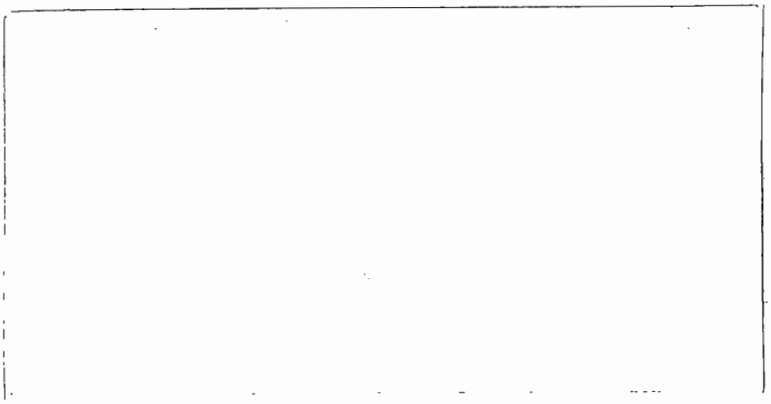

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NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF COASTAL ZONE MANAGEMENT

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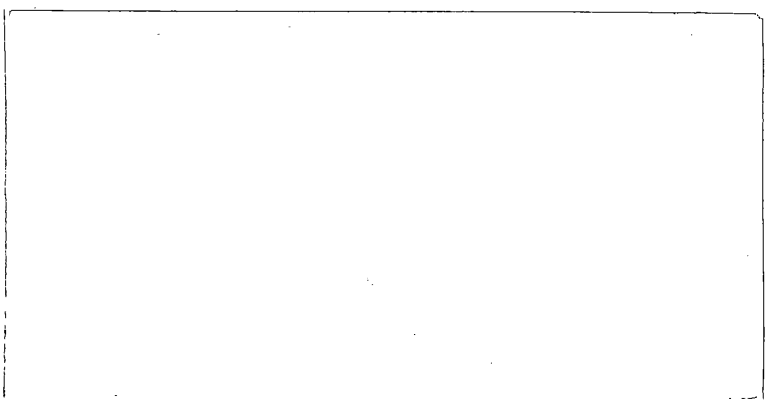

AREAWIDE (208) WATER QUALITY MANAGEMENT PLANNING and the NEW JERSEY COASTAL ZONE MANAGEMENT PROGRAM

Opportunities for Interagency Coordination

A Staff Working Paper

Robert A. Kull

Office of Coastal Zone Management

Division of Marine Services

New Jersey Department of Environmental Protection

P.O. Box 1889

Trenton, New Jersey 08625

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OBJECTIVE

This paper is presented primarily as a reference document for the planning staffs of the Coastal Zone Management Program and for the Areawide ("208") Water Quality Management Programs in New Jersey's coastal region. It seeks to facilitate the exchange of information and in turn to promote the compatability of policies, among the various agencies by identifying at what point in the planning process that work products or other program outputs may most effectively be utilized as inputs to other areawide water quality or coastal planning programs. By indicating the types and sources of these work products, this paper may also be useful to environmental groups, builders, and other concerned officials and citizens as an overview of the respective programs and as a directory to coastal zone information resources.

Initially, an approach to interagency coordination is discussed within the context of consistency, integration, delegation, and dialogue between the two programs with respect to water quality planning and administration. To familiarize the reader with the principles and objectives of the Coastal Zone Management and Areawide Water Quality Management programs, an overview of each program and its planning process is presented. Subsequent sections explore potentially conflicting program areas in need of immediate attention and resolution, and present in detail program areas in which interagency coordination may be most beneficial. Program milestones and timetables and information sources used to support the text conclude the report.

The nature and structure of the Areawide Water Quality Management programs as presented in this paper are derived primarily from the Detailed Work Plans, or Project Control Plans, of the individual agencies. Although the latest available information was solicited and utilized in the preparation of this report, many of these plans may be out of date. Corrections or revisions to this information which may update or otherwise add to the utility of this report are welcomed.

AN APPROACH TO INTERAGENCY COORDINATION

The Need for Interagency Coordination

Both Areawide Water Quality Management and Coastal Zone Management are potentially powerful programs which, through the application of environmental planning and other techniques, may come to exert a major influence in guiding the directions and patterns of New Jersey's future growth. It is important, therefore, that these programs learn from the experiences of one another, and seek to resolve potential conflicts as they evolve. Coordination and cooperation should characterize the relationship of these programs. It is in this spirit that New Jersey's Office of Coastal Zone Management presents these proposals for interagency coordination.

The Areawide Water Quality Management and Coastal Zone Management programs overlap in their concern for the maintenance and restoration of the quality of the coastal zone's water resources. Mutual concerns of these programs include the protection of important natural areas, and the identification of priority areas for improving water quality in the coastal zone. Coastal Zone Management in New Jersey is broader in its objectives and authority, but the Areawide Water Quality Management programs are more detailed in their design of a systematic program of regulatory authority ultimately specifically directed toward water use and water quality. Water quality planning, performed cooperatively by these programs, can set both the context for the development of management policies for coastal resources and the guidelines for the administration of a coordinated regulatory system for water quality management.

Coastal Zone Management policies can provide input to Areawide Water Quality Management programs through the regulation of construction activities, development of land use policies, and identification of those areas in which the discharge of pollutants should be prohibited. Areawide programs can provide the Coastal Zone Management program with significant additional detail for defining permissible land and water uses and for incorporating water quality concerns.

The different timetables, implementation tools, and funding levels of the programs tend to interfere with interagency coordination, but at the same time they underscore the need for such cooperation. The variety of timetables complicates program development and the flow of information resources among the programs. The different regulatory and institutional tools available to implement each program may tend to overlap if interagency coordination is not used to guide these tools into a complementary relationship. Disparate funding levels among the programs constrain the extent to which certain water quality and related land use management issues may be addressed in particular areas.

The Coastal Zone Management and Areawide Water Quality Management programs share a relatively new and untested Federal approach to planning. Both programs provide planning and implementation grants to States to accomplish specified broad objectives, and both require that Federal action be consistent with State plans. Furthermore, both programs require the State to supply the legislation and the authority necessary to implement the plans. One of the most fundamental differences between the programs is the available level of funding: in fiscal year 1977, the Ocean County 208 planning grant exceeded the Coastal Zone Management grant for the entire State of New Jersey.

The Areawide Water Quality Management and the Coastal Zone Management programs clearly need to cooperate and coordinate in order to achieve an effective water quality management program synthesis in the coastal region. Federal requirements, in fact, through legislation, regulation, and federal interagency agreements, mandate such efforts among the programs. Financial considerations in themselves bring the programs to act with prudence in the coordination of program development and implementation processes to these ends. The needs for interagency coordination are clear and pressing.

The Basis of Interagency Coordination

In response to these needs, New Jersey's Office of Coastal Zone Management proposes an approach to interagency coordination based upon consistency, integration, delegation, and dialogue.

Consistency

Federal Law (the Federal Coastal Zone Management Act of 1972, Section 307(f)) requires that State Coastal Zone Management programs incorporate the water quality standards and pollutant discharge limitations generated by the water quality management programs, such as the Areawide Water Quality Management programs, authorized under the Water Pollution Control Act Amendments of 1972. Reciprocally, the planning, construction, and management activities of these latter programs are required to be consistent with approved Coastal Zone Management programs.

Beyond these specific requirements, as enumerated in Federal regulations, consistency among the agencies and programs should be rooted deeply within their planning and implementation processes. This may be assured by the use of assumptions, technical criteria, data, and analytical techniques which are compatible, if not identical, between the programs. All documentation and plans relevant to water quality management should be exchanged or shared among the agencies.

Integration

Certain tasks in the planning and implementation processes of the respective programs may be found to be performed most effectively as joint ventures. In this regard, administrators and staff

should seek out and encourage such opportunities to integrate their programs with others on a task by task basis.

Delegation

Other tasks common between programs may be best performed by a single agency, with tasks being shaped or allocated by mutual agreement on a functional, geographical, and/or temporal basis. Such tasks may be allocated on a functional basis with regard to such factors as available manpower, expertise, financial considerations, and the availability of supportive services. Tasks may be allocated geographically to those areas where particular opportunities exist to intensively study experimental applications of analytical and managerial techniques. Tasks may also be allocated temporally, as the variety of timetables among the programs place certain agencies in an advantageous position for such program development tasks as the development of methodologies and analytical techniques and the cultivation of information resources and data management techniques, whereas those agencies following later timetables may be better suited to perform those tasks requiring more detailed levels of analysis. Interagency coordination can thus utilize the resources within the respective programs more efficiently for the greater benefit for all.

Dialogue

Dialogue constitutes the fundamental basis for interagency coordination. Such dialogue should accommodate a regular and free exchange of information. Agency administrators and staff should be alerted of approaching key decision points in the management and planning processes, especially when alternative policy proposals or decisions affecting existing policies are being considered. Periodic (although not necessarily regular) meetings should be held on both executive and staff levels to address and attempt to resolve potential conflicts, common problems, or other issues.

Such an approach should establish a strong and active program of interagency coordination, given the cooperation of the participants in the agencies involved. The principles of consistency, integration, and delegation form the support of this proposed approach, and the active role of dialogue would serve to nurture the programs from a mere coexistence to a comprehensive planning and implementation approach to water quality management. Dialogue between the progrmas has occurred sporadically in the past. As both programs are becoming increasingly prescriptive in the development of their polices, the immediate implementation of an effective approach to interagency coordination has become imperative.

NEW JERSEY'S COASTAL ZONE MANAGEMENT PROGRAM

Principles of Coastal Zone Management

Numerous competing and conflicting pressures confront the New Jersey coastal zone, from the restoration of the decayed waterfront of the Hudson River, to the protection of the rich and varied estuarine and marine resources of the Atlantic Ocean and behind the barrier islands, to the location of energy facilities along the Atlantic shore and the Delaware River. The Federal Coastal Zone Management Act of 1972, and its amendments in 1976, initiated a process of coastal planning designed to create a coherent state-wide system to make decisions on coastal land and water uses of greater than local significance. New Jersey's own Coastal Area Facility Review Act of 1973 (CAFRA) instituted for similar purposes a permit process and a coastal planning process for the management of selected land uses within a designated coastal area. New Jersey's Office of Coastal Zone Management within the Division of Marine Services of the Department of Environmental Protection was created in response to this legislation, and is responsible for developing a management strategy for New Jersey's coastal zone.

A State coastal zone management program or strategy must meet several procedural and substantive standards required under Federal law. These statutory requirements have been grouped into seven basic elements:

(1) The identification of the State's coastal zone boundary;

(2) The definition of permissable land and water uses, and of guidelines for the definition of priorities among these uses;

(3) The inventory and designation of geographic areas of particular concern;

(4) The development of programs for continuing public and intergovernmental involvement in the management of the coastal zone;

(5) The incorporation of national interests in the State's management program;

(6) The description of the organizational structure proposed for the administration of the State's management program; and

(7) The identification of existing and proposed State authorities for the control of coastal land and water uses.

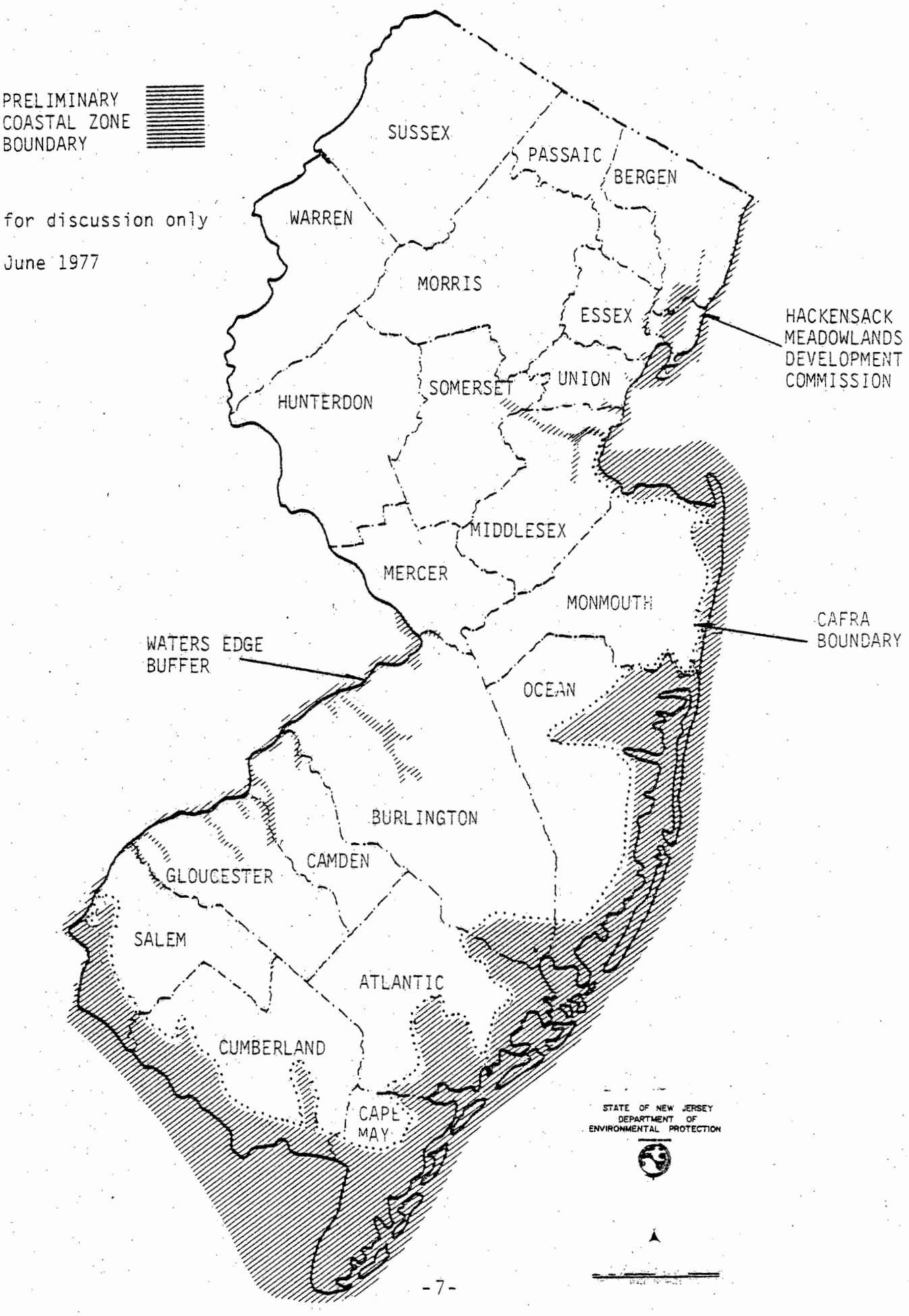
These elements have in turn been grouped into three major elements within New Jersey's coastal zone management strategy: (1) the definition of an administrative boundary for the coastal zone,

(2) the institution of a planning process to formulate coastal management policies for this zone, and (3) the development of a management system through which these policies may be implemented. The boundary, planning, and management processes are designed to identify areas of environmental impact and to protect these areas from unwise exploitation, while encouraging appropriate coastal development in less environmentally sensitive areas.

The principles of coastal zone management are set by the Federal Coastal Zone Management Act and by CAFRA. The policy of the Federal Act is to "preserve, protect, develop, and, where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations (and) ... to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and aesthetic values, as well as to needs for economic development ..." (Coastal Zone Management Act of 1972, P.L. 92-583, Sec. 303 a, b). Similarly, the CAFRA statute states that "all of the coastal area should be dedicated to those kinds of land uses which promote the public health, safety, and welfare, protect public and private property, and are reasonably consistent with the natural laws governing the physical, chemical and biological environment of the coastal area ... and (the State) wishes to encourage the development of compatible land uses in order to improve the overall economic position of the inhabitants of the area within the framework of a comprehensive environmental design strategy which preserves the most economically sensitive and fragile area from inappropriate development and provides adequate environmental safeguards for the construction of any facilities in the coastal area." (CAFRA, N.J.S.A. 13:19-1 et seq., Sec. 2)

As the responsibility of NJDEP/OCZM is similar under both CAFRA and the Federal Coastal Zone Management Act, the same planning process is used for both programs, and common planning products will be generated. However, the boundary and administrative processes of the respective acts are different. CAFRA establishes both its administrative boundary and its implementation procedure within the legislation. The Federal Coastal Zone Management Act, however, establishes only general guidelines for each of these program elements, leaving to State initiative the task of devising a program to meet the State's particular needs.

The boundary process, for example, as defined by the Federal regulations and the "threshold papers" of the Federal Office of Coastal Zone Management of the National Oceanic and Atmospheric Administration, requires each state participating in the program to delineate a coastal zone which must include, at a minimum, the territorial sea, coastal waters, transitional and intertidal areas, salt marshes and wetlands, beaches, and upland areas "inland from the shorelines only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on coastal waters". The definitions of key terms such as "direct", "significant", and "transitional," and the statements of national policy on the coastal zone in the Federal law, are at the heart of the


PRELIMINARY
COASTAL ZONE
BOUNDARY
for discussion only
June 1977
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HACKENSACK
MEADOWLANDS
DEVELOPMENT
COMMISSION
HUNTERDON
SOMERSET
UNION
MIDDLESEX
MERCER
MONMOUTH
CAFRA
BOUNDARY
WATERS EDGE
BUFFER
OCEAN
BURLINGTON
CAMDEN
GLOUCESTER
SALEM
ATLANTIC
CUMBERLAND
CAPE
MAY
STATE OF NEW JERSEY
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ENVIRONMENTAL PROTECTION

process of identifying the coastal zone boundary. The Federal requirements necessitate that New Jersey's coastal zone exceed the geographic area covered under CAFRA. Figure 1 presents the coastal zone boundary currently being considered by NJDEP/OCZM. The NJDEP/OCZM working paper, Alternative Boundaries for New Jersey's Coastal Zone, discusses these considerations in detail.

The implementation process under the Federal Act will not only embrace the permit process initiated under CAFRA, but will supply a common set of policies for the administration of the Wetlands Act and the Riparian Statutes, and will promote the coordination of policies of the New Jersey Coastal Zone Management program with those complementary programs in other institutions and agencies, including the Areawide Water Quality Management programs. Federal agencies and programs will, for the most part, be required to comply with the provisions of New Jersey's Coastal Zone Management Program under the "Federal Consistency" clause of the Federal Coastal Zone Management Act (Section 307).

The NJDEP/OCZM planning process, which is involved in the formulation of policies for the management of New Jersey's coastal zone, will now be discussed in detail.

The Coastal Planning Process

New Jersey's coastal zone management strategy will be based on a systematic planning process designed to provide an analytical basis from which to define increasingly specific coastal zone management policies. These policies are in turn to be used as principles by which to guide key NJDEP decisions on individual State permit applications, funding priorities, Federal permit review, and guidance to local governments; and through which to prepare specific performance standards for sites and activities. NJDEP/OCZM actively solicits and incorporates public involvement in the planning process, including the nomination of geographic areas of particular concern and the identification of issues of concern to the coastal region.

New Jersey's coastal planning process was initiated with analyses designed to identify and evaluate the primary issues and problems of New Jersey's coastal zone and to propose appropriate alternative management policies for discussion. Subsequently, the environmental and socioeconomic impacts that would result from locating various land and water uses upon various land and water types are analyzed. From this information, models are constructed describing the relationships of these uses to environmental and socioeconomic impacts. These models are tested against NJDEP/OCZM's coastal zone goals and objectives to establish constraints upon these uses. These constraints are then compared with the opportunities offered for specific uses at different locations from which specific management policies are derived.

Coastal zone management policies are derived throughout the coastal planning process. From the analysis and synthesis of use/location combinations in the coastal zone, judgements are made as to the suitability of these various combinations. Lists of high and low priority uses are to be prepared for each coastal land and water type and set of location and opportunity factors. Design, conservation, and management techniques related to potential environmental impacts will be formulated for each use/location combination in the coastal zone, and these techniques will focus upon performance standards directed toward the site preparation, construction, and operation activities of these uses.

The coastal planning process employed by NJDEP/OCZM will be described in detail in the Coastal Management Strategy, to be formally released by this office by the Fall of 1977 and in the Pilot Study of Lower Cape May County. The elements of the process as listed below, are synopsized on the following pages:

ANALYSIS
- Initial Analysis
- Environmental Impact Analysis
- Socioeconomic Impact Analysis
- Opportunity Analysis
- Value Analysis

SYNTHESIS
- Constraint Synthesis
- Opportunity-Constraint Synthesis
- Conflict Resolution Among Competing Uses

ANALYSIS

Initial Analysis

New Jersey's coastal planning process began with the collection of information on coastal resources and with the evaluation of the quality of these resoures. These initial analyses generated the NJDEP/OCZM Inventory of the New Jersey Coastal Area, 1975, and the Alternatives for the Coast, 1976, and the Issue and Policy Alternative papers, which identified those problems and issues to which New Jersey's Coastal Zone Management Program should be directed. Issue and policy alternative papers were prepared for the following subject areas:

Surface and Coastal Water Resources
Estuarine and Wetland Resources
Sand Movement and the Shoreline
Ocean Resources: Mineral
Ocean Resources: Physical
Ocean Resources: Living
Groundwater Quality and Quality
Flooding
Upland Mineral Resources
Upland Wildlife Habitats
Upland Living Resources: Endangered, Threatened, & Rare Wildlife
Upland Living Resources: Endangered and Rare Vegetation
Agriculture
Cultural Resources
Solid Waste
Transportation

Environmental Impact Analysis

The introduction of a new land or water use into a location involves a set of activities related to site preparation, construction, and operation. Some or all of these activities cause measurable changes in the natural and built environments of the location. The nature of the impacting activities, as well as the nature and extent of environmental change, depend upon both the use and the location. For example, the impacting activities of housing and the changes caused will be different in a marsh than in a wooded upland location.

In order to perform the environmental impact analysis, both land and water uses, as well as activities and land and water types, must be classified. Some forty land and water use classifications are currently being used in this analysis, and these are categorized under (1) housing, (2) commercial, (3) services, (4) industrial, (5) harvesting, (6) recreation, and (7) infrastructure. Thirty-two water types, twenty-seven water's edge types, and seven land types have been classified. Thirty-seven activities involving site preparation, construction, and operations which are

unique to each use/location combination have been identified. Seventy-eight environmental impacts of use activities have been specified.

The actual analysis involves the use of matrices which are designed to determine not only causal relationships between uses, activities, and impacts but a quantification or quality ranking of impact levels as well. A potential land or water use is assigned a set of activities for each potentially impacted land or water type (an impact matrix will exist for each land and water type present in New Jersey's coastal zone). These activities are matrixed against impacts, and finally impacts are matrixed against impacts to determine chains of causality and qualititative degrees of environmental impact, decreasing in significance with each pass through the matrix. In only establishing rankings of impacts, this technique is qualitative in nature. Were the specific impacts able to be quantified as they passed through the matrix, a comprehensive and quantitative environmental impact assessment model could be developed. This approach readily lends itself to computerization, which could be a future NJDEP objective.

The bulk of this analytical work, using the methodology developed by NJDEP/OCZM, will be performed by Jack McCormick and Associates, Inc., under the Estuarine Study contracted for by NJDEP/OCZM.

Socioeconomic Impact Analysis

The introduction of a new use into a new location may well result in beneficial or adverse effects on the economic and social structure of the region. These effects are the subject of the socioeconomic impact analysis. The nature and extent of the impacts depend both upon the introduced use and upon the structure of the region. For example, a region with an economy based largely on seasonal tourism may find its economic base affected by the introduction of an onshore "OCS" support base.

To perform this analysis, land and water uses are again classified, but now according to the socioeconomic changes they cause within a region. This categorization is similar to that of the environmental impact analysis.

These uses are matched with the characteristics of particular socioeconomic regions within the coastal zone. These regions are characterized by factors leading to the determination of the economic base, a social assessment, and the "unit dynamics" of the region. The economic base is determined by such factors as industry and commerce, location, revenue, employment practices, and industrial-commercial complexes. The social assessment is determined by settlement patterns, income, occupation, age/sex population cohorts, education, ethnic backgrounds, interest groups, and the social infrastructure. The unit dynamics include studies of trends in housing, conservation, industrial and commercial activities, recreation, and transportation.

A preliminary list of eighty-one potential socioeconomic impacts has been compiled, including changes in natural hazards, site specific resources, energy facilities, recreational facilities, commercial fishing, groundwater supply, community services, social organizations, community structure, housing supplies, industrial activity, infrastructure, access, environmental degradation, fiscal budget, personal incomes, economic development, resource distribution, and social pathology. These impacts upon socioeconomic regions are arrayed against potential land and water uses in a manner similar to that of the environmental impact analysis.

Opportunity Analysis

Certain elements of the built and natural environment are required for the successful construction and operation of specified uses. For example, access to roads and services, access to the view of water, and access to shops and schools are required or desirable for the successful construction and operation of residential land uses. Opportunity analysis seeks to identify the most desirable places for specified uses, based on the resource demands of the use and the availability of resources at a particular location.

Again, land and water uses have been classified for this analysis. However, different uses, based upon resource demands, were aggregated. A list of twenty-seven "opportunity factors", which affect the degree of opportunity for potential uses, has been compiled. In the analysis, the ranges of each factor that represents significant degrees of opportunity are specified, and the cost penalties or bonuses typically associated with each category of location factor are estimated. By specifying which location factors are required by a use, locations offering the most bonus to the most penalty, or the most to the least opportunity, respectively, can be identified.

Value Analysis

The value analysis incorporates the preliminary goals and objectives derived from the initial analysis and those goals and objectives contributed through public and institutional feedback into the coastal planning process. These goals and objectives are divided into those which are totally environmental, based upon a scientific understanding of natural processes, and those which are a combination of social and economic objectives.

These economic and social values held toward uses, locations, and processes, and the extent to which they are prioritized, establish explicit or implicit thresholds of extent of change in coastal locations which is acceptable before these values are offended. This planning process seeks to identify these thresholds.

SYNTHESIS

Constraint Synthesis

The impact and value bases prepared during the impact and value analysis are compared as a first step under constraint synthesis. The changes caused by the impacting activities of uses are compared with the thresholds of acceptable change. Of course, the parameters selected are the same for both analyses. Acceptability of impact is indicated for each use/location combination by comparing the resulting level of impact with the established thresholds. The constraint synthesis also identifies and notes individual impact rankings that exceed the maximum threshold of acceptability.

Coastal policies formulated from this synthesis will reflect the combinations of all impacts of various use/location combinations and their associated values.

Opportunity-Constraint Synthesis

The opportunity analysis and a constraint synthesis produce two rankings for each use/location combination. The first represents the degree of opportunity offered to the use by the location. The second presents the degree of constraint to the use supplied by the values held toward the location and the extent of the impacts of that use.

The next steps in the synthesis involve the combination of these two results to produce judgemental "suitability rankings." A general principle for deciding on suitability is that the suitability of locations for uses should be high where opportunity is high, to the extent that this is possible without unacceptable environmental degradation or unacceptable interference with neighboring uses, either existing or proposed. The problem, of course, is to reach a consensus, or at least an understanding, on what is acceptable.

Exceptions to this general principle may occur if high opportunity areas for essential uses of regional benefit or national interests are scarce or non-existent in high constraint areas. In selected locations, impacts above the established thresholds may be acceptable under these unusual circumstances.

Conflict Resolutions Among Competing Uses

Some locations may be of equally high suitability for several uses. In these cases, the competing relationship between uses must be analyzed.

First, the compatability of uses is analyzed. Each of the uses of high potential suitability is compared with each of the others, and with each of the existing adjacent uses in the location. For example, if two different uses were proposed in a given coastal

location, the minimum size of a flat vegetated buffer may have to be determined to allow both uses to operate optimally. For some sets of uses, such as forestry and low intensity recreation, the answer may be "zero", implying that these uses could coexist in the same location. For other uses, such as heavy industry and housing, such a buffer may have to be quite large. Those uses that are compatible are combined into sets of uses. The compatibility of these sets with other uses and sets of uses is also established.

A second set of conflicts arises where a given location affords certain uses which are mutally exclusive, as of high demand and high intensity of use against a high sensitivity toward any use. Preferences are then assigned to uses and sets of uses that are in themselves of equally high suitability for a location but which are incompatible with each other.

Ultimately, a listing of high and low combinations are developed which, in conjunction with the performance standards developed in earlier syntheses and analyses, shall be used to guide administrative decisions concerning the future of New Jersey's coastal zone.

AREAWIDE WATER QUALITY MANAGEMENT IN NEW JERSEY

Principles of Areawide Planning

Areawide Water Quality Management, alternatively known as Areawide Waste Treatment Management Planning or "208" Planning, is one of the management programs authorized under the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500). The Act, regarded as one of the most comprehensive pieces of environmental legislation ever enacted, redirected water quality management efforts from a case-by-case review of pollution sources to a complete series of programs incorporating processes of both planning and regulation. Four major planning programs provided by the Act are river basin planning, waste treatment facilities planning, areawide water quality management planning, and comprehensive river basin planning.

Basin plans, as established under Section 303 of the Act, are management plans developed by the States for individual watersheds within their boundaries. These plans are primarily intended as a basic management guide for short-range (5 year) water quality management. Basin plans constitute the framework for actions of local significance, such as grant awards and the identification of problem areas requiring more intensive planning. More broadly, they constitute an expression of State policy, procedures, and policy for water quality management.

The first round of basin plans are designed to act primarily through the abatement control program (the National Pollutant Discharge Elimination System) established for point sources under Section 402 of the Act. These initial plans must establish effluent limitations and compliance schedules or target abatement dates for point sources which must lead to the achievement of existing water quality goals; they must identify municipal waste treatment facilities needs; they must direct facility construction grant awards on an abatement priority basis to lead to the implementation of the aforementioned limitations and schedules; and they must identify and schedule such further needed actions as local planning endeavors and additional data collection. These basin plans must be reviewed periodically by the State as additional information is obtained, initial objectives are accomplished, other planning processes are completed, and available resources and capabilities increase. Such revisions to the basin plans must consider where changes in water quality have occurred and respond by expanding or strengthening methods and procedures to control point and, where appropriate, non-point sources of water pollution.

Waste treatment facilities plans, established in accordance with Section 201 of the Act, are designed to provide for the orderly development and submission of applications for Federal grants to construct or modify public wastewater treatment facilities. Guidelines established for facilities planning require applicants (municipal or other public utility authorities) to systematically evaluate

alternative treatment processes or other courses of action with respect to cost-effectiveness and environmental impacts. These plans, instituted on the local level and submitted as a part of the grant application, are reviewed and approved in accordance with the provisions of the basin and Areawide Water Quality Management plans.

Areawide Water Quality Management plans, prepared pursuant to Section 208 of the Act (and thus known as "208" plans), provide an approach of comprehensive planning and regulation in areas having substantial and complex water quality control problems. These plans are prepared on an areawide basis throughout each State. Areawide planning, performed either by the State or by areawide agencies designated under the provisions of the Act, is directed toward the formulation of a water quality management program to cover all aspects of water quality management through the control of municipal and industrial wastewaters, storm sewer runoff, and non-point pollution, and emphasizes non-structural, as well as structural, controls and programs for water pollution abatement. The planning process itself concerns all point, intermittent point, and nonpoint sources of pollution, as well as the interactions of water quality with land and water uses, in the development of a comprehensive land use and water quality management plan by which a waste treatment management program may be produced. Section 208 provides the primary authority under Federal law to specifically plan for the control non-point sources of water pollution; the Federal Coastal Zone Management Act also provides such authority, but it is specifically subordinated to the requirements of the Water Pollution Control Act, as amended.

Areawide planning, like basinwide (303) planning, is intended to be a continuous process, to be updated and amended in accordance with the needs specified in the basin plans. 201 facilities plans must, in turn, be consistent with the 208 plans.

The highest level of planning mandated by the Act is the comprehensive river basin plan, or "Level B" plan, authorized under Section 209 and described in the Water Resources Planning Act of 1965 (Pub. L. 89-80). Level B plans, prepared under the supervision of the Water Resources Council of the U.S. Department of the Interior, are interdisciplinary plans which relate water quality and quantity with trends in land and water use, population and economic patterns, capital projects authorized by the government concerning water resources, and other factors involved in the preparation of a comprehensive water resources management plan designed to address complex long range problems. These plans, to be completed by 1980, are intended to constitute the basis for the subsequent basin and areawide plans, previously described, which are supervised by the U.S. Environmental Protection Agency.

All plans under the Act must be updated annually under the provisions of the State continuing planning process mandated in Section 106 of the Act. Similar to Coastal Zone Management, the States are obligated to provide the implementation mechanisms (legal

and institutional) for the areawide and other water resources management programs authorized under the Act. New Jersey provides the institutional mechanisms through the Division of Water Resources of the Department of Environmental Protection, and the legal authority under the recently enacted Water Pollution Control Act (C.74, L.77) and the Water Quality Planning Act (C.75, L.77).

Under the regulations published in 40 CFR Part 131, as amended, Water Quality Management Plans must be oriented toward implementation and management. This is done through both the public involvement and intergovernmental coordination provisions of the 208 program and through the management provisions of the Section 303 basin plans. For areas in which the State has the responsibility for areawide planning, these plans, referred to as Phase II water quality management plans (the basin plans constitute Phase I), shall combine the requirements of both Sections 208 and 303 into one program. Designated areawide water quality management agencies are not responsible for those requirements within the purview of Section 303 basin planning.

A final State Water Quality Management Program must meet the following goals:

(1) Identifying Problems:

Assessing existing water quality, applicable water quality standards, and point and nonpoint sources of pollution; identifying constraints on the Plan.

(2) Assessing Needs and Establishing Priorities:

Assessing water quality and abatement needs, coordinating with ongoing construction grant award, National Pollution Discharge Elimination System (NPDES), and other programs, and establishing priorities (considering existing construction grant, NPDES and other such requirements).

(3) Scheduling Actions:

Setting forth compliance schedules, considering all existing schedules issued pursuant to construction grant awards and NPDES permits, and target abatement dates indicating necessary Federal, State, and local actions.

(4) Defining Regulatory Programs:

Describing existing State/local regulatory programs and defining these necessary additional regulatory programs designed to achieve water quality standards and goals.

(5) Defining Management Agency Responsibilities:

Identifying management agencies, including implementation, regulatory, and operational agencies, and setting forth specific responsibilities to carry out actions required within the approved planning area, assuring that water quality objectives are made a part of the land management process.

(6) Coordinating Planning and Management:

Coordinating developmental planning and management related to water quality in order to attain the objectives of the Act.

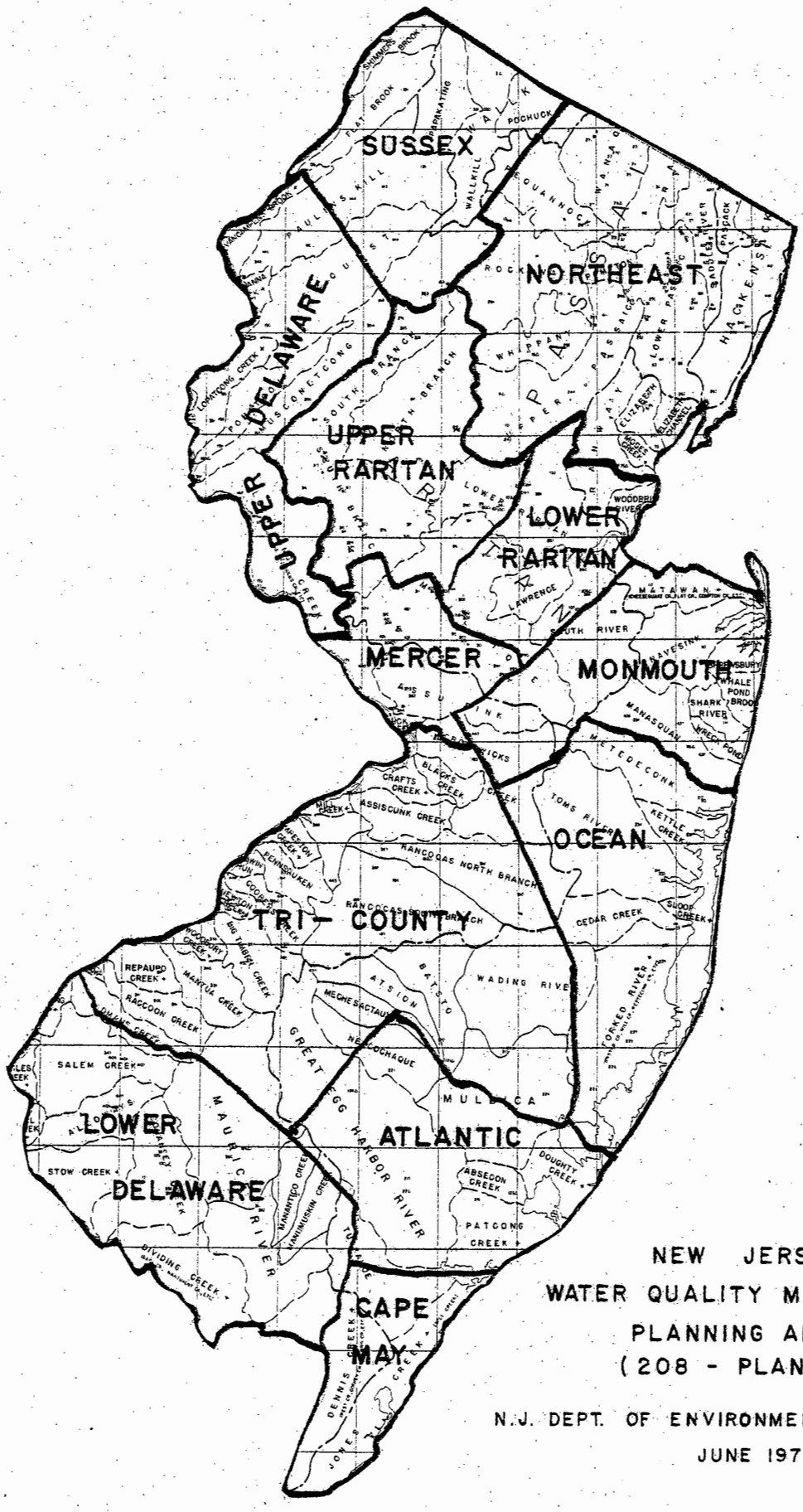
Due to the limits of financial and manpower resources in the initial areawide planning programs, New Jersey Areawide Water Quality Management programs have directed themselves to a problem-solving approach. In principle, specific water quality goals are set through both the public participation and basin planning processes. These goals are prioritized, then weighed against the legal, financial, and institutional obstacles toward their realization to arrive at a final ranking by which specific problems (for which solutions are required to attain those goals) are addressed. Subsequent Areawide Water Quality Management Plans, through both Section 208 and through the State continuing planning process, are expected to address a more extensive set of problems at a more intensive level.

Areawide Water Quality Management planning in New Jersey occurs in twelve areas, seven of which have had their planning functions designated to local or regional planning agencies. The planning areas in the coastal region, as presented in Figure 2, are described below:

Northeast: The Northeast Water Quality Management Planning Area includes essentially all of Passaic, Bergen, Hudson, Essex, and Union Counties and portions of Morris and Somerset Counties which drain into the Passaic River Basin. The State (NJDEP/DWR) is the agency responsible for areawide planning in the Northeast.

This planning area is the mostly densely populated, as well as the most heavily developed, part of New Jersey. A primary objective of the Northeast Areawide Plan will be an evaluation of the extent and significance of toxic and hazardous materials in the waterways and the development of management strategies to resolve associated problems identified in this evaluation. For this reason, a large part of the program will concentrate on developing a water quality sampling program, done in coordination with other NJDEP and USEPA programs concerned with toxic substances.

Other objectives will include an assessment of the water quality impacts of nonpoint and intermittent point sources of pollution, the development of pollution abatement measures, the



NEW JERSEY
WATER QUALITY MANAGEMENT
PLANNING AREAS
(208 - PLANNING)

N.J. DEPT. OF ENVIRONMENTAL PROTECTION
JUNE 1977

study of key surface water impoundments to assess their eutrophication potential and to define the necessary point and non-point source control measures needed to control eutrophication, and the development of a groundwater management program for the water-short Northeast Area.

Middlesex County: The Middlesex 208 Planning Area consists of Middlesex County and certain contiguous watersheds within the Middlesex County Sewerage Authority Service area. The Middlesex County Planning Board is the designated agency for the Areawide Water Quality Management program.

Middlesex County is a rapidly developing urban/industrial area with substantial water quality concerns. Nearly the entire area is composed of actual and potential potable watersheds, and urban runoff and non-point sources contribute the major portion of pollution loads to surface waters in the area. Also, the area is underlain by important groundwater aquifers, some of which are already contaminated. Some of the goals of the program are to insure and protect the adequate quality and capacity of groundwater supplies within the study area; to improve the water quality of the Millstone and Raritan River systems; to improve and maintain the area's major lakes, ponds, and impoundments; and to protect the quality of streams in the area.

Monmouth County: The State (NJDEP/DWR) is responsible for Areawide Water Quality Management in Monmouth County, with the exception of that portion of the County in the Metedeconk River Basin.

Monmouth County has been experiencing a large population increase over the past few years, largely due to migration from the more heavily developed counties to the north as well as by natural increase. Preservation of potable surface waters has been indicated as the main objective for this area. Therefore, most of the program will concentrate on additional sampling that may be required, field surveys, and surface water quality analyses. Other objectives which may be addressed include groundwater quality management, preservation of shellfishing waters, and projection of future non-point sources related to land development.

Ocean County: The Ocean County Water Quality Management Area includes Ocean County and that part of Monmouth County within the Metedeconk River Basin. The Ocean County Board of Chosen Freeholders is the designated areawide water quality management agency. An office of Water Quality Management Planning, with the cooperation of other county agencies, carries out the central responsibilities of Areawide Water Quality Management in Ocean County.

Ocean County is an area of extremely rapid growth, transforming itself from a rural area of seasonal importance to an exurban area of medium density. Ocean County also possesses extensive tracts of lands within the Pine Barrens. The primary goals of the Ocean County program are to preserve and protect the area's high quality

water resources and environmentally sensitive areas for the resort and tourist industry and to determine the water quality constraints on future development.

Atlantic County: The County of Atlantic constitutes the management area, and the Atlantic County 208 Planning Agency, through the Atlantic County Division of Planning, is the designated agency for Areawide Water Quality Management.

Atlantic County possesses substantial and unique natural resources in need of suitable management, such as its groundwater aquifers, wetlands, estuaries, shellfish harvesting areas, and the wild and scenic Mullica River. Its population continues to grow, and industrial growth has been double the State's average. Salt water intrusion is an extensive problem in Atlantic County aquifers. The goals of the program are to preserve the area's existing high quality natural resources and to restore degraded resources, such as natural shellfishing areas.

Cape May County: The Cape May County Water Quality Management Area is the county in its entirety, and the Cape May County Planning Board, through the Cape May County Board of Chosen Freeholders, is the designated agency for the program.

Cape May County is largely semi-rural, with residential and resort development concentrated on the ocean and bay shores and the inland portions devoted to agriculture, sparse residential, and open space such as woodlands and marsh. The primary goals of areawide planning in Cape May County are to protect the area's groundwater resources and to preserve those surface waters (particularly shellfishing waters) of high quality.

Lower Delaware: The Lower Delaware Water Quality Management Area is composed of Salem and Cumberland Counties, and the State (NJDEP/DWR) is the agency responsible for Areawide Water Quality Management planning in this area.

The Lower Delaware region is largely rural, and is one of New Jersey's primary agricultural areas. Shellfishing areas near the Delaware Bay shores are also of great importance of the region. Due to the dependence of this region on high quality surface and groundwaters, Areawide Water Quality Management in the Lower Delaware region will focus on the development of a groundwater management plan and on the presentation of high quality surface waters, especially in shellfishing areas. The management of non-point pollution sources, lakes, and reservoirs will be subsequently addressed. The major endeavor of the program is to establish an extensive data base for water quality management in the Lower Delaware region.

Tri-County: The Tri-County Water Quality Management Area consists of Burlington, Camden, and Gloucester Counties, and the Delaware Valley Regional Planning Commission is the designated agency for the area.

The Tri-County area ranges from heavily urbanized to rural agricultural to wilderness, and the existing and potential water quality issues in the area are equally diverse. The major water quality issues addressed are urban and suburban runoff (including storm and combined storm/sanitary sewerage), landfill and septic system leachates and their impacts on groundwater resources, and the protection of highly valued surface water resources in the Mullica and Great Egg Harbor River Basin.

Mercer County: The Mercer County Water Quality Management Area consists of the County itself, and the Delaware Valley Regional Planning Commission is the designated agency for this area.

Mercer County is a developing area ranging from highly urbanized to agricultural in character. The chief issues to be faced by Areawide Water Quality Management planning in Mercer County are the control of pollution arising from new suburban construction, urban and suburban runoff (including storm and combined storm/sanitary sewerage), the protection of groundwater supplies from inadequate septic systems, the management of point sources of pollution, and the protection of surface waters in prime agricultural lands and aquifer recharge areas.

The Upper Delaware, Upper Raritan, and Sussex County Water Quality Management Areas are considered to be outside of New Jersey's coastal planning region.

The initial Areawide Water Quality Management Plan for each area must be completed within a two-year period. The Middlesex County Areawide Water Quality Management Plan is expected to be submitted to the Governor for approval by October 1977. The Mercer County and Tri-County plans must be submitted by January 1978. The Ocean County plan is to be completed by April 1978. The plans for the remaining areas must be submitted by January 1979. Further details concerning program schedules and outputs may be found in the section of this paper describing the project milestones and timetables.

The Areawide Water Quality Planning Process

The U.S. Environmental Protection Agency has not prescribed a formal methodology for Areawide Water Quality Management planning. Individual agencies responsible for the preparation of areawide plans have generally been free to develop their own planning processes. However, the range of approaches is far more restricted than the Coastal Zone Management program. The plan, which would satisfy the requirements of Section 208 for designated areawide agencies and of Sections 208 and 303 for State planning areas, must, at a minimum, address the following topics:

(1) Planning Boundaries. The boundaries of areas designated for 208 planning must account for reasonable urban/industrial growth and/or other factors, such as inherent difficulty or cost, which may affect the planning for or implementation of an integrated waste treatment management program. This boundary process includes the analysis of both environmental and socioeconomic principles and trends. Area boundaries have been established under the 208 area designation process.

(2) Water quality assessment and segment classification. Existing and potential water quality problems must be described in terms of existing or potential violations of water quality standards, and types and degrees of such problems are to be described along with those point and non-point sources causing them. Water quality segments are to be formed based upon instream measurements, including the surrounding land areas which may contribute to water quality degradation, and are to be classified with respect to limitations on desired uses by water quality or effluent standards (as defined by the regulations).

(3) Inventories and projections. An inventory of existing and projected municipal and industrial pollution sources, and a priority listing of municipal source problems, must be compiled. Existing and projected land uses must be identified. Demographic and economic growth projections relevant to water quality management must be presented for at least a 20-year period.

(4) Non-point source assessment.

(5) Water quality standards, including proposed revisions.

(6) Municipal waste treatment systems needs. This would be assessed for 5-year stages over at least a 20-year period, essentially according to the approaches to facilities planning specified pursuant to Section 201 of the Act.

(7) Industrial waste treatment systems needs.

(8) Non-point source control needs. Pursuant to the non-point source assessment, the non-point source control measures applied to the date of the plan, the period of time required to achieve the desired level of control, the proposed regulatory programs, the management agencies needed to achieve the controls, the costs over 5-year increments by agency and activity to achieve the desired controls, and a description of the proposed actions necessary to achieve these controls. The types of non-point sources and problems to be addressed include agricultural and silvicultural runoff, seepage from mines, subsurface waste disposal areas, construction sites, salt-water intrusion, and modifications to surface or groundwater hydrology due to dams, levees, channels, and flow diversion facilities.

(9) Residual waste control needs, land disposal needs.

(10) Urban and industrial stormwater systems needs.

(11) Target abatement dates.

(12) Regulatory programs.

(13) Management Agencies.

(14) Environmental, social and economic impact assessment.

In addition, the plans for State management areas operating under the requirements of both Section 208 and Section 303 (Phase II planning) must include an assignment of total maximum daily pollution loads and point source load alloctions for each water quality segment identified.

The level of analytical detail required for each of these topics may vary with respect to the nature and the extent of the water quality problems encountered in the area. Consequently, the planning process of specific areas in response to this program are all somewhat different in emphasis.

AREAS OF POTENTIAL PROGRAM CONFLICT

The greatest sources of potential conflict between the Coastal Zone Management and Areawide Water Quality Management Programs are the fundamental goals of the programs and the management strategies and institutions to be established to achieve these goals.

Areawide Water Quality Management and its basin planning component are designed to respond to legislative mandates to achieve levels of water quality that would permit certain specified water uses. Areawide Water Quality Management must thus be geared to attain specific water quality goals.

Water quality, however, is only one factor, albeit one of the most important, in the management of the coastal zone. As Areawide Water Quality Management is a program of environmental protection, Coastal Zone Management is a program of resource management which promotes, where appropriate, as well as discourages, economic and community development in the coastal region. Areawide Water Quality Management is not expected to plan comprehensively until after 1980, when the comprehensive river basin plans, authorized under Section 209 for the development of water resources in the context of environmental and socioeconomic conditions, become integrated as guides for areawide water quality planning. However, some designated agencies, such as Middlesex County, are, in fact, incorporating the Areawide Water Quality Management Program into their currently established comprehensive planning programs.

The broader goals of Coastal Zone Management in the interim may, therefore, result in sets of policies not concurrent with those of the Areawide Quality Management programs. These differences may well be justified, but it should be up to the Office of Coastal Zone Management, responding to the potentially broader legislative mandate, to explain in detail the reasons for those priorities which may contrast with those of a rational water quality management program. A suggested approach to interagency coordination is for the Office of Coastal Zone Management to provide the perspectives of coastal planning for the areawide planning agencies in the New Jersey Coastal Zone, and for the Areawide Water Quality Management agencies to make readily available to NJDEP/OCZM the guidance and technical expertise necessary for the Coastal Zone Management program to adequately assess the constraints and opportunities provided by water quality considerations in the coastal region as these respective programs develop.

The second major source of conflict may be the structure of institutions set up to the implement the respective management programs. New Jersey's Coastal Zone Management Program has most, if not all, of its management and regulatory institutions already in place, whereas much of the institutional authority promised to the State and the Areawide Water Quality Management Programs in the New Jersey Water Pollution Control Act of 1977 has yet to be established.

It is essential that the regulatory agencies established under these programs work cooperatively, and consider the management strategies and responsibilities of one another in the decision making process, in order to assure the effecive management of New Jersey's water resources in the coastal zone and to avoid undue hardship on those subject to the regulatory process.

Further areas of potential conflicts between programs may develop as the programs become increasingly specific in their management efforts. Time factors, as presented later in this report, tend to complicate and hamper effective and appropriate interagency coordination. It is the hope of this undertaking to stimulate dialogues between agencies of these programs directed toward the identification of specific areas and toward the resolution of these conflicts in an effective and timely manner. Further conflicts may be avoided by engaging in the opportunities for interagency coordination presented in the following section.

OPPORTUNITIES FOR INTERAGENCY COORDINATION

Interagency coordination is the most effective way to resolve the potential program conflicts mentioned above. As stated at the outset of this paper, many of the program elements of Coastal Zone Management and Areawide Water Quality Management relate to one another. Probably the most effective representation of these interrelationships, given the understanding of the principles and processes of the programs outlined above, is as a set of tables. Such tables, designed to facilitate interagency coordination by providing a readily utilizable guide to elements of the respective planning programs, is presented on the following pages.

Elements of the Areawide Water Quality Management Planning process were derived from the Project Control Plans, or Detailed Work Plans, of the individual areawide planning agencies. As not all of these plans were consistent in the formulation of work elements, either with those specified earlier in the description of the areawide water quality planning process or among themselves, project elements were grouped under the following categories:

Project Management

To administer and coordinate individual project tasks, develop program plans, and organize staff functions and data accessibiity.

Water Quality Analysis

To examine existing and imminent surface water quality problems.

Point Source Controls

To inventory all known significant point sources and to develop suitable alternative plans for the management of point sources.

Non-Point and Intermittent Point Source Controls

To identify non-point and intermittent point sources of water pollution and their impacts on water quality in the project area, to establish priorities for management of these sources, and to develop alternative management strategies for these sources.

Groundwater Quality Management

To determine the extent of existing and potential groundwater pollution in the study area, and to assess and develop strategies and regulations to protect groundwater resources.

Land Use Considerations

To identify and protect land use and population trends relevant to water quality management, to identify environmentally sensitive areas, and to examine alternative land use controls.

Institutional, Legal, and Financial Implementation Strategy

To formulate acceptable alternative institutional arrangements that can be realistically established to implement provisions of the Areawide Water Quality Management Plan.

Plan Selection, Adoption, and Impact Assessment

To evaluate alternative management strategies as developed in the above categories, including public review, and to assess environmental, social, and economic impacts of the final draft plan prior to submission for approval.

The tables that follow list specific work tasks of the Areawide Water Quality Management programs that are relevant to elements of the planning process of the Coastal Zone Management Program. As these work task titles may not correspond exactly to those listed in the individual work plans of the areawide agencies, the code numbers of tasks approximating or embracing those functions, as listed in the individual work plans, are supplied as a cross-reference. These tables do not imply that work products addressed to specific work tasks will be prepared for each program; they do state, however, that information relevant to the tasks of the given planning process should be generated or utilized within the planning phases indicated.

In addition, the tables call attention to those areas in which information developed by NJDEP/OCZM may be of use to areawide water quality planning agencies, and vice versa, as flows of inputs and outputs from the respective planning processes.

NJDEP/OCZM invites corrections and/or revisions of these listings to allow this document to maintain its usefulness as a reference to facilitate interagency coordination and involvement.

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977 — INITIAL ANALYSIS

Areawide Water Quality Planning Work Tasks	Information Flows: AWQM to CZM	Information Flows: CZM to AWQM	Areawide Planning Work Task Codes: NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
PROJECT MANAGEMENT											
Development of Detailed Work Plan	X	X	1.1	-	1.1	1.4	1.3	1.4	1.1	1.01	1.01
Data Management	X	X	1.4	-	1.4	-	3--	1.3	1.4	1.03	1.03
WATER QUALITY ANALYSIS											
Water Quality Assessment	X	X	3.1	3.1 3.2 3.3	3.1	2.2 2.5	6.2 6.3	2.2 6.5	3.1	3.01 3.03	3.01 3.02
Design of Water Quality Sampling Program		X	3.2	3.6	3.2	2.3	6.4	2.3	3.2	3.04	3.04
Collection of Field Data	X	X	3.3	4--	3.3	2.3	-	2.3	3.3	3.05	3.05
Design of Long Range Monitoring Program		X	3.4	3.6	3.5	2.3	6.4	-	3.4	-	-
Revision of Surface Water Quality Standards		X	3.5	3.1	3.4	-	6.1 6.5 6.6	6.1 6.8	3.5	-	-
Review and Selection of Water Quality Models		X	-	3.7 5--	-	-	-	-	-	3.02	3.02
POINT SOURCE CONTROLS											
Sludge Disposal Assessment	X	X	4.6	-	4.6	-	-	-	4.6	-	-
Determination of Areas Suitable for On-Site Disposal Alternatives		X	4.7	-	4.7	3.2 3.3	-	-	4.7	-	-

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

INITIAL ANALYSIS (cont'd)

Areawide Water Quality Planning Work Tasks	Information Flows: AWQM to CZM	Information Flows: CZM to AWQM	Areawide Planning Work Task Codes: NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS											
Inventory of Existing NPS/IPS	X	X	5.1 5.2	6.1 6.2	5.1 5.2	5.1 5.2	5.1 5.2 6.3	2.5	5.1 5.2	5.01 5.02	5.01 5.02
Projection of NPS/IPS Pollution Loads and Related Water Quality Conditions.		X	-	6.3	-	-	-	-	-	-	-
GROUNDWATER QUALITY MANAGEMENT											
Description of Existing Quantity and Quality	X	X	6.1	8--	6.1	2.2	4.1 4.3 4.4	2.2	6.1	6.01 6.02	6.01 6.02
Inventory of Existing Controls	X	X	-	-	-	-	4.2	2.1	-	-	-
Development of Alternative Controls	X	X	-	-	-	-	4.2		-	6.04	6.04
Design of Long Range Monitoring Program		X	6.3	-	6.3	-	4.5	-	6.3	6.06	6.06
LAND USE CONSIDERATIONS											
Description of Existing Land Use, Population and Socioeconomic Characteristics	X	X	7.1	2.1 2.3 2.4	7.1	4.1 4.2	-	4.1	7.1	8.01 10.01	8.01 10.01
Development of Alternative Land Use Controls	X	X	7.5	-	7.5	4.4	-	-	7.5	8.07 10.01	8.07 10.01

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977 — INITIAL ANALYSIS (cont'd)

Areawide Water Quality Planning Work Tasks	Information Flows: AWQM to CZM	Information Flows: CZM to AWQM	Areawide Planning Work Task Codes: NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
INSTITUTIONAL, LEGAL, AND FINANCIAL IMPLEMENTATION STRATEGY											
Inventory of Existing Legal Authority, Financing, and Institutional Structures Directly and Indirectly Affecting Water Quality	X	X	8.1	9.5 9.6	8.1	6.1	-	5.1	8.1	7.01	7.01
Institutional, Legal, and Financial Analysis	X	X	8.2	9.5 9.6	8.2	6.2	-	5.2	8.2	7.02	7.02

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

ENVIRONMENTAL IMPACT ANALYSIS

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
PROJECT MANAGEMENT											
Data Management	X	X	1.4	--	1.4	--	3--	1.3	1.4	1.03 1.04 1.05	1.03 1.04 1.05
WATER QUALITY ANALYSIS											
Water Quality Assessment	X		3.1	3.1 3.2 3.3	3.1	2.2 2.5	6.2 6.3	2.2 6.5	3.1	3.01 3.03	3.01 3.02
Design of Water Quality Sampling Program		X	3.2	3.6	3.2	2.3	6.4	2.3	3.2	3.04	3.04
Collection of Field Data	X		3.3	4--	3.3	2.3	--	2.3	3.3	3.05	3.05
Design of Long Range Monitoring Program		X	3.4	3.6	3.5	2.3	6.4	--	3.4	----	----
Revision of Surface Water Quality Standards		X	3.5	3.1	3.4	--	6.1 6.5 6.6	6.1 6.8	3.5	----	----
Review of Selection of Water Quality Models		X	--	3.7 5--	--	--	--	--	--	3.02	3.02
POINT SOURCE CONTROLS											
Inventory of Point Sources	X		4.1	3.4	4.1	3.1	6.3	2.4	4.1	4.01	4.01
Allocation of Waste Loads		X	4.4	7--	4.4	3.3	6.5 6.6	6.5 6.6	4.4	4.03	4.03

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

ENVIRONMENTAL IMPACT ANALYSIS (cont'd)

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
POINT SOURCE CONTROLS (cont'd)											
Sludge Disposal Assessment	X	X	4.6	--	4.6	--	--	--	4.6	----	----
Determination of Areas Suitable for On-Site Disposal Alternatives		X	4.7	--	4.7	3.2 3.3	--	--	4.7	----	----
NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS											
Inventory of Existing NPS/IPS	X	X	5.1 5.2	6.1 6.2	5.1 5.2	5.1 5.2	5.1 5.3 6.3	2.5	5.1 5.2	5.01 5.02	5.01 5.02
Projection of NPS/IPS Pollution Loads and Related Water Quality Conditions		X	--	6.3	--	--	--	--	--	----	----
GROUNDWATER QUALITY MANAGEMENT											
Description of Existing Quantity and Quality	X	X	6.1	8--	6.1	2.2	4.1 4.3 4.4	2.2	6.1	6.01 6.02	6.01 6.02
Operate Sampling Program	X	X	6.2	--	6.2	--	--	2.3	6.2	----	----
LAND USE CONSIDERATIONS											
Description of Existing Land Use, Population, and Socioeconomic Characteristics	X	X	7.1	2.1 2.3 2.4	7.1	4.1 4.2	--	4.1	7.1	8.01 10.01	8.01 10.01

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION
June, 1977 SOCIOECONOMIC IMPACT ANALYSIS

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
PROJECT MANAGEMENT											
Data Management	X	X	1.4	-	1.4	-	3--	1.3	1.4	1.03 1.04 1.05	1.03 1.04 1.05
POINT SOURCE CONTROLS											
Delineation of Service Areas	X		4.2	9.1	4.2	3.1	-	3.1	4.2	-	-
Determination of Areas Suitable for On-Site Disposal Alternatives		X	4.7	-	4.7	3.2 3.3	-	-	4.7	-	-
LAND USE CONSIDERATIONS											
Description of Existing Land Use, Population, and Socioeconomic Characteristics	X	X	7.1	2.1 2.3 2.4	7.1	4.1 4.2	-	4.1	7.1	8.01 10.01	8.01 10.01
Projection of Future Land Use, Population, and Socioeconomic Characteristics	X		7.2	2.5	7.2	4.3	-	7.2	7.2	8.02 8.03 8.04 8.05 8.06 10.02	8.02 8.03 8.04 8.05 8.06 10.02

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

OPPORTUNITY ANALYSIS

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
PROJECT MANAGEMENT											
Data Management	X	X	1.4	–	1.4	–	3--	1.3	1.4	1.03 1.04 1.05	1.03 1.04 1.05
WATER QUALITY ANALYSIS											
Water Quality Assessment	X		3.1	3.1 3.2 3.3	3.1	2.2 2.5	6.2 6.3	2.2 6.5	3.1	3.01 3.03	3.01 3.02
Revision of Surface Water Quality Standards	X	X	3.5	3.1	3.4	–	6.1 6.5 6.6	6.1 6.8	3.5	–	–
POINT SOURCE CONTROLS											
Delineation of Service Areas	X		4.2	9.1	4.2	3.1	–	3.1	4.2	–	–
Allocation of Waste Loads	X		4.4	7--	4.4	3.3	6.5 6.6	6.5 6.6	4.4	4.03	4.03
Scheduling of Facility Hookups	X	–	–	–	–	–	6.5 6.6	3.1	–	–	–
Determination of Areas Suitable for On-Site Disposal Alternatives	X	X	4.7	–	4.7	3.2 3.3	–	–	4.7	–	–
GROUNDWATER QUALITY MANAGEMENT											
Description of Existing Quantity and Quality	X		6.1	8--	6.1	2.2	4.1 4.3 4.4	2.2	6.1	6.01 6.02	6.01 6.02

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION
June, 1977

VALUE ANALYSIS

Areawide Water Quality Planning Work Tasks	Information Flows: AWQM to CZM	Information Flows: CZM to AWQM	Areawide Planning Work Task Codes: NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
WATER QUALITY ANALYSIS											
Design of Water Quality Sampling Program		X	3.2	3.6	3.2	2.3	6.4	2.3	3.2	3.04	3.04
Design of Long Range Monitoring Program	X	X	3.4	3.6	3.5	2.3	6.4	-	3.4	-	-
Revision of Surface Water Quality Standards	X	X	3.5	3.1	3.4	-	6.1 6.5 6.6	6.1 6.8	3.5	-	-
Review and Selection of Water Quality Models		X	-	3.7 5-	-	-	-	-	-	3.02	3.02
POINT SOURCE CONTROLS											
Development of Alternative Point Source Control Plans		X	4.8	9.4	4.8	3.5 3.6	6.5 6.6	6.6	4.8	4.05 4.06	4.05 4.06
Delineation of Areas Suitable for On-Site Disposal Alternatives	X	X	4.7	-	4.7	3.2 3.3	-	-	4.7	-	-
NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS											
Ranking of NPS/IPS Problems	X	X	5.3	-	5.3	-	5.5	-	5.3	5.02	5.02
Development of Alternative Management Strategies		X	5.5	-	5.5	-	5.4 5.5 5.6 5.7	-	5.5	5.06 5.07 5.08	5.06 5.07 5.08

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

VALUE ANALYSIS (cont'd)

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
GROUNDWATER QUALITY MANAGEMENT											
Development of Alternative Controls		X	-	-	-	-	4.2	-	-	6.04	6.04
Design of Long Range Monitoring Program		X	6.3	-	6.3	-	4.5	-	6.3	6.06	6.06
Development of Groundwater Management Plans		X	6.4	9.3	6.4	-	4.6 4.7 4.8	-	6.4	6.04 6.05	6.04 6.05
LAND USE CONSIDERATIONS											
Projection of Future Land Use, Population, and Socioeconomic Characteristics	X	X	7.2	2.5	7.2	4.3	-	4.2	7.2	8.02 8.03 8.04 8.05 8.06 10.02	8.02 8.03 8.04 8.05 8.06 10.02
Delineation of Environmentally Sensitive Areas	X	X	7.3	2.4	7.3	2.4	-	2.6	7.3	-	-

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

CONSTRAINT SYNTHESIS

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERGER
WATER QUALITY ANALYSIS											
Design of Long Range Monitoring Programs		X	3.4	3.6	3.5	2.3	6.4	-	3.2	-	-
Revision of Surface Water Quality Standards	X	X	3.5	3.1	3.4	-	6.1 6.5 6.6	6.1 6.8	3.5	-	-
Calibrate and Verify Water Quality Models	X		-	-	-	-	-	-	-	3.06	3.06
POINT SOURCE CONTROLS											
Delineation of Service Areas	X		4.2	9.1	4.2	3.1	-	3.1	4.2	-	-
Development of Alternative Point Source Controls Plans		X	4.8	9.4	4.8	3.5 3.6	6.5 6.6	6.6	4.8	4.05 4.06	4.05 4.06
Determination of Design Parameters for New Facilities	X	X	-	-	-	-	6.5	3.2 3.3	-	-	-
Allocation of Waste Loads	X		4.4	7--	4.4	3.3	6.5 6.6	6.5 6.6	4.4	4.03	4.03
Scheduling of Facility Hookups	X	X	-	-	-	-	6.5 6.6	3.1	-	-	-
Determination of Areas Suitable for On-Site Disposal Alternatives		X	4.7	-	4.7	3.2 3.3	-	-	4.7	-	-

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

CONSTRAINT SYNTHESIS (cont'd)

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS											
Inventory Existing Alternative Controls	X		5.4	-	5.4	5.3	5.2	2.1	5.4	5.05	5.05
Projection of NPS/IPS Pollution Loads and Related Water Quality Conditions	X	X	-	6.3	-	-	-	-	-	-	-
Development of Alternative Management Strategies	X	X	5.5	-	5.5	-	5.4 5.5 5.6 5.7	-	5.5	5.06 5.07 5.08	5.06 5.07 5.08
GROUNDWATER QUALITY MANAGEMENT											
Description of Existing Quantity and Quality	X		6.1	8-	6.1	2.2	4.1 4.3 4.4	2.2	6.1	6.01 6.02	6.01 6.02
Inventory of Existing Controls	X						4.2	2.1			
Development of Alternative Controls		X	-	-	-	-	4.2	-	-	6.04	6.04
Development of Groundwater Management Plans	X	X	6.4	9.3	6.4	-	4.6 4.7 4.8	-	6.4	6.04 6.05	6.04 6.05

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977

CONSTRAINT SYNTHESIS (cont'd)

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
LAND USE CONSIDERATIONS											
Delineation of Environmentally Sensitive Areas	X	X	7.3	2.4	7.3	2.4	-	2.6	7.3	-	-
Description of Alternative Land Use Controls	X		7.5	-	7.5	4.4	-	-	7.5	8.07 10.01	8.07 10.01
INSTITUTIONAL, LEGAL, AND FINANCIAL IMPLEMENTATION STRATEGY											
Inventory of Existing Legal Authority, Financing, and Institutional Structures Directly and Indirectly Affecting Water Quality	X		8.1	9.5 9.6	8.1	6.1	-	5.1	8.1	7.01	7.01
Institutional, Legal, and Financial Analysis	X	X	8.2	9.5 9.6	8.2	6.2	-	5.2	8.2	7.02	7.02
PLAN SELECTION, ADOPTION, AND IMPACT ASSESSMENT											
(All Tasks)	X	X	9—	9.8 9.9	9-	4.5 4.6 7-	7-	7-	9-	10.03 11-	10.03 11-

AREAWIDE WATER QUALITY PLANNING/COASTAL ZONE MANAGEMENT PLANNING COORDINATION

June, 1977 OPPORTUNITY-CONSTRAINT SYNTHESIS AND CONFLICT RESOLUTION

Areawide Water Quality Planning Work Tasks	Information Flows		Areawide Planning Work Task Codes								
	AWQM to CZM	CZM to AWQM	NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
WATER QUALITY ANALYSIS											
Design of Long Range Monitoring Program		X	3.4	3.6	3.5	2.3	6.4	–	3.4	–	–
Revision of Surface Water Quality Standards		X	3.5	3.1	3.4	–	6.1 6.5 6.6	6.1 6.8	3.5	–	–
POINT SOURCE CONTROLS											
Development of Alternative Point Source Control Plans		X	4.8	9.4	4.8	3.5 3.6	6.5 6.6	6.6	4.8	4.05 4.06	4.05 4.06
Determination of Design Parometers for New Facilities		X	–	–	–	–	6.5	3.2 3.3	–	–	–
Sludge Disposal Assessment	X	X	4.6	–	4.6	–	–	–	4.6	–	–
Determination of Areas Suitable for On-Site Disposal Alternatives	X	X	4.7	–	4.7	3.2 3.3	–	–	4.7	–	–
NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS											
Projection of NPS/IPS Pollution Loadings and Related Water Quality Conditions		X	–	6.3	–	–	–	–	–	–	–
Development of Alternative Management Strategies	X	X	5.5	–	5.5	–	5.4 5.5 5.6 5.7	–	5.5	5.06 5.07 5.08	5.06 5.07 5.08

Areawide Water Quality Planning Work Tasks	Information Flows: AWQM to CZM	Information Flows: CZM to AWQM	Areawide Planning Work Task Codes: NORTHEAST	MIDDLESEX	MONMOUTH	OCEAN	ATLANTIC	CAPE MAY	LOWER DELAWARE	TRI-COUNTY	MERCER
GROUNDWATER QUALITY MANAGEMENT											
Development of Alternative Controls		X	-	-	-	-	4.2	-	-	6.04	6.04
Development of Groundwater Management Plans		X	6.4	9.3	6.4	-	4.6 4.7 4.8	-	6.4	6.04 6.05	6.04 6.05
LAND USE CONSIDERATIONS											
Examination of Land Use Plans Corresponding to Water Quality Issues	X	X	7.4	2.2	7.4	4.4	-	-	7.4	-	-
INSTITUTIONAL, LEGAL, AND FINANCIAL IMPLEMENTATION STRATEGY											
Inventory of Existing Legal Authority, Financing, and Institutional Structures Directly and Indirectly Affecting Water Quality	X		8.1	9.5 9.6	8.1	6.1	-	5.1	8.1	7.01	7.01
Development of Institutional, Legal, and Financial Arrangements	X	X	8.3	9.5 9.6	8.3	6.2	-	5.3	8.3	7.03	7.03
PLAN SELECTION, ADOPTION, AND IMPACT ASSESSMENT (All Tasks)	X	X	9--	9.8 9.9	9--	4.5 4.6 7--	7--	7--	9--	10.03 11--	10.03 11--

MILESTONES AND TIMETABLES FOR COASTAL ZONE AND AREAWIDE WATER QUALITY MANAGEMENT PLANNING

The following listings and figures are presented to provide information on the relative status of the Coastal Zone Management Program and certain Areawide Water Quality Management Programs. These listings and figures support the information flows presented in the preceding table by indicating, as a general guide, when specific types of information resources may be available.

TIMETABLE FOR COASTAL ZONE MANAGEMENT PLANNING

Status of Lower Cape May County Pilot Study

= Preliminary

= Review

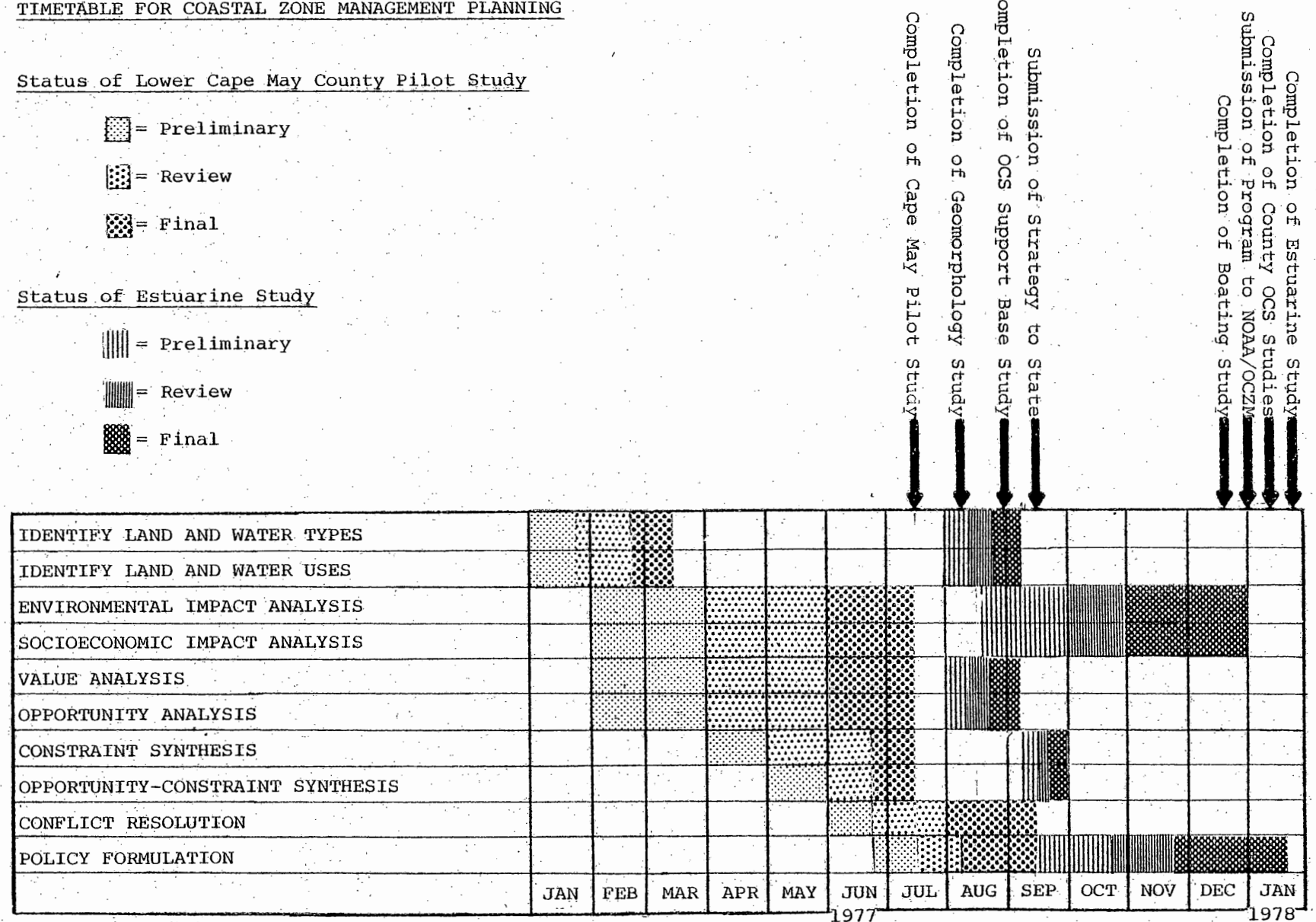
= Final

Status of Estuarine Study

= Preliminary

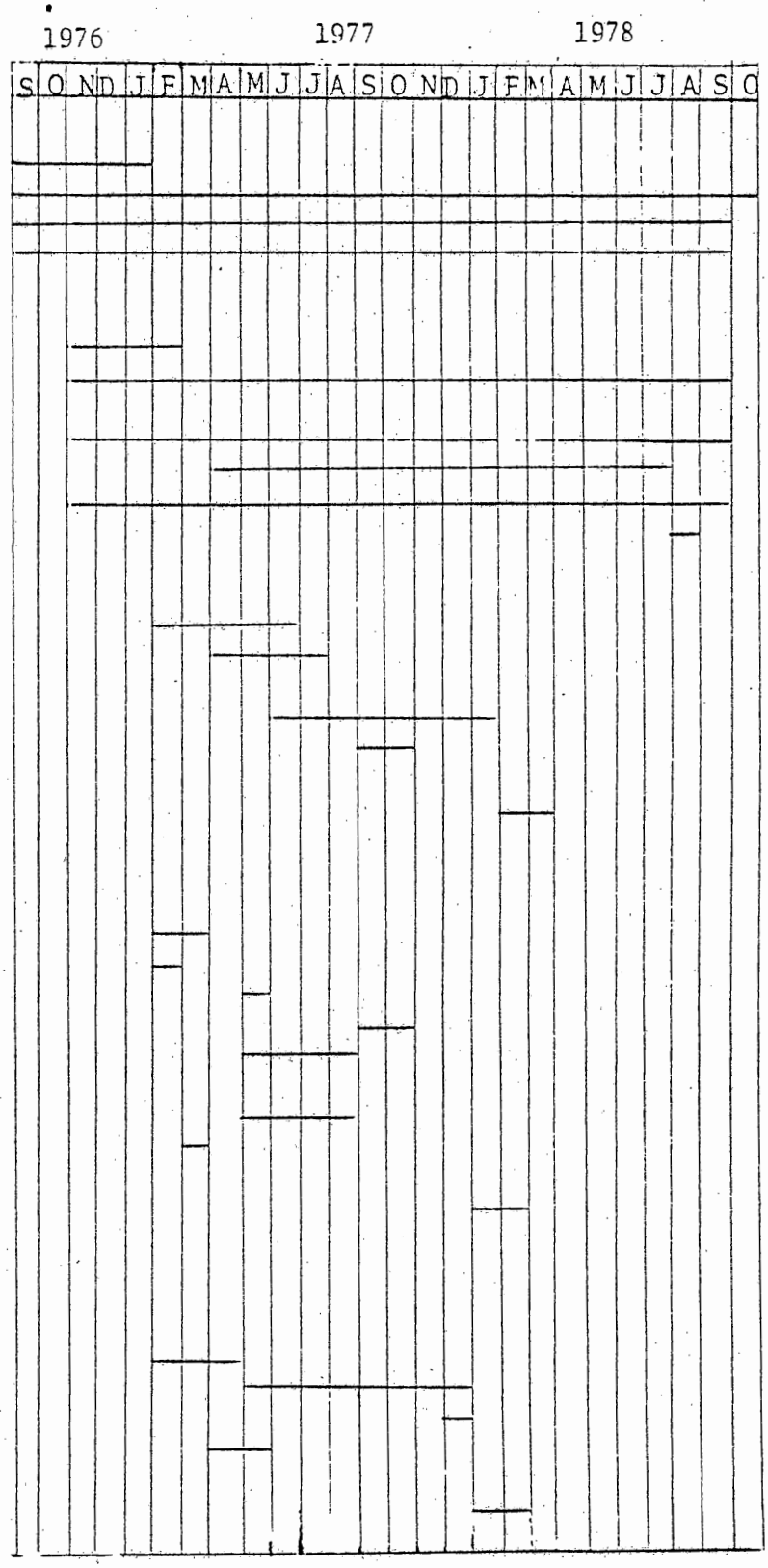
= Review

= Final



NORTHEAST 208 WORK PROGRAM

GENERAL SCHEDULE



WORK ELEMENT

1. PROJECT MANAGEMENT
   - 1.1 Develop Detailed Work Plan
   - 1.2 Project Supervision
   - 1.3 Project Administration
   - 1.4 Data Management

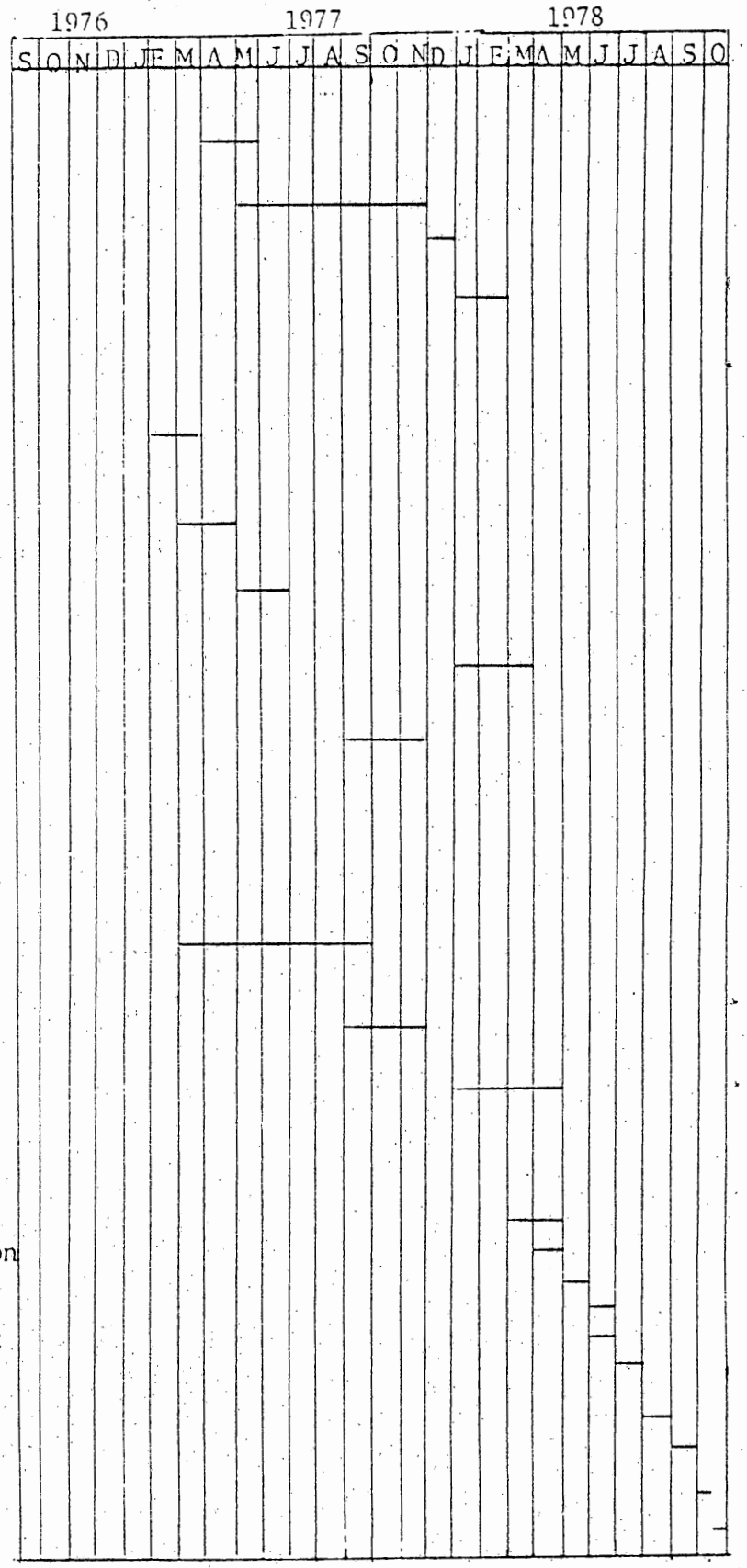
2. PUBLIC INVOLVEMENT
   - 2.1 Program Design
   - 2.2 Committee Assistance and Consultation
   - 2.3 Committee Support Services
   - 2.4 Citizens Workshops
   - 2.5 Public Information
   - 2.6 Public Hearings

3. WATER QUALITY ANALYSIS
   - 3.1 Water Quality Assessment
   - 3.2 Design Water Quality Sampling Program
   - 3.3 Conduct Field Surveys
   - 3.4 Determine Long Term Monitoring Program
   - 3.5 Revision to the Surface Water Quality Standards

4. POINT SOURCE CONTROL
   - 4.1 Inventory of Point Sources
   - 4.2 Delineation of Service Areas
   - 4.3 Project Wastewater Flows
   - 4.4 Waste Load Allocations
   - 4.5 Industrial Wastewater Pre-treatment Assessment
   - 4.6 Sludge Disposal Assessment
   - 4.7 Determine Areas Suitable for On-Site Disposal
   - 4.8 Develop Alternative Point Source Control Plan

5. NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS
   - 5.1 Inventory of Existing NPS/IPS
   - 5.2 Quantification of NPS Loads
   - 5.3 Ranking of NPS/IPS Problems
   - 5.4 Inventory of Existing Control Alternatives
   - 5.5 Develop Alternative Management Strategies

NORTHEAST 208 WORK PROGRAM
GENERAL SCHEDULE (continued)



WORK ELEMENT

6. GROUNDWATER QUALITY MANAGEMENT
   - 6.1 Description of Existing Conditions
   - 6.2 Sampling Program
   - 6.3 Design Recommended Monitoring Program
   - 6.4 Development of Groundwater Management Plans

7. LAND USE CONSIDERATIONS
   - 7.1 Describe Existing Land Use, Population and Economic Patterns
   - 7.2 Project Future Population, Economic Patterns and Land Use
   - 7.3 Describe Environmentally Sensitive Areas
   - 7.4 Examine Land Use Plans Corresponding to Alternative PS, NPS/IPS Plans
   - 7.5 Describe Alternative Land Use Controls

8. INSTITUTIONAL, LEGAL AND FINANCIAL IMPLEMENTATION STRATEGY
   - 8.1 Inventory Existing Legal Authority, Financing, and Institutional Structure Directly and Indirectly Affecting Water Quality
   - 8.2 Institutional, Legal, and Financial Analysis
   - 8.3 Develop Institutional, Legal, and Financial Arrangements

9. PLAN SELECTION, ADOPTION AND IMPACT ASSESSMENT
   - 9.1 Determine Alternative Plans
   - 9.2 Evaluation of Impact of No Action
   - 9.3 Evaluation of Alternative Plans
   - 9.4 Select Plans
   - 9.5 Prepare Environmental Assessment
   - 9.6 Prepare Draft Water Quality Management Plan
   - 9.7 Conduct Hearings
   - 9.8 Final Plan
   - 9.9 Governor's Certification and Adoption
   - 9.10 EPA Approval

LOWER RARITAN/MIDDLESEX COUNTY 208 - OUTPUT SCHEDULE

1/27/77

1977

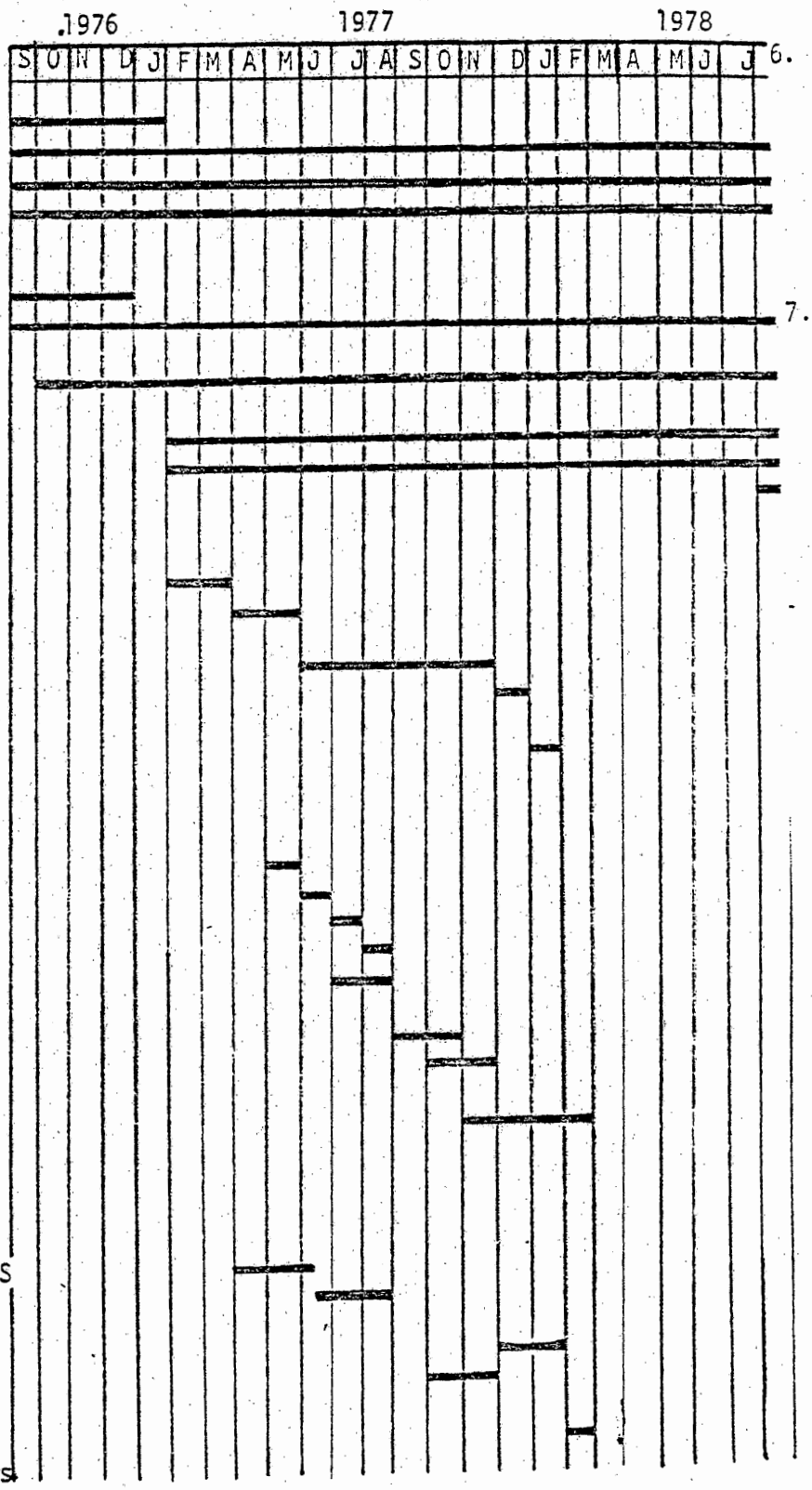
MAJOR TASKS	JANUARY*	FEBRUARY*	MARCH*	APRIL*	MAY*	JUNE*	JULY*	AUGUST*	SEPTEMBER*	OCT.*
	Modelling Report Calibration Verification	Waste Load Allocations		Urban Storm Runoff Sampling for Verification Purposes						ADOPTION - STATE CERTIFICATION
	Identification of Existing Water Quality Problems	Water Supply/ Demand Projections								
	Report on Solid Waste, Toxic, Hazardous and Residual Waste Problems	Identification of Future Water Quality Problems	Environmental, Social, Economic Base Data Compiled for Alternative Strategy Evaluation	Completed Analysis of Legal/ Institutional Framework and Resource Base				Consideration of On-Going Planning Needs	On-[illegible] ning [illegible] Program	
	Design of Plan Development Sheet									
	Design of Strategy Evaluation Sheet			All Feasible Facilities and Regulatory Approaches Identified	All Facilities and Regulatory Approaches Evaluated and Priorities Selected (Environmental, Economic and Social Impacts Determined)	Legal/Institutional Framework Identified	Preliminary Plan Prepared	Review of Plan	Final Plan PAC Approval	
		Public Presentation #2	Newsletter #6			Newsletter #7	Public Presentation #3	Public Hearing	Newsletter #8 (Executive Summary of Plan)	
	*END OF MONTH									

Monmouth County 208 Work Program
Milestones by Quarterly Disbursements

Quarter	Task	Milestone Description
1. 9/1/76 to 3/31/77	1.1	Detailed Work Plan and the Delineation of Planning Boundaries
	7.1	Description of Existing Land Use Population and Socio-Economic Characteristics
2. 4/1/77 to 6/30/77	4.1	Inventory of Point Sources
	4.2	Delineation of Service Areas
	5.1	Inventory of Existing NPS/IPS
	6.1	Description of Existing Groundwater Conditions
	7.2	Projection of Future Population, Socio-Economic, and Land Use Characteristics
	7.3	Definition of Environmentally Sensitive Areas
3. 7/1/77 to 9/30/77	4.3	Projected Wastewater Flows
	4.4	Waste Load Allocations
	7.4	Land Use Plans Examined
	8.1	Inventory of Existing Legal, Financial, and Institutional Implementation Strategies
4. 10/1/77 to 12/31/77	3.3	Completion of Surface Water Sampling
	3.4	Water Quality Standards Revised
	6.2	Completion of Groundwater Sampling
	7.5	Land Use Controls Examined
5. 1/1/78 to 3/31/78	3.5	Long Term Surface Water Monitoring Programs Designed
	4.8	Alternative Point Source Control Plans Developed
	5.3	Ranking of NPS/IPS Problems
	5.5	Alternative NPS/IPS Plans Developed
	6.4	Groundwater Management Plans Developed
	8.3	Development of Alternative Legal, Financial, and Institutional Implementation Strategies
6. 4/1/78 to 6/30/78	9.4	Draft Plan Selected
	9.5	Environmental Assessment Completed
7. 7/1/78 to 9/30/78	9.7	Hearings Completed
8. 10/1/78	9.9	Final Plans Submitted to the Governor for Certification
	9.10	Final Plan Sent to EPA for Approval

MONMOUTH COUNTY 208 WORK PROGRAM

GENERAL SCHEDULE



WORK ELEMENT

1. PROJECT MANAGEMENT
   - 1.1 Develop Detailed Work Plan
   - 1.2 Project Supervision
   - 1.3 Project Administration
   - 1.4 Data Management

2. PUBLIC INVOLVEMENT
   - 2.1 Program Design
   - 2.2 Committee Assistance and Consultation
   - 2.3 Committee Support Services
   - 2.4 Citizens Workshops
   - 2.5 Public Information
   - 2.6 Public Hearings

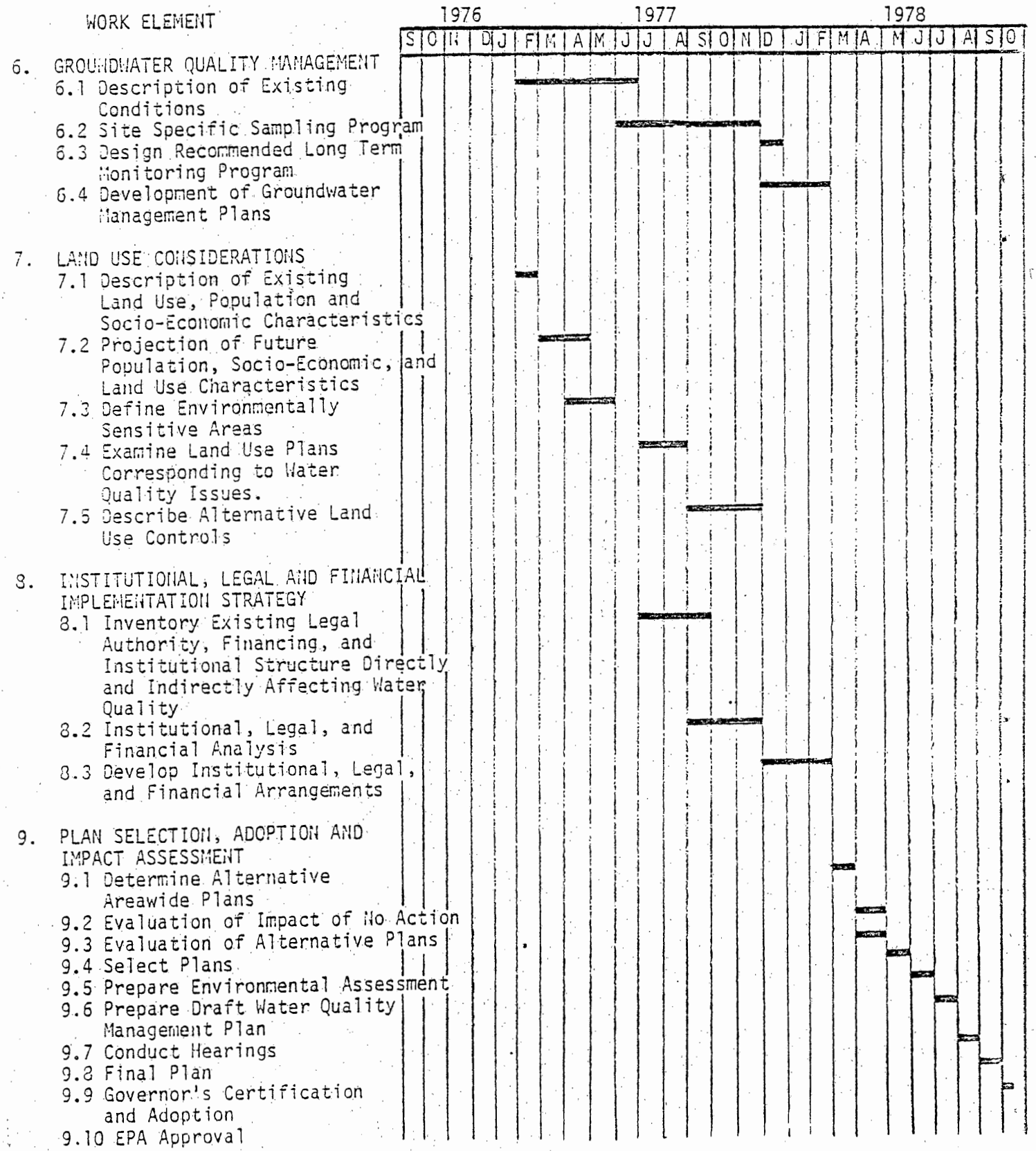
3. WATER QUALITY ANALYSIS
   - 3.1 Water Quality Assessment
   - 3.2 Design of Sampling Program
   - 3.3 Conduct Field Surveys
   - 3.4 Revision of Water Quality Standards
   - 3.5 Determine Long Term Monitoring Program

4. POINT SOURCE CONTROL
   - 4.1 Inventory of Point Source
   - 4.2 Delineation of Service Areas
   - 4.3 Project Wastewater Flows
   - 4.4 Waste Load Allocations
   - 4.5 Industrial Wastewater Pretreatment Assessment
   - 4.6 Sludge Disposal Assessment
   - 4.7 Determine Areas Suitable for On-Site Disposal
   - 4.8 Develop Alternative Point Source Control Plan

5. NON-POINT AND INTERMITTENT POINT SOURCE CONTROLS
   - 5.1 Inventory of Existing NPS/IPS
   - 5.2 Quantification of Existing NPS/IPS Loads
   - 5.3 Ranking of NPS/IPS Problems
   - 5.4 Inventory of Existing Alternative Controls
   - 5.5 Develop Alternative Plans and Best Management Practices

MONMOUTH COUNTY 208 WORK PROGRAM

GENERAL SCHEDULE (cont'd)



OCEAN COUNTY 208 MILESTONES
(revised January 1977)

PRE-PROJECT (July 1975 - February 1976)
- -formation and meeting of PAC and CAC
- -submission of Project Control Plan
- -completion of study area base map
- -submission of progress report to EPA

FIRST YEAR (1 - 12 months)
- -execution of contract with N.J.D.E.P.
- -execution of contract with institutional consultant
- -execution of contract with water quality analysis technical consultant
- -quarterly meetings of PAC and CAC
- -submission of quarterly progress reports
- -execution of contract and completion of aerial photography
- -listing of point source (NPDES) discharger
- -completion of project staffing
- -completion of report summarizing available water quality data
- -completion of draingae basins mapping
- -initiation of surface water monitoring program
- -completion of draft population projections
- -completion of composite mapping of sensitive areas
- -completion of existing facilities mapping

SECOND YEAR (13 - 24 months)

FIFTH PROJECT QUARTER (13 - 15 months)
- -execution of Ocean County Sewerage Authority
- -execution of USDA-SCS contract
- -execution of groundwater management contract
- -conduct public meeting on process to date
- -quarterly progress report
- -completion of stream hydrographs and hydraulic analysis
- -completion of existing land use mapping and report.

SIXTH PROJECT QUARTER (16 - 18 months)
- -meeting of PAC and CAC
- -submission of progress report to EPA
- -completion of alternative land use maps
- -completion of mapping of potential retention and detention basin sites
- -completion of saltwater interface mapping
- -draft of waste load projections
- -draft of materials balance overlay for land use map
- -recommendations relating to sewerage treatment

SEVENTH PROJECT QUARTER (19 - 21 months)
- -meeting of PAC and CAC
- -submission of progress report to EPA
- -completion of water quality assessment

-completion of subplans
-draft environmental ssessment
-draft Areawide Plan
-conduct public meeting on alternatives and draft Plan

EIGHTH QUARTER (22 - 24)
-complete Final Areawide Plan
-conduct public hearing
-submit Areawide Plan for necessary approvals
-publish 500 copies of Areawide Plan
-submit report on planning process to EPA

ATLANTIC COUNTY 208 MILESTONES

Pre-Project (July 1976 - December 1977)

-establish and hold meetings of P.A.C. and C.A.C.
-completion of project staffing.
-completion of agreements within county agencies participating in project.
-develop liaison with State and Federal agencies.
-completion of bibliography of all existing available data.
-completion of data deficiencies report.
-completion of Project Control Plan.

First Quarter (January 1977 - March 1977)

-completion of natural features maps (soils, topographic, vegetation, geology, wildlife, and environmentally sensitive areas).
-completion of hydrology maps (basins, flood hazard, surface water classification, shellfish classification, ground water classification, surface water areas).
-completion of jurisditional maps (municipal, C.A.F.R.A., Wetlands, ACUATS, Sewerage Authorities, M.U.A.'S and 208).
-completion of subplan report: Description of Ground Water Program.
-completion of subplan report: Present Ground Water Management Programs.
-completion of subplan report: Scope of Soil Erosion Problems.
-completion of subplan report: Present Non-Point Source Management Programs.
-completion of subplan report: Existing and Potential Non-Point Sources of Pollution.

Second Quarter (April 1977 - June 1977)

-completion of utilities maps (well locations, sewerage facilities, water company service areas, sewerage service areas, septic tanks, and cesspool concentrations, stream survey stations and ground water monitoring stations).
-completion of cultural maps (existing land use, water use, proposed development, growth areas, historical and archaeological (sites).
-completion of subplan report: Present and Anticipated Ground Water Use (demands and uses).
-completion of subplan report: Existing and Potential Ground Water Degradation.

ATLANTIC COUNTY 208 MILESTONES (continued)

-completion of subplan report: Ground Water Monitoring and Surveillance Network.
-completion of subplan report: Non-Point Source Monitoring and Surveillance Network.
-completion of subplan report: Inventory of Methods for controlling Non-Point Source Pollution.

Third Quarter (July 1977 - September 1977)

-completion of Atlantic County Population and Land Use Study.
-completion of Waste Load Projections.
-completion of subplan report: Inventory of Ground Water Management Alternatives.

Fourth Quarter (October 1977 - December 1977)

-completion of subplan report: Best Management Techniques for controlling Non-Point Source Pollution.
-completion of subplan report: Best Management Techniques for Ground Water Resources.
-completion of final Non-Point Source Pollution Report.
-completion of final Ground Water Quality Management Report.

Fifth Quarter (January 1978 - March 1978)

-completion of subplan report: Inventory of Existing Controls and Standards for Standards for Surface Water.
-completion of subplan report: Present and Anticipated Surface Water Use.
-completion of subplan report: Identification of Existing Possible Future Surface Water Pollution.
-completion of subplan report: Review Surface Water Monitoring and Surveillance Network.
-completion of subplan report: Inventory of Methods and Standards for Controlling Surface Water Pollution.

Sixth Quarter (July 1978 - September 1978)

-completion of subplan report: Best Management Techniques for Surface Water.
-completion of final Surface Water Quality Planning and Management Report.

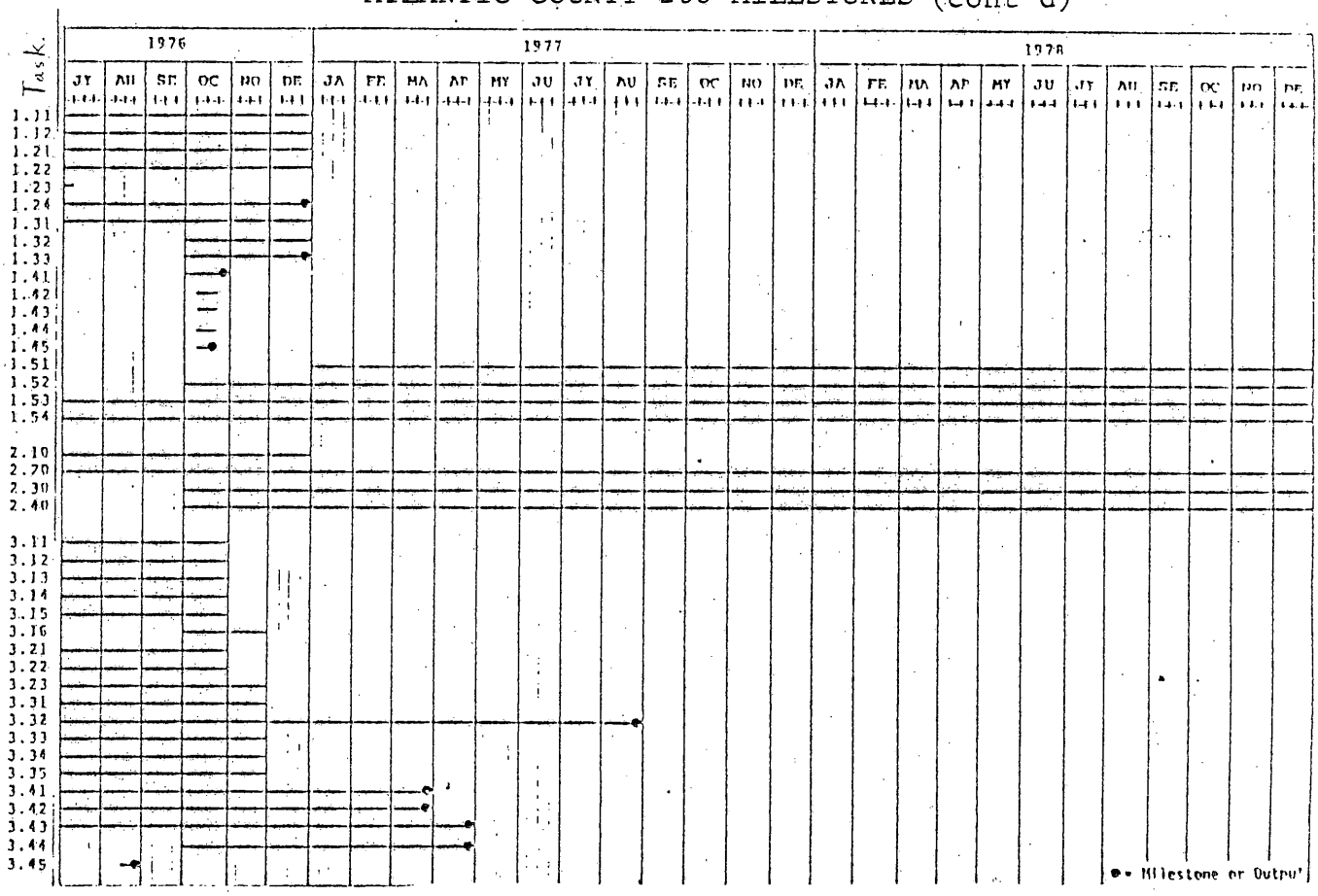
Seventh Quarter (July 1978 - September 1978)

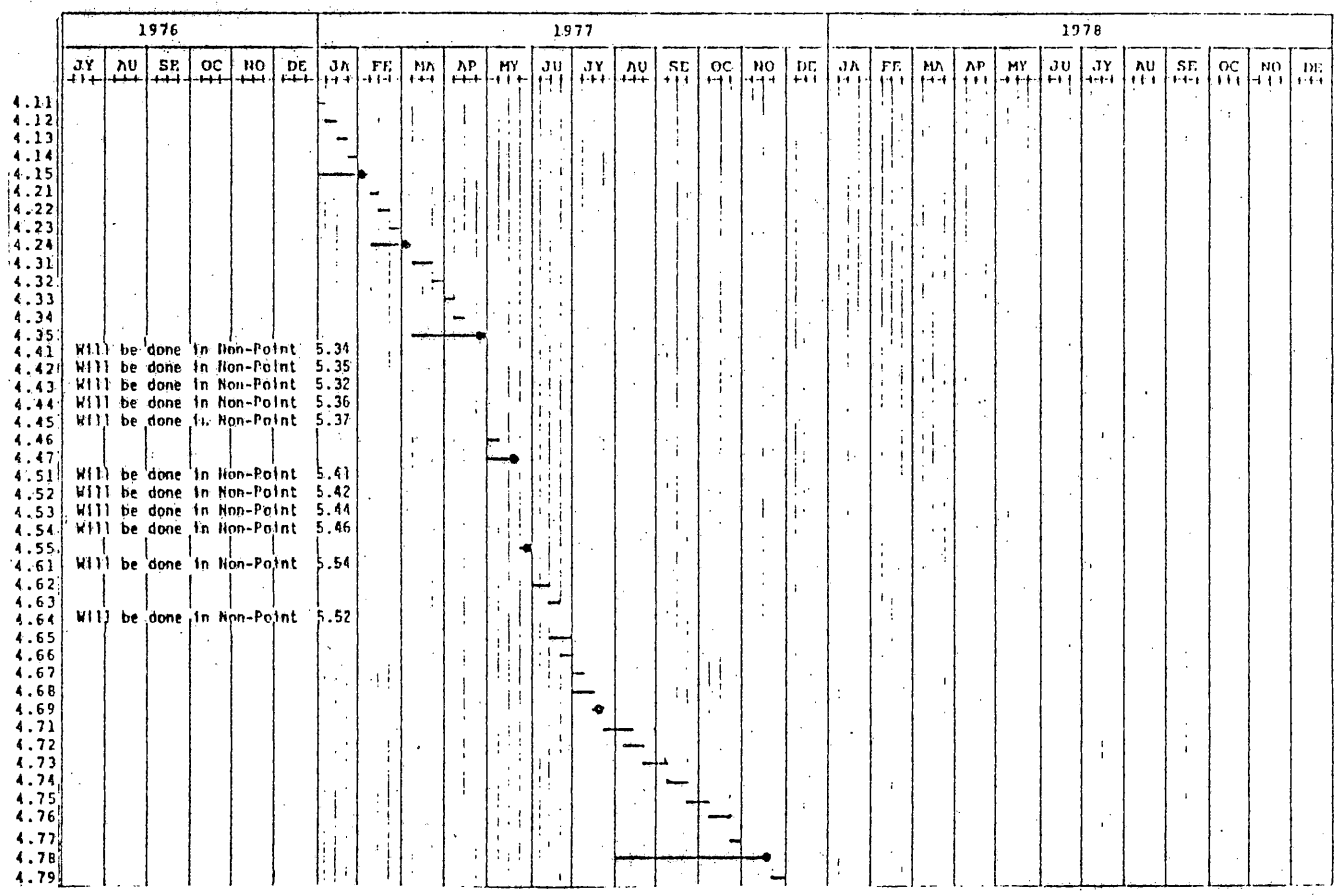
-complete draft of final Areawide Water Quality Plan.
-completion of final Areawide Water Quality Plan.

Eigth Quarter (October 1978 - December 1978)

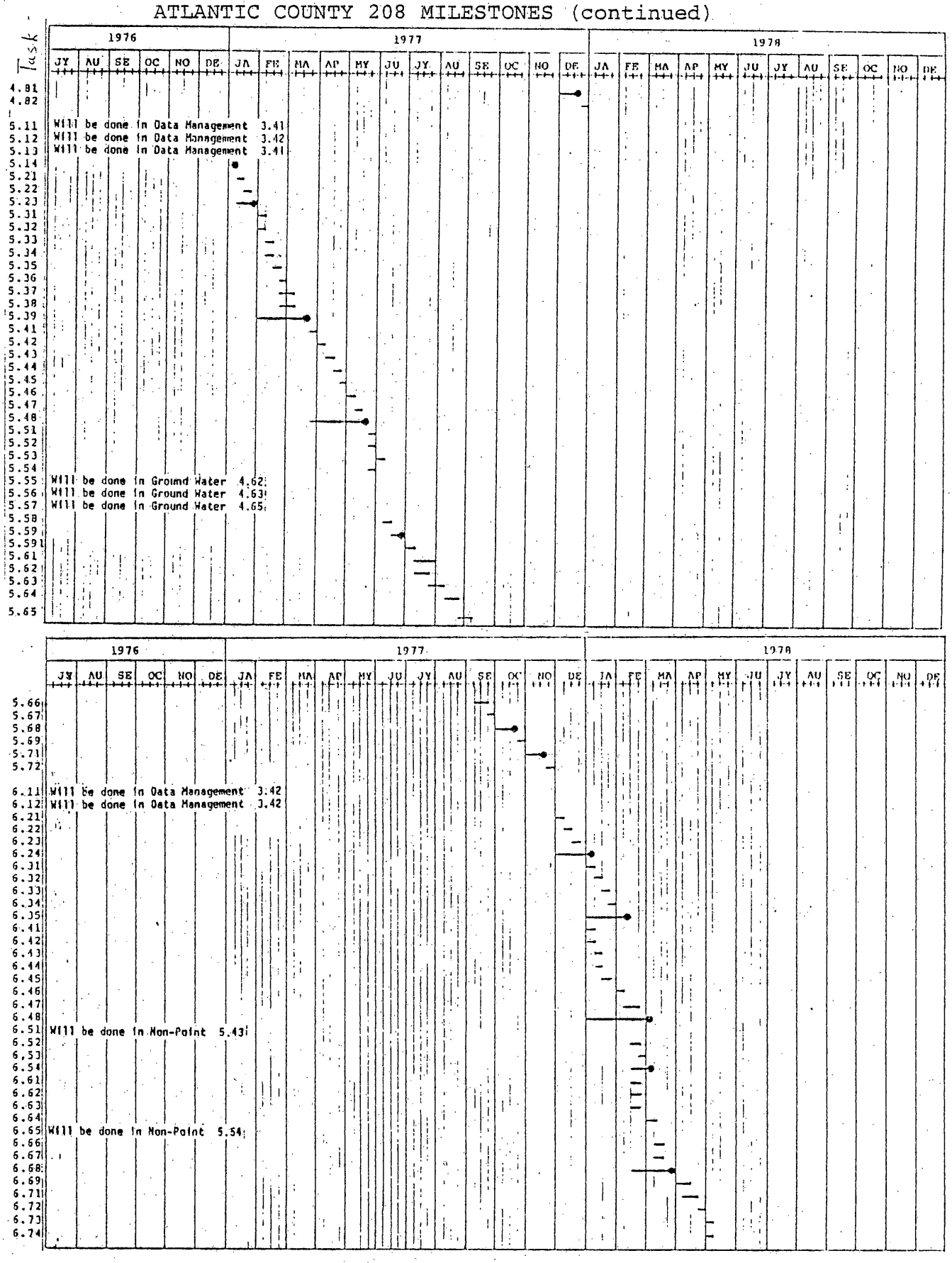
-development of Implementation Strategy.

ATLANTIC COUNTY 208 MILESTONES (cont'd)

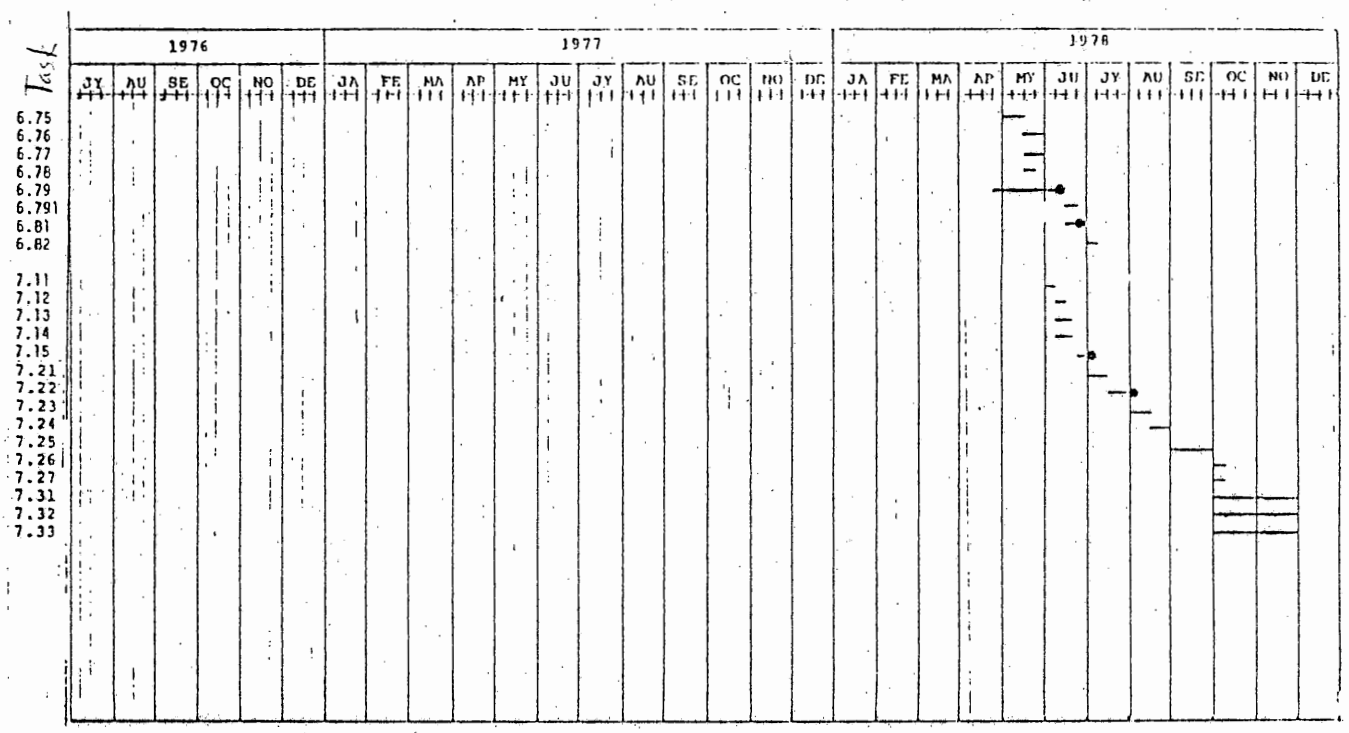




ATLANTIC COUNTY 208 MILESTONES (continued)



ATLANTIC COUNTY 208 MILESTONES (continued)



CAPE MAY 208 MILESTONES

Pre-Project (June 1976 - September 1976)

-develop project management and staff.
-formation and meeting of policy advisory committee (PAC).
-several meetings of technical advisory committee (TAC).
-resolution by Cape May County Board of Chosen Freeholders adopting Formal 208 PAC.
-submission of project control program.
-progress report.
-ongoing program management and staff.
-develop fiscal controls, accounting system.
-establish liason with local government agencies.
-ongoing public participation.

First Quarter (October 1976 - December 1976)

-ongoing data management.
-file of data, printouts, etc.
-executed agreements with DEP, MUA, HD.
-inventory of existing water quality programs.
-progress report.
-ongoing program management.
-ongoing public participation.
-prepare a list of parameters from County Comprehensive Plan.

Second Quarter (January 1977 - March 1977)

-inventory of existing ground water data: Summary Report.
-map location of surface water test sites.
-identity findings/problem areas with 201 Facilities Plan.
-prepare inventory of existing treatment facilities.
-report summary of existing planning data applicability.
-project future landuse, population and employment.
-alternative projections.
-define landuse and water quality relationship.
-define water quality changes.
-report summarizing.
-ongoing data management.
-progress report.
-ongoing program management.
-ongoing public participation.
-development and execute agreements with consultants.
-monitor consultant progress.

Third Quarter (April 1977 - June 1977)

-summary report on 201 Facilities Plan.
-review surface water data for New Jersey DEP.
-review and prepare summary report on bay and ocean data.
-design sampling/monitoring data.
-prepare map and summary report of point source pollution.
-prepare map and summary report of intermittent and non-point source pollution.

CAPE MAY 208 MILESTONES (continued)

Third Quarter (April 1977 - June 1977)

-select population/landuse projection.
-study and prepare summary table of institutional constraints, overlapping jurisdictions, data gaps, financing problems.
-prepare summary list of existing state surface water quality standards.
-prepare summary list of existing state groundwater quality standards.
-prepare summary list of EPA water quality standards.
-review and prepare report of discharge standards.
-ongoing data management.
-progress report.
-ongoing program management.
-monitor consultant progress.
-ongoing public participation.

Fourth Quarter (July 1977 - September 1977)

-project waste loads.
-ongoing data management.
-monitor consultant progress.
-ongoing program management.
-ongoing public participation.
-progress report.

Fifth Quarter (October 1977 - December 1977)

-pollution area map.
-environmentally sensitive area map.
-summary of regulation weaknesses.
-summary of alternative impact plans.
-summary report of recommendations to revise regulation/ co-ordination mechanisms.
-review and assess U.S.G.A. stream accountability network.
-ongoing data management.
-monitor consultant progress.
-ongoing public participation.
-progress report.
-ongoing program management.

Sixth Quarter (January 1978 - March 1978)

-identify and develop water pollution parameters.
-ongoing data management.
-monitor consultant progress.
-progress report.
-ongoing program management.
-ongoing public participation.

LOWER DELAWARE 208 MILESTONES

MONTH	TASK	TASK DESCRIPTION
September December 1976	1.1	Develop Detailed Work Plan
	1.2	Project Supervision
	1.3	Project Administration
	1.4	Data Management
	2.1	Program Design - completed
	2.2	Committee Assistance and Consultation
	2.4	Citizens Workshops
	2.5	Public Information
January March 1977	1.1	Detailed Work Plan completed
	3.1	Water Quality Assessment
	3.2	Design of Sampling Program
	4.1	Inventory of Point Source
	4.2	Delineation of Service Areas
	5.1	Inventory of Existing NPS/IPS
	6.1	Description of Existing Conditions
	7.1	Description of Existing Land Use, Population and Socio Economic Characteristics
April June 1977	3.1	Water Quality Assessment completed
	3.2	Design of Sampling Program completed
	3.3	Conduct Field Surveys
	4.3	Industrial Wastewater Pretreatment Assessment
	5.1	Inventory of Existing NPS/IPS completed
	5.2	Quantification of Existing NPS/IPS Loads
	6.1	Description of Existing Conditions completed
	6.2	Sampling Program
	7.1	Description of Existing Land Use, Population and Socio Economic Characteristics completed
	7.2	Projection of Future Population, Socio Economic, and Land Use Characteristics
	8.1	Inventory Existing Legal Authority, Financing, and Institutional Structure Directly and Indirectly Affecting Water Quality

LOWER DELAWARE 208 MILESTONES (continued)

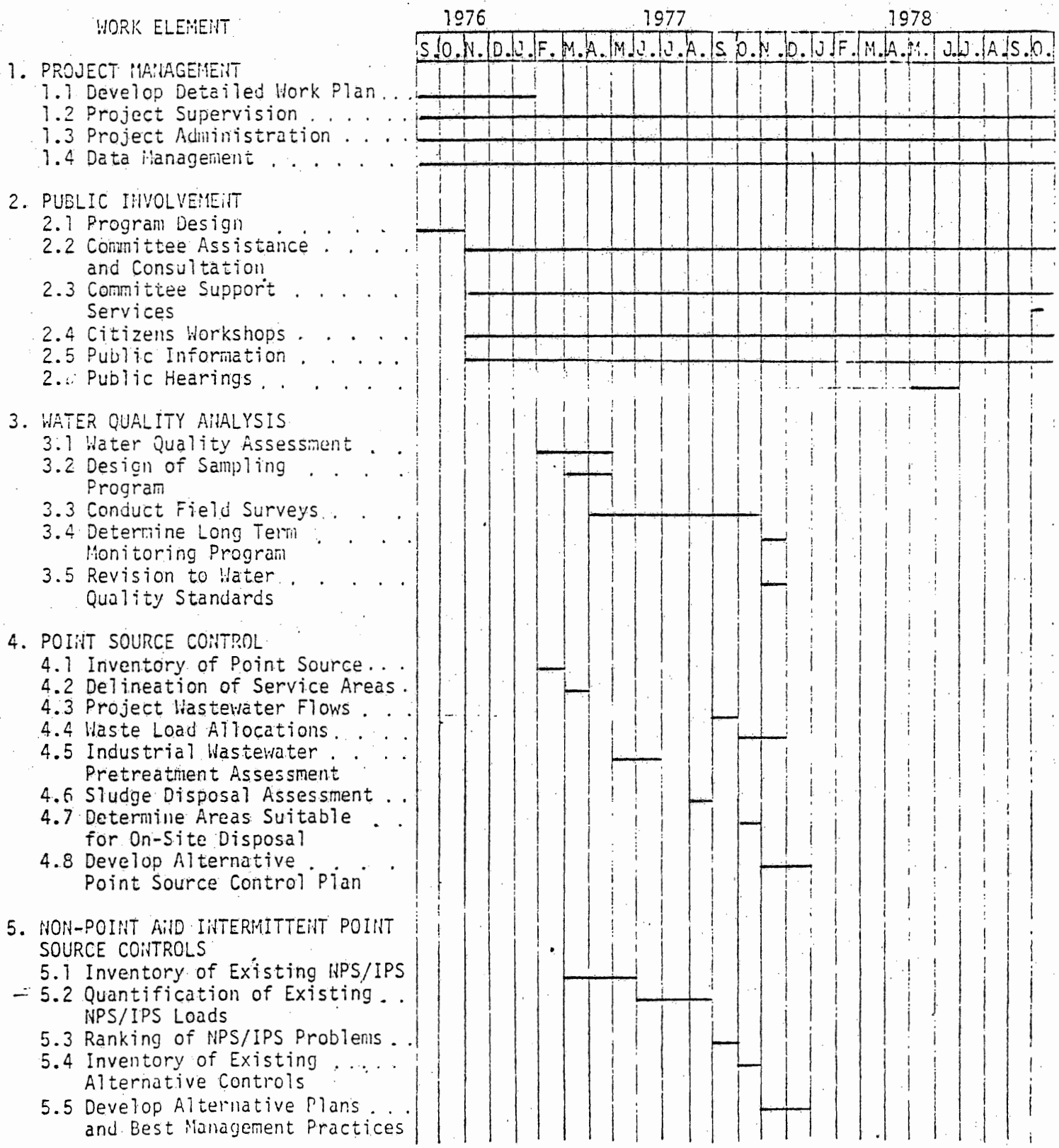
MONTH	TASK	TASK DESCRIPTION
July	4.5	Project Wastewater Flows completed
September	4.6	Sludge Disposal Assessment completed
1977	5.2	Quantification of Existing NPS/IPS Loads completed
	5.3	Ranking of NPS/IPS Problems completed
	7.2	Projection of Future Population, Socio Economic, and Land Use Characteristics completed
	7.3	Define Critical Water Quality Impact Areas
	8.1	Inventory Existing Legal Authority, Financing, and Institutional Structure Directly and Indirectly Affecting Water Quality completed
	8.2	Institutional, Legal and Financial Analysis completed
October	5.3	Field Surveys completed
December	5.4	Determine Long Term Monitoring Program
1977	5.5	Revision of Water Quality Standards
	4.4	Waste Load Allocations completed
	4.7	Determine Areas Suitable for On-Site Disposal completed
	4.8	Develop Alternative Point Source Control Plan
	5.4	Inventory of Existing Alternative Controls
	5.5	Develop Alternative Plans and Best Management Practices
	6.2	Sampling Program completed
	6.3	Design Recommended Monitoring Program
	6.4	Development of Groundwater Management Plans
	7.3	Define Critical Water Quality Impact Areas completed
	7.4	Examine Land Use Plans Corresponding to Water Quality Issues completed
	8.3	Develop Institutional, Legal and Financial Arrangements completed
January	6.4	Development of Groundwater Management Plans completed
March	7.5	Describe Alternative Land Use Controls completed
1978	9.1	Determine Alternative Areawide Plans
	9.2	Evaluation of Impact of No Action
	9.3	Evaluation of Alternative Plans
	9.4	Select Plans

LOWER DELAWARE 208 MILESTONES (continued)

MONTH	TASK	TASK DESCRIPTION
April	9.3	Evaluation of Alternative Plans completed
June	9.4	Select Plans completed
1978	9.5	Prepare Environmental Assessment completed
	9.6	Prepare Draft Water Quality Management Plan completed
	9.7	Conduct Public Hearings
July	9.8	Final Plan
October	9.9	Governor Certification and Adoption
1978	9.10	Plan Submission to EPA for Approval

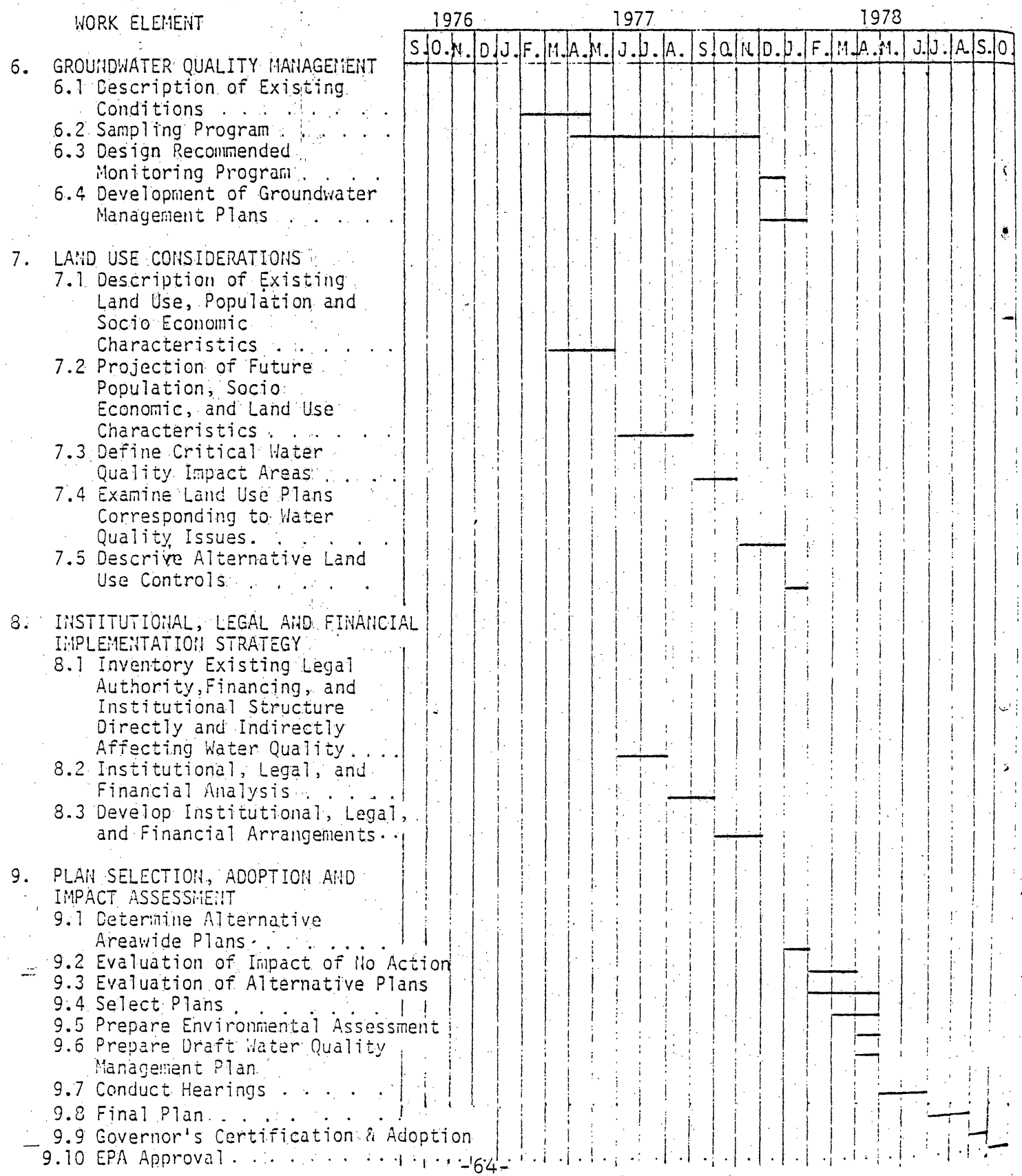
LOWER DELAWARE 208 WORK PROGRAM

GENERAL SCHEDULE



LOWER DELAWARE 208 WORK PROGRAM

GENERAL SCHEDULE (cont'd.)



TRI-COUNTY AND MERCER
PROJECT MILESTONES

Quarter	Events
I (January - March 1976)	Completion of activities 1.01, 2.01, 3.01, 4.01, 4.02, 8.01, 8.02
II (April - June 1976)	Completion of activities 1.03, 3.02, 3.04, 5.01, 6.01, 7.01, 8.03, 8.04, 8.05, 8.06, 8.07, 9.01, 9.03, 10.01
III (July - September 1976)	Completion of activities 1.04, 1.05, 3.05, 6.02, 7.02, 9.04, 10.02
IV (October - December)	Completion of activities 3.03, 3.06, 4.03, 4.04, 4.05, 5.02, 5.03, 5.04, 5.05, 5.06, 6.03, 6.04, 7.03, 9.05
V (January - March 1977)	Completion of activities 4.06, 5.07, 6.05, 7.04, 10.03, 11.01, 11.02
VI April - June 1977)	Completion of activities 4.08, 5.08, 6.06, 11.03, 11.04, 11.05
VII (July - September 1977)	Completion of activities 9.02, 9.06
VIII (October - December 1977)	Completion of activities 1.02, 2.02, 2.03, 2.04, 2.05, 2.06, 2.07, 4.07, 11.06, 11.07

In addition, the following interim outputs are termed milestones:

Output	To be completed by
Service area delineations	March 31, 1976
Existing population and land use	March 31, 1976
Projected wasteloads and flows	March 31, 1976
Preliminary wasteload allocations	December 31, 1976

208 Milestones During Second Year

Mercer and Tri-County Grants, New Jersey, December 1976

First Quarter (before March 31, 1977)

Interim outputs except for waste load allocations
208 agency recommendations to state on water quality standards (e)
Inventories and projections (c)
Water quality assessment (part of b)
Land use/water quality relationships
Institutional assessment

Second quarter (before June 30, 1977)

Non-point source assessment (d)
Non-point source control needs (j)
Urban and industrial stormwater system needs (1)
Municipal waste treatment systems needs (h)
Plan selection criteria
Groundwater quality assessment

Third quarter (before September 30, 1977)

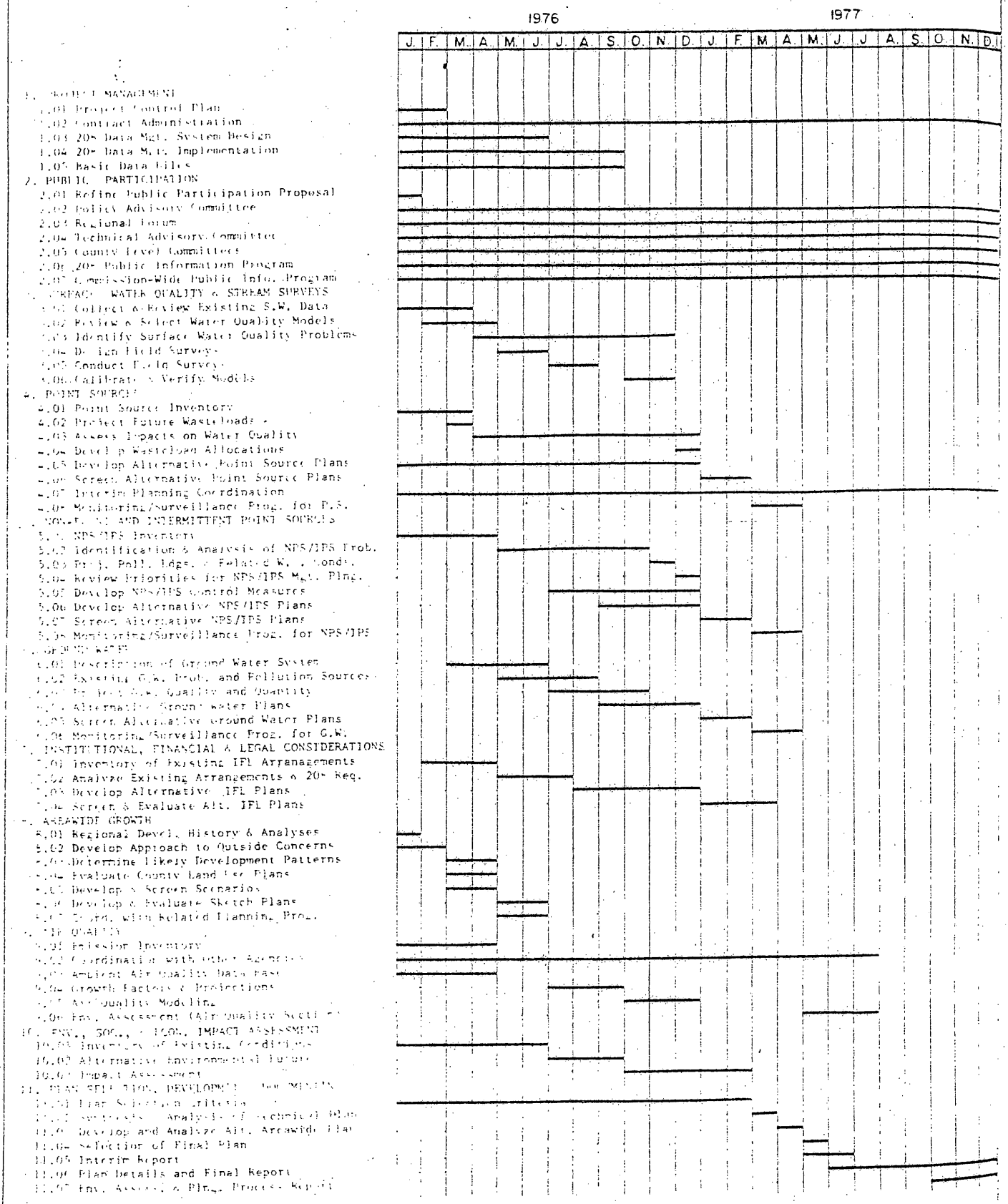
Field sampling data tabulated and analyzed
Regulatory program (n)
Management agencies (o)
Residual waste control needs (k)
Interim Report on areawide alternatives
Public hearing on areawide alternatives

Fourth quarter (before December 31, 1977)

Selection of final areawide water quality plan
Planning boundaries (a)
Target abatement dates (n)
Environmental, social and economic impact (p)
Monitoring and surveillance programs
Final submission to Governor for review and certification

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

TRI-COUNTY AND MERCER 208 WORK PROGRAM



NEW JERSEY 208 WORK SCHEDULE FOR 1977

TRI-COUNTY AND MERCER AREAS

NO	ACTIVITY NAME	JAN.	FEB.	MAR	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1.02	Project management												
1.04	Data management												
2.02	Policy advisory committee												
2.04	Technical advisory committee												
2.05	County citizens forums												
2.06	Public information												
3.03	Surface water quality problems												
3.05	Field surveys												
3.06	Model calibration												
4.02	Waste loads and flows												
4.05	Point source plan												
4.07	Interim planning coordination												
5.01	NPS/IPS inventory												
5.02	NPS/IPS problem identification												
5.05	NPS/IPS control measures search												
5.06	NPS/IPS alternatives												
5.07	NPS/IPS alternatives screening												
5.08	NPS/IPS monitoring system												
6.02	Groundwater problem identification												
6.04	Groundwater alternatives												
6.05	Groundwater alternatives screening												
6.06	Groundwater monitoring system												
7.02	Institutional problem identification												
7.03	Institutional alternatives												
7.04	Institutional alternatives screening												
8.06	Regional development guide												
8.07	Coordination with other planning												
10.01	Environmental inventory												
10.02	Environmental alternatives												
10.03	Environmental impacts												
11.01	Plan selection criteria												
11.02	Technical plan synthesis												
11.03	Technical and institutional synthesis												
11.04	Selection of final plan												
11.05	Interim report on alternatives												
11.06	Final plan details												
11.07	Environmental assessment statement												

INFORMATION SOURCES

New Jersey's Coastal Zone Management Program

New Jersey Department of Environmental Protection, Office of Coastal Zone Management, Alternative Boundaries for New Jersey's Coastal Zone. NJDEP/OCZM. December 1976.

New Jersey Department of Environmental Protection, Office of Coastal Zone Management, Alternatives for the Coast, 1976. NJDEP/OCZM. October 1976.

New Jersey Department of Environmental Protection, Office of Coastal Zone Management, An Inventory of the New Jersey Coastal Area, 1975. NJDEP/OCZM. September 1975.

New Jersey Department of Environmental Protection, Office of Coastal Zone Management, Coastal Management Strategy. NJDEP/OCZM. (In preparation.)

New Jersey Department of Environmental Protection, Office of Coastal Zone Management, A Pilot Study of Lower Cape May County. NJDEP/OCZM. (In preparation.)

New Jersey Department of Environmental Protection, Office of Coastal Zone Management, Revised Third Year Coastal Zone Management Program Development Grant Application. NJDEP/OCZM. November 24, 1976.

Areawide Water Quality Management Planning

Atlantic County Board of Chosen Freeholders, Project Control Program, 208 Areawide Waste Treatment Management Planning Program, Atlantic County, New Jersey. January 1977 (revised)

Cape May County Planning Board, Project Control Program for the Cape May County, New Jersey, 208 Water Quality Project. October 1976.

Delaware Valley Regional Planning Commission, Areawide Waste Treatment Management Plan for Burlington, Camden, and Gloucester Counties, New Jersey: Project Control Plan (Tri-County 208). February 1976.

Delaware Valley Regional Planning Commission, Memorandum to Tri-County 208 Policy Advisory Committee re Modifications to the Project Control Plan submitted to EPA. January 11, 1977.

"EC Roundtable - 208: The Transition from Planning to Management". Environmental Comment. April 1977. pp. 19-24.

Izaak Walton League of America, A Citizen's Guide to Clean Water. Washington, D.C.: U.S. Environmental Protection Agency. June 1973.

Middlesex County Planning Board, Work Plan for Areawide Waste Treatment Management Planning. August 15, 1975 (revised)

Middlesex County Planning Board, Lower Raritan/Middlesex County 208 Water Quality Management Planning Program, Memorandum to the Lower Raritan/Middlesex County 208 Policy Advisory Committee re Refinement of Outputs and Milestones for Remainder of 208 Planning Grant Period. January 11, 1977.

Middlesex County Planning Board, Lower Raritan/Middlesex County 208 Water Quality Management Planning Program, Memorandum to the Lower Raritan/Middlesex County 208 Policy Advisory Committee re Plan Output Schedule. January 27, 1977.

New Jersey Department of Environmental Protection, Division of Water Resources, Detailed Work Plan for Areawide Water Quality Management Planning: Lower Delaware Region. January 1977.

_____, Detailed Work Plan for Areawide Water Quality Management Planning: Monmouth County. January 1977.

_____, Synopsis of the Detailed Work Plan for Areawide Water Quality Management Planning: Northeast New Jersey. January 1977.

Ocean County Board of Chosen Freeholders, 208 Areawide Waste Treatment Management Planning Program: Project Control Program. Feburary 1976 (revised).

_____, 208 Areawide Water Quality Management Planning; Progress Report (Feburary 1976 through January 1977). February 1977.

Sedway, Paul H., "Regulation: A Critical Element for 208 Management". Environmental Comment. April 1977. pp 6-8.

U.S. Environmental Protection Agency, Office of Public Affairs, First Things First: A Strategy Against Water Pollution. Washington, D.C.: U.S. Environmental Protection Agency. September 1974.

U.S. Environmental Protection Agency, Division of Water Planning, Revised Area and Agency Designation Handbook for Section 208 Areawide Water Quality Management Planning. Washington, D.C.: U.S. Environmental Protection Agency. November 1975.

Varin, Daniel, W., "From Planning to Management: A State Agency's Experience". Environmental Comment. April 1977. pp 10-12.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