58:12A et seq.).

(3) Construction or repair of dam (N.J.S.A. 58:4-2 et seq.).

(4) Well drilling (N.J.S.A. 58:4A-14 et seq.).

(d) If the project is in a designated area where the designated agency is responsible, then the applicant must follow the consistency determination procedure established by the designated planning agency and approved by the Department. The procedure in N.J.A.C. 7:15-3.2 shall be used by the designated planning agency until their procedure is adopted by them and has been approved by NJDEP.

(e) If the designated planning agency finds that the project is inconsistent with the Plan, then the conflict resolution process appropriate to that agency will be followed.

1. The conflict resolution procedure in N.J.A.C. 7:15-3.3 shall be used by the designated planning agency until their procedure is adopted, and has been approved by NJDEP.

2. All procedures prepared by the designated planning agencies must be consistent with these regulations and approved by the Department.

(f) The Department, or its delegated agency, shall be responsible for consistency determinations for the areawide plans in the non-designated areas of the State; for projects and activities either proposed, constructed, and/or operated by the State; and in those designated areas where the Department is responsible for consistency determinations.

(g) In those designated areas where the responsibility for consistency determinations remains with the Department, the Department shall have the authority to amend, revise, and/or update the areawide plan pursuant to the procedures in N.J.A.C. 7:15-3.4.

7:15-3.2 Procedures for making consistency determinations

(a) Proposals for projects and activities in Table 1 of N.J.A.C. 7:15-3.1(a)3, shall be submitted to the Department for a consistency determination. These project proposals shall include, (where applicable), but not limited to the following:

1. A narrative description of the project, including: discussion of geographic location, type and number of development units, anticipated population, anticipated wastewater flow, availability of existing wastewater treatment works, proposals for new wastewater treatment works (to include proposed owner and operator), potential water quality impacts, and storm water control plan.

2. A USGS quadrangle map showing the project site and discharge location.

3. Drawings and/or plans which illustrate the description in (a) 1 above.

(b) The following procedure shall be followed by the Department in the review of a project proposal:

(5) Actions regulated by the Air Pollution Control Act (1954) (N.J.S.A. 26:2C-9.2 et seq.).

(6) Renewals and/or modifications of existing permitted activities that do not propose major modifications (as determined by the Department).

(7) Actions regulated by the Wetlands Act of 1970 as Type A activities (N.J.S.A. 13:9A-1 et seq.).

(8) Stream encroachments N.J.S.A. 58:16A-50 et seq.

(9) Waterfront development activities N.J.S.A. 12:5-3.

(10) Sewer systems (interceptors, collectors, pump stations) for residential developments of 49 units or less (N.J.S.A. 58:10A-1 et seq.), and industrial/commercial and mixed use (including residential) developments having flows 25,000 gallons per day or less. (Projects that are extensions or modifications to existing projects where the cumulative total for the project is greater than 49 units or 25,000 gallons per day as appropriate, shall require a consistency determination.

(11) Water lowering (N.J.S.A. 23:5-29, N.J.S.A. 58:4-9).

(12) Construction and/or operation public potable works (N.J.S.A. 58:12A et seq.).

4. Grants for construction of publicly-owned treatment works, facilities planning, design, and construction may be awarded only to appropriately designated management agencies as identified in the approved Water Quality Management Plan.

5. Department planning and funding programs that impact State waters, including but not limited to the establishment of water quality standards, water quality inventories, and waste load allocations.

(b) Prior to issuing a NJDEP permit, the Department shall require the applicant to provide either determination from the applicable designated planning agency or the State (in areas where it is responsible) indicating that the project or activity is not inconsistent with the Water Quality Management Plan. Although projects and/or activities that are not identified, herein, do not require the issuance of a consistency determination, nevertheless, said projects and/or activities shall be consistent with the Water Quality Management Plan.

(c) The consistency determination review by the designated planning agency or the State may be conducted either concurrently with other NJDEP permit reviews, or prior to other reviews on a pre-application basis. If reviews are conducted concurrently, no permit may be issued if the project or activity is found to be inconsistent with the Water Quality Management Plan.

1. Upon receipt of a completed proposal, the Department will review the appropriate areawide plan and the Statewide Plan to determine whether the project or activity is consistent with the provisions and recommendations of the Plan. This review shall include, but not be limited to, the following plan components where applicable:

- i. Population forecast(s);
- ii. Wastewater flow projection(s);
- iii. Availability of wastewater treatment works (treatment plant, interceptor lines);
- iv. Identification of appropriate wastewater treatment works (regional or municipal facility, on-site treatment facility, on-site septic system, other);
- v. Identification of appropriate project management agency;
- vi. Use of Best Management Practices for storm water; and
- vii. Other water quality based policies, goals, objectives, and/or recommendations.
- viii. The Department will assure consistency with appropriate elements of the applicable adopted 201 Facilities Plans for all non-designated and designated areas. These elements shall include, but not be limited to:

(1) Identification of areas suitable or unsuitable for development with consideration of environmentally sensitive areas; and

(2) Items i through v above, where applicable

2. This review will be completed within 90 days of receipt of a completed project proposal, as identified by the Department, in accordance with (a) above.

3. Upon completion of the review, the Department will issue a determination of consistency. This determination will state that the project or activity is either consistent, not inconsistent, or inconsistent with the Water Quality Management Plans.

i. A project or activity will be determined to be consistent if it is in accordance with the policies, goals, objectives and/or recommendations of the Water Quality Management Plan.

ii. If the plans do not contain provisions precluding a project or activity, then this will be interpreted to mean that the project is not inconsistent. A finding of not inconsistent is equivalent in effect to a finding of consistent.

iii. A finding of inconsistent means that the project is in conflict with the written provisions of the Water Quality Management Plan.

4. If a project is found to be consistent or not inconsistent, then the applicant, either may proceed to apply formally for the appropriate NJDEP permit, or may be issued a permit applied for concurrently (where appropriate). A statement from the Department will be provided for the applicant's use in preparing CP-1 application, or for submittal to the appropriate Department bureau.

5. If a project or activity is found to be inconsistent, then the applicant will be notified of the reasons for this finding.

i. The applicant may request a resolution of the conflict. The conflict resolution procedure is presently in N.J.A.C. 7:15-3.3

ii. No permit may be issued for a project or activity found to be inconsistent.

(c) Interested parties may comment on consistency determinations through the appropriate draft and/or final permit public review and comment process. Such comments will be taken into consideration prior to the issuance of a final permit.

7:15-3.3 Procedures for resolution of conflicts in plan consistency

(a) The following procedures shall be followed where a proposed project or activity has been found to be inconsistent with the policies and procedures of the areawide plans where the State is responsible and/or the Statewide Plans, and the applicant chooses to resolve the conflicts. Conflicts with designated areawide plans shall follow the appropriate procedures of the designated agency. Such procedures must be consistent with this section and approved by the Department.

1. The applicant may formally request a resolution of conflict by writing to the Department via certified mail within 30 days of receipt of notification. This request shall include, but not be limited to:

- i. Description of project;
- ii. Description of conflict; and
- iii. Proposed resolution of conflict.

2. The applicant shall meet with the Department within a reasonable period of time to examine and resolve mutual differences in a resolution conference.

3. As a result of the resolution conference, the applicant may either revise his project or activity to conform with the Plan, or seek an amendment to the Plan as discussed in N.J.A.C. 7:15-3.4, or appeal the

determination pursuant to the Administrative Procedure Act (N.J.S.A. 52:14B-1 et seq.).

4. Other interested parties (as determined by the Department) may appeal the consistency determination by writing to the Director, via certified mail, within thirty (30) days of the date of the determination.

7:15-3.4 Water Quality Management Plan amendment procedures

(a) The Department shall propose amendments to the Statewide and appropriate areawide plans whenever such amendments are deemed necessary due to new or changed circumstances, modified State or Federal requirements as a result of the conflict resolution procedure, new policies, and/or to correct information.

(b) Designated planning and/or management agencies, 201 Facilities Planning agencies, county or municipal governments, interested citizens, and applicants who have followed the conflict resolution procedure, may petition the Department to amend the Statewide plan.

1. Areawide plans may be amended pursuant to procedures adopted by the individual designated planning agency or the procedures under (c) below for the plans where State is responsible.

2. Procedures developed by the designated planning agencies must be consistent with this section and approved by the Department.

3. All amendments to areawide and county plans must be approved by the Department and certified by the Governor or his designee.

(c) The procedures for seeking an amendment to the plans under the State's responsibility, are as follows:

1. Requests for amendments should be submitted in writing to the Bureau of Planning and Standards, (BPS), Division of Water Resources, CN 029, Trenton, New Jersey 08625.

2. Requests for amendments as a result of the conflict resolution procedure shall include, but not be limited to:

- i. Detailed description of the basis for the proposed amendment;
- ii. Previous resolution techniques utilized;
- iii. Documentation substantiating the party's position; and

iv. Letters of approval or resolutions by parties affected by the proposed amendment where appropriate (as determined by the Department). A list of parties that must be included will be provided by the BPS.

3. These requests, and any other amendment requests not initiated by the Department, shall be reviewed by the BPS, which will develop recommendations for the Commissioner's consideration.

4. For all amendment requests, the Commissioner shall make a preliminary decision within a reasonable period of time based upon a complete review of the case file, the BPS recommendation, and any other pertinent information.

i. If the Commissioner makes a preliminary approval or approves the amendment request, then a public notice will be posted in the New Jersey Register and two appropriate newspapers.

(1) Interested parties may submit written comments to the BPS within 30 days of the date of the notice.

(2) Parties may also request in writing, that the Department hold a nonadversarial public hearing. If there is significant interest as determined by the Department, in holding a public hearing, then a public hearing will be held 45 days after the public notice, and the public comment period will be extended for 15 days following the hearing. Following the notice or hearing, as appropriate, the Commissioner shall render a final decision on the amendment within 60 days.

ii. If the Commissioner disapproves the amendment request, then the request will be returned to the party for appropriate revision, if the applicant so chooses.

5. All appeals of amendment decisions shall be made in accordance with the requirements of the Administrative Procedure Act (N.J.S.A. 52:14B-1 et seq., as amended and supplemented).

6. Amendment proposals that have been approved by the Commissioner, in accordance with (c) 4 above, shall be considered interim amendments until adopted by the Governor or his designee.

(d) Adoption of related portions of 201 Facilities Plans, 305(b) Water Quality Inventory, or any other water quality related plan or regulation formally adopted by the Governor, or his designee, shall be considered to be adopted in the Water Quality Management Plans without the need for further adoption procedures.

7:15-3.5 Water Quality Management Plans review, adoption and certification

(a) At a minimum, all the Water Quality Management Plans shall be reviewed annually and, if necessary, revised and updated.

1. The revisions, updates and any interim amendments to the areawide and Statewide plans will be adopted annually by the Governor, or his designee, subject to a public hearing, and pursuant to the

Administrative Procedure Act (N.J.S.A. 52:14B-1 et seq., as amended and supplemented).

2. A certification of this adoption shall be made to the United States Environmental Protection Agency annually by the Governor.

