LONG ISLAND REGIONAL PLANNING BOARD

Long Island Comprehensive Waste Treatment Management Plan

Volume I: Summary Plan

THE LONG ISLAND COMPREHENSIVE WASTE TREATMENT MANAGEMENT PLAN

VOLUME I: SUMMARY PLAN

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Project Director

July 1978

NASSAU-SUFFOLK REGIONAL PLANNING BOARD

Hauppauge, New York

This document was prepared by the Nassau-Suffolk Regional Planning Board pursuant to Section 208, Federal Water Pollution Control Act Amendments of 1972 (PL 92–500). This project has been financed in part with Federal funds from the United States Environmental Protection Agency under Grant Number P002103–01–0. The contents do not necessarily reflect the views and policies of the United States Environmental Protection Agency, nor any state, county, regional or local agency participating in the 208 program.

Library of Congress Catalog Card Number: 78–61090

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Foreword

Water, life's ultimate indispensible mineral, is no match for its greatest enemy, man. But man's victory is hollow.

"Mommy, my toothbrush tastes funny." This scene could be early morning in Levittown, Lynbrook or Port Jefferson, as a typical Long Island family prepares to begin another day. The circumstances along with others similar in consequence could become reality in the absence of the comprehensive water quality management program contained in this multi-faceted work. Even with this document, they might come to pass. The program only shows the way. Unless implemented, toothbrushes may indeed begin to taste funny and surface waters, commercially and recreationally, may become endangered hydrological species. In this brief context—citing hazards but knowing they can be eliminated—I write this introductory segment with utmost pride. This work, in my opinion, represents excellence unusually distinctive in quality, a demonstration of a public agency's ability to create, produce and execute at the highest level of competency.

Long Island possesses rich and unusual natural bounty: white and pebbleless ocean sands, vast expanses of salt meadow, white-cedar swamps, inland pine barrens, flat plains, colorful downs, fiordlike harbors, bays, ponds, lakes and freshwater bogs. It offers something to suit the taste for nature in each of us. It is a remarkably varied, beautiful and fertile insular tract, lying at the threshold of the greatest urban center in the nation. For 250 years after its first settlement Long Island changed little. From 1812 to the turn of the century Suffolk County's total population increase amounted to only 42,582 souls. Even the railroad did little to alter the generally rural atmosphere. All this serenity came to an abrupt end following World War II when people, equal in number to the population of more than a dozen states, emigrated eastward across the city line. Vast public works were carried out, parkways and expressways laced the largest island on the Atlantic seaboard. But it was not until 1974, two years after passage of the Federal Water Pollution Control Act Amendments, that the fruits of environmental management became apparent and resulted in this far-reaching document. Chronologically it represents the Region's fourth most important plan—following the Nassau County Charter in 1938, the Suffolk County Charter in 1959 and the Bi-county Comprehensive Development Plan in 1970—affecting the lives of all its residents.

There is a valid question concerning the Region's success in developing comprehensive studies. Would they be possible without a regional planning agency? Possibly, yes; anything is. But as timely and of such professional calibre; probably not. Therefore, the underlying wisdom in establishing an areawide regional planning agency has been amply justified. The Nassau-Suffolk Regional Planning Board was created in 1965 by adoption of ordinances and resolutions by the Boards of Supervisors of Nassau and Suffolk, in accordance with provisions of the General Municipal Laws of New York State. As the solutions to economic and social problems become increasingly regionwide in nature, having this agency with a proven track record in performance already in place will serve as a source of assurance to Long Island citizens.

It would be extremely shortsighted to view this plan as just another study—its pages like leaves on trees, deciduous and gone, once fallen to the ground. Its direct value is in its use as a working document, important to the life-styles of future generations and business growth. Indirectly, the applicability of its analyses and findings renders it of national importance and in turn assures national recognition of Long Island as a homogeneous entity with identity well beyond its false reputation as simply a bedroom community.

There is a legal expression, "The evidence speaks for itself." So do the following pages. In the main, Long Island's water supply, derived solely from its own groundwater sources (and not even partially from Connecticut—the erroneous impression lingers) is adequate in terms of quantity. Tunnels from upstate or other outside sources are not only unnecessary, they are equally foolish even to consider. But there is the point-blank question of preserving the quality of our water. This stern challenge must be met by the courage of government supported by an informed constituency, sensitive to parochial interests, yet willing to override them for the common good. Effective implementation will provide bread-and-butter benefits in preserving home values, protecting the quality of life and sustaining economic strength.

Elsewhere in this document the reader will find amply justified expressions of appreciation to the numerous private citizens who served on the technical and citizens advisory committees. Policy was always determined by Board members, past and present. Their cooperation along with that of elected officials was crucial to the completion of this work. In this regard our lasting gratitude is enthusiastically extended to the following: to former founding member and Chairman, Leonard W. Hall; former County Executives Ralph G. Caso and H. Lee Dennison; County Executives John V. N. Klein and Francis T. Purcell; former Board members, Thomas Halsey and Robert Flynn; and present Board members: Vice Chairman Seth Hubbard, Vincent Balletta, Robert Bell, Winfield Fromm and John Wickham. Finally, words are often weak and fruitless when attempting to describe the single most important contribution. For that I simply conclude with where it all began, was and will be, by use of proper noun: Dr. Lee E. Koppelman.

Harold V. Gleason
Chairman

ACKNOWLEDGEMENTS

This program has been a collective endeavor in the best sense of that term. Interdisciplinary skills, involving a wide array of scientific talents, and administrative inputs from all levels of government were required. The program could not have been satisfactorily completed without the enthusiastic participation and support of all persons involved in the development of the Nassau-Suffolk Areawide Waste Treatment Management Plan. The dedication and pride of involvement displayed by the members of the various county departments, consulting firms, and members of the public, were indeed a marvel, and credit for the products of this program must be shared with these people. We have tried to acknowledge their contributions by including their names on the Participation Page. We sincerely hope that we have not inadvertently omitted recognition of anyone. In particular, we owe a debt to our colleagues of the United States Environmental Protection Agency, Region II, who displayed as deep a committment to the interests of Long Island as any of the local representatives. Mr. Eckardt Beck, Regional Administrator, and his able colleagues, Mr. Conrad Simon, Mr. Charles Durfor, Mr. Anthony Conetta and others provided invaluable guidance and staff support. They were positive advocates for the program from its inception. Our requests were seriously considered and promptly acted upon—including bringing Federal scientific experts to our agency as specific problems unfolded. We enjoyed similar general support from the New York State Department of Environmental Conservation. Commissioner Peter Berle, Deputy Commissioner Theodore Hullar, Mr. Thomas Eichler, Mr. Michael O'Toole, Jr., Mr. Philip DeGaetano, Mr. Philip Barbato, Mr. Andrew Yerman, Mr. James Redman, and Mr. Wiacheslaw Fedoriw, ably represented the State's interests.

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Prefatory Comments

Introduction

The passage of the Federal Water Pollution Control Act Amendments of 1972 heralded a new era in environmental management. National interest and purpose was stated in the goal to achieve "water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water" by 1983, wherever attainable. It not only set forth a timetable for action but also provided some new approaches to solving the problems of our nation's polluted waters. For the first time there is a clear recognition that improved quality and the prevention of further pollution will also require changes in land use and management of growth in addition to the prevailing practice of building sewage treatment works. Non-point sources of contamination which result from construction and agricultural activities, highway runoff, widespread discarding of the residues of modern society, and the lack of control over animal wastes, etc. must now be considered. The Act is a landmark in three other instances. It provides for a comprehensive planned approach, requires strong citizen participation in the planning process and mandates a commitment from state and local governments to implement the results of the planning effort.

Section 208 of the Act specifically creates a comprehensive water quality management program to deal explicitly with both the treatment and the prevention of water pollution. The plans prepared under this program must include a process for meeting established water quality goals and must show that management institutions exist with sufficient financial and legal authorities to implement the plan; or that new institutional arrangements will be created to achieve this purpose.

The Nassau-Suffolk Regional Planning Board (NSRPB) was designated by Governor Malcolm Wilson in December 1974 as the regional planning entity to carry out Section 208 planning for Nassau and Suffolk Counties. Realizing that a program of this magnitude had to have the support and input from those governmental agencies that either have an interest in, or a mandated role to play in water pollution control, the NSRPB immediately established a Technical Advisory Committee (TAC) to assist it in the preparation of the plan. The initial voting constituency of the TAC included representatives from the Nassau County Departments of Health, Public Works and Planning. The Suffolk County participants were from the Departments of Health and Environmental Control and the Suffolk County Water Authority. The seventh member was the Executive Director of the Nassau-Suffolk Regional Planning Board who served as Chairman of the Technical Advisory Committee and Project Director for the overall program.

In addition to the seven voting members, representatives from the Interstate Sanitation Commission, Region II of the Environmental Protection Agency (EPA), the New York State Department of Environmental Conservation (NYSDEC), the United States Geological Survey (USGS), the Suffolk County Soil and Water Conservation District and the Soil Conservation Service (SCS), the Cooperative Extension Service (CES) and the New York State Department of Health (NYSDH) were invited to participate as resource members.

In accordance with the guidelines for Section 208, and prior practices of the Board in conducting other regional planning studies, the Citizens Advisory Committee (CAC) was created to provide input to the TAC from the general public, and to act as a forum for distributing the findings of the study to the general public.

The Program received a $5.2 million grant from the EPA to carry out the detailed work program necessary to comply with the requirements of the Act.

Between January 1975 and June 1978 the TAC, which was formed prior to the grant award in June 1975, met at least one day a week, first for the design of the Program and selection of consultants, and then for the general conduct of the Program. The CAC met bi-weekly during this period.

The consultants retained to carry out specific technical tasks were selected by national solicitation on the basis of merit. This single factor was one of the key elements in achieving the high level of competence displayed in the Plan.

Report Description

This report is a summary of the numerous working reports and studies prepared by the various consultants and member agencies of the project. It is also a reflection of the original workplan submitted to the EPA, with additional materials developed to meet amendments to the project which resulted from changes in the federal regulations, or work elements generated from requests made by the CAC. In addition to the working reports, six interim reports that summarize the technical documents have been prepared for public distribution. They are: (1) *Population Estimates and Projections 1975-1995,* (2) *Modeling Studies,* (3) *Surface Water Quality,* (4) *Groundwater Conditions,* (5) *Management Options* and (6) *Virus Study.*

This summary report constitutes the last in the general series. The Board also published a Soil Conservation Service study that discusses the impact of animal wastes as a major non-point source of pollutants to the ground and surface waters. The interim reports and the summary report affords the serious reader a reasonably sufficient exposition of the 208 Plan.

In response to the unusually large demand for these reports we have prepared this second printing in a two volume set. Volume 1 contains the Plan Summary. Volume 2 contains all of the previously printed Interim Reports and also contains the nitrogen studies conducted by Dr. Keith Porter of Cornell University and the analyses of the organic sampling study prepared by Energy Resources Company, Inc.

This presentation is in seven sections, plus a bibliographic data summary. *Section One—General Background*—contains a descriptive discussion of regional ground and surface water considerations. This portion has three segments. The first is a discussion of groundwater, including its major uses, existing quality and contamination sources. The second segment discusses the surface waters of the two counties in similar fashion. The third segment describes major options of structural and non-structural nature, and includes a description of the various evaluation and selection factors used in making choices.

Section Two—Assessment of Conditions—is devoted to an assessment of conditions, including population and land use, pollutant sources from point and non-point origin, and a discussion of transport mechanisms. Groundwater quality and quantity, and surface water quality are summarized to include the major findings of the study. The last segment of this chapter describes the marine, fresh water and terrestrial ecological conditions.

Section Three—Alternative Wastewater Management Programs—the major segment of this report, presents various wastewater management alternatives to control point and non-point source pollution. It includes structural and non-structural approaches ranging from sewer installations with varying degrees of treatment, to best management practices (BMP) for runoff control, fresh water conservation, watershed management and land use controls.

The first segment contains a listing and a brief explanation of the objectives that the planning options should achieve in order to insure public health protection, and the protection, enhancement and conservation of the natural resources—freshwater, marine, wetlands and terrestrial of the two counties.

The next segment contains a series of structural and non-structural plan alternatives that, in whole or in part, offer a suitable solution to a defined problem or objective. The alternatives relate both to the hydrogeological nature of the two counties, as expressed by eight distinct zones, and to the marine surface waters. Strong efforts were made to include all reasonable alternatives. In this fashion the public has a general scenario of the many ways in which waste treatment can be addressed, with some explanation of the constraints attendant to each solution, and the consequences thereof.

Section Four—Environmental Assessment—relates the environmental impacts for each of the Plan alternatives discussed in Section Three.

Section Five—Preferred Plan Alternatives—presents the options deemed by the TAC to achieve the objectives of water quality planning for Long Island in the most desirable fashion. Explanations and reasons for the selections are discussed.

Section Six—Citizen Participation—is a two-part discussion of citizen participation. The first portion (6.0—6.5), written by the Project Director, contains a history and critique of the creation, functions, activities and contributions of the CAC. The second portion (6.6—6.11), prepared by the CAC, discusses their critique of the process and planning options developed in the 208 Program.

Section Seven—Implementation—contains the recommendations for management responsibilities—existing, modified or new—to carry out the financing, design, construction, maintenance, monitoring or regulation of the Plan elements. Recommendations for amendments to existing laws or the enactment of new ones at various governmental levels are also mentioned.

Appendix A—Bibliographic Data Summary—identifies the range of data used to reach the plans' conclusions. It also contains a listing of the almost 175 reports and publications prepared by the TAC agencies and consultants in the conduct of the study.

Administrative Observations

The Section 208 effort discussed herein has proven to be challenging and rewarding. Since the Program is entirely new from a national point of view, it can serve as an example for other parts of the nation. An indication of the strengths and weaknesses, successes and failures resulting from this initial effort can assist in the formulation of continuing programs to be carried out in this Region and in other parts of the country.

First among the strengths, we should acknowledge the strong interest and support received from Region II of EPA, which recognized that Nassau and Suffolk Counties are completely dependent on groundwater for potable water supply; have a varied and complex marine environment surrounding the entire Region; and contain areas of human settlement that represent

the full triad of planning concerns, *i.e.,* urban, urban-suburban interface, suburban-rural interface. The recognition by EPA that all three impact the natural environment led to the granting of sufficient funds—well beyond the normal allocation formula—to carry out the program.

Second among them was the full cooperation in the best professional sense, of the various members of the TAC who represented organizations with sometimes strong and differing institutional biases. Third was the very high caliber of talent that exists in public service at all levels of government and which is evidenced in the results of this Study. A fourth source of strength was the impartial selection of consultants by the TAC without any external political or parochial controls to inhibit its national search for the most competent firms; and a fifth was the establishment of a strong CAC, who were self-organized rather than selected by the agency.

The weaknesses of the Program were primarily of an administrative and timing nature. Two major limitations were imposed by the insistence of EPA on plan completion, including approval by the Governor, within a two-year planning period. Although the Act requires Plan development within twenty-four months, provisions existed for project design prior to this phase for up to twelve months. EPA determined to dispense with the pre-planning opportunity. In a sense this fiat is the antithesis of the planning concept itself. The Agency was forced to "learn on the job," thus creating plans by work assignment amendments. The problem was further compounded by the changes in guidelines, regulations and reporting procedures imposed by EPA after the contract and original work program were agreed upon and approved. In essence, EPA was also "learning on the job."

The remedy for these time constraints was either to curtail some of the work efforts or to rigorously manage the productivity of staff and consultants. We chose the latter course, thus placing all of the participants under constant pressure. This in not an optimal administrative choice.

The second shortfall may develop at the end of the planning period. Implementation, in the full sense of the term, often can take as much time as the Plan development process itself. If the intent is to achieve the sincere acceptance and approval of the general public and various elected and appointed officials—and not be the result of default—then the planners and CAC members must have adequate opportunity to present the case. This was attempted in part during the two year period. The Project Director delivered nearly 50 presentations to various governmental, professional, civic, environmental and business groups in the two counties. Other members of the TAC, CAC, and consultants also made many presentations. However, the Plan options themselves could only be finalized at the end of the planning process. Thus, the public information phase has to extend beyond the first two years. This is particularly the case in a Region of almost three million people. One, or even several, "public hearings" are simply not adequate.

The Act also prohibited any work that might have been deemed research, thereby requiring agencies to use only existing techniques. Strict interpretation of this clause served to limit the comprehensiveness of the Study. A detailed example of this last point is discussed in *Section Six—Citizen Participation.*

Lest this litany of pitfalls, pratfalls and problems be deemed a dire prediction, let me stress that I do consider the 208 Program as a challenge and opportunity. Granted, the first generation of plans may show scars and evidence of misfit between expectation and achievement. Nevertheless, optimism should be the hallmark. The Nassau-Suffolk Comprehensive Water Quality Management Plan does address and satisfy the requirements of Section 208 of the Act.

This is the first national effort to cope with major environmental issues on a multi-disciplinary and interdisciplinary basis as part of comprehensive regional planning. Any successes from the first programs should strengthen future efforts and also provide the methodological base for solving other environmental problems.

July 7, 1978

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