UNC-WRRI-74-94

ENVIRONMENTAL STATEMENTS AND WATER RESOURCE PLANNING IN NORTH CAROLINA

By

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The work upon which this publication is based was supported in part by funds provided by the Office of Water Resources Research, Department of the Interior, through the Water Resources Research Institute of the University of North Carolina as authorized under the Water Resources Research Act of 1964.

Project No. A-063-NC
Agreement No. 14-31-0001-3833, F. Y. 1972

June 1974

ACKNOWLEDGMENTS

Most of the interviewing and much of the data collection for this study was done in the summer of 1972, with the assistance of Richard N. L. Andrews, who had just completed his excellent study of the 1970-71 experience of the U.S. Army Corps of Engineers, Tennessee Valley Authority, Soil Conservation Service and Atomic Energy Commission in preparing environmental statements under provisions of the National Environmental Policy Act of 1969 (NEPA). Additional data collection and background research was done by the following graduate students in the Department of City and Regional Planning: John Edwards, who collected and analyzed the data on the population of environmental statements and who analyzed environmental statements prepared by the State Division of Highways; Paul Fisher, who analyzed the Chicod Creek case; Peter Petrall, who studied the Falls Lake project; David Morris, who made a background study of NEPA and the Council on Environmental Quality policies and guidelines for submission of environmental statements; and Lawrence Clark who provided basic information on activities of the Soil Conservation Service in North Carolina.

The cooperation of many State and Federal agencies in providing information, granting interviews and reviewing draft materials is gratefully acknowledged. Special thanks are due to the staffs of Wilmington District, U.S. Army Corps of Engineers, the Soil Conservation Service, the State Clearinghouse and Information Center, the State Division of Highways, and the Department of Natural and Economic Resources including the Office of Water and Air Resources.

Special thanks are also due to Karl Elfers who prepared the Figures and to Kathy Mayberry who typed this final report.

ABSTRACT

The National Environmental Policy Act of 1969 (NEPA) typifies an important shift in national priorities and values toward environmental quality. In particular, the requirements in the Act for preparation of environmental statements for major actions of the Federal Government have forced Federal development agencies, such as the U.S. Army Corps of Engineers, Federal Highway Administration and Atomic Energy Commission, for the first time to give detailed examination to the environmental consequences of their plans and proposed projects. This national Act and the 1971 North Carolina environmental policy act have had significant consequences for North Carolina water resources. Since 1971, environmental statements have been prepared for practically all new Federal and State project proposals in North Carolina having significant effects on water resources. In addition, Federal water-resource agencies, including the U.S. Army Corps of Engineers, Soil Conservation Service and Tennessee Valley Authority have prepared or are now preparing environmental statements on projects that were authorized before the enactment of NEPA. In accordance with procedures established by the Federal and State governments, all draft and final environmental statements flow through a clearance procedure that enables Federal, State and local public agencies and citizens' groups effectively to review and comment on the statements from their special points of view.

The environmental review and clearance procedure is working effectively in North Carolina. In actual operation, the procedure has resulted in some changes in the timing and/or design of a number of water-resource

projects of the Corps of Engineers, Tennessee Valley Authority and Soil Conservation Service. In part this has been the result of suits brought in Federal Courts by environmental and local interest groups on a few projects--New Hope Lake, Falls Lake and Chicod Creek. Equally significant, the environmental statement requirements of NEPA have led to major changes in agency planning procedures in which environmental factors are considered from the earliest stages of planning and public participation is emphasized. Such changes have been made by Federal and State water-resource, highway and nuclear power planning agencies. Also, Federal water-resource programs in North Carolina have been affected indirectly; the backlog of approved projects is being examined critically for environmental impacts, and new plans and programs are likely to de-emphasize stream channelization and major reservoir construction.

The quality of environmental statements prepared on projects affecting water resources in North Carolina, initially poor, has been improving as agencies have gained experience in environmental analysis and as greater resources have been applied to the task. Further improvement is needed however, especially in State government where the expertise available to work on environmental review and analysis is quite limited.

The major benefits that North Carolina has already gained from the operation of the environmental statement process can best be assured if the State builds on the experience gained and moves effectively to revise its planning procedures, policies and institutions to incorporate environmental quality considerations throughout. If this is done, environmental statements will become reports of successful harmonization of environmental

and developmental goals rather than indications of differences yet to be resolved.

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SUMMARY AND CONCLUSIONS

Enactment of the National Environmental Policy Act (NEPA) in early 1970 set in motion an activity that has had great significance for water resource planning and management throughout the nation--the preparation, review and clearance of "environmental statements" for all Federal agency actions which have significant effects on the "quality of the human environment." Comparable legislation in North Carolina in 1971--the North Carolina Environmental Policy Act (NCEPA)--established almost identical requirements for environmental statements for actions of state agencies. This report documents and assesses the North Carolina experience since 1970 with environmental statements as required by NEPA and NCEPA insofar as they effect North Carolina water resources. The major findings of the report are as follows:

1. Most environmental statements affecting North Carolina water resources have been prepared under provisions of Section 102(2)(C) of NEPA, by a few Federal agencies, including the U.S. Army Corps of Engineers, Soil Conservation Service, Tennessee Valley Authority, Forest Service, Atomic Energy Commission and the Federal Power Commission, and, for Federal-aid highways, by the North Carolina Department of Transportation and Highway Safety. In both number and importance to North Carolina water resources, environmental statements of the Corps of Engineers are dominant, reflecting the major role that the Corps has played in water-resource development in the state. Next in importance to water resources are the environmental statements of the Atomic Energy Commission on a few very large nuclear power plants (Chapter IV).

2. Because of the long delay associated with the Chicod Creek suit, the Soil Conservation Service has filed environmental statements on only three small watershed projects; the agency has a substantial backlog of environmental statements in process. Because of initial uncertainty on applicability of these NEPA requirements to the Environmental Protection Agency, this agency has also submitted but one environmental statement in North Carolina under its wastewater treatment grant program (Chapters IV and V).

3. Only a small number of environmental statements affecting the State's water resources have been prepared since March 1972 under provisions of the North Carolina Environmental Policy Act of 1971. Most of these statements have originated in the Department of Natural and Economic Resources and Wildlife Resources Commission. It appears likely that some State actions have been taken without first preparing environmental statements as required by NCEPA. Because of the absence of any procedure of follow-up, the extent of these omissions is not known (Chapters IV and V).

4. The procedure for State and local clearance of both NEPA and NCEPA environmental statements has been quite effective (1) in providing timely information on, and access to, the statements to interested state and local agencies and citizen groups, and (2) in providing for the assembly and general coordination of the comments of state and regional clearinghouse agencies, and the timely transmission of these comments to the Federal or State agency originating the environmental statements. Especially effective has been the centralizing of the environmental statement clearance procedure in the Clearinghouse and Information Center, the same unit of the Department of Administration which has responsibility for state and regional clearance

of Federal grant proposals under provisions of U.S. Office of Management and Budget Circular A-95 (Chapter III).

5. The bi-monthly North Carolina Environmental Bulletin of the Clearinghouse, which lists all NEPA and NCEPA environmental statements as filed with the Clearinghouse, serves as an excellent source of information to interested groups and the general public. The Bulletin's coverage could be expanded to include information on other actions of Federal agencies on projects, including notices of public hearings, that have environmental significance (Chapters III and IV).

6. Most Federal agencies have on their own initiative given wide distribution in North Carolina to both draft and final environmental statements among local public and private agencies and groups that are likely to be affected or to be especially interested in a specific proposal. The performance of agencies on this activity has improved greatly in the past two years. The Corps of Engineers has an especially good record of providing access to its environmental statements (Chapters IV and V).

7. Until recently, most environmental statements affecting North Carolina water resources prepared under provisions of NEPA concerned projects either under way or authorized prior to 1970. This backlog of "pipeline" projects has now been substantially reduced (Chapter IV).

8. Since 1970, both National and State policies, as expressed in legislation, administrative actions and court decisions, have placed great emphasis on environmental quality values. The requirements of NEPA and NCEPA for preparation and review of environmental statements have enabled reconsideration by public agencies and interested groups of already committed

projects from the viewpoint of environmental quality values. In some important cases, such as New Hope, Chicod Creek, and Mills River water resource projects, and the Shearon Harris Nuclear Power Plant, this reconsideration has led or may lead to major modifications in the project to accommodate environmental values (Chapters I and V).

9. This reconsideration of projects has not been accomplished without considerable strain. At the outset some agencies adopted a "wait and see" attitude, and resisted the preparation of environmental statements for projects already authorized or under construction until forced to do so by Court action. The Chicod Creek Court case is the outstanding example; it has become the national test case for the policy and program of stream channelization (Chapter V).

10. As a result of the increased emphasis on environmental quality values since 1970, Federal and State development agencies including the Water Resources Council, Corps of Engineers, Soil Conservation Service, Tennessee Valley Authority, Atomic Energy Commission, and the U.S. and North Carolina transportation agencies have revised or are revising their procedures for planning to consider environmental quality values and consequences from the earliest stages of their planning processes. As these procedures become effective, the role of environmental statements will change somewhat. No longer will it be necessary for the statements to be used primarily as a means of assessing environmental effects of already-formulated projects; instead, the draft and final statements will serve more as a report to interested parties and decision-makers of agreed-upon accommodations of environmental, developmental and other values accomplished during the plan formulation stage. It is clear that full consideration

of alternatives must occur well before preparation of the draft environmental statement

11. Preparation, clearance and review of environmental statements represent a substantial work load for many of the agencies involved in the process. This has been particularly true for major projects in the "pipeline," including projects under Court litigation. For example, the revised draft environmental statement of the Corps of Engineers for Falls Lake has 509 pages in the main report and 1826 pages of appendices. In most agencies the increased work load has been handled largely by diverting resources from other activities, although some new personnel have been hired and additional funds for outside studies have been obtained (Chapter V).

12. At the outset, the preparation, clearance and review of environmental statements was quite perfunctory; the NEPA requirements were new and untested and the additional work fell upon existing fully-committed staffs. Although the quality of environmental statements and reviews of them have gradually improved, it is clear that agencies did not apply adequate resources to the activity, given the heavy workload involved in preparing and analyzing environmental statements for projects in the pipeline. As interpreted by the Courts, NEPA appears to involve nothing less than the complete review of all outstanding projects on environmental grounds (Chapter V).

13. There are diverse and sometimes conflicting views in State government on the benefits and costs of the environmental statement process. On the one hand, the environmental statement requirement is viewed positively at top levels in the Department of Natural and Economic Resources and in

the Wildlife Resources Commission as providing a means of injecting natural system values into the development planning and decision-making process. On the other hand, water-resource planning and regulatory agency staffs, while conceding the utility of environmental statements in reflecting environmental values especially for "pipeline" projects, emphasize more direct methods of building in environmental values in water-resource plans and programs such as changes in the planning process to bring environmental quality considerations into early stages of planning. At the extreme, environmental statements are viewed as unnecessary "paper shuffling," involving considerable waste of time, but apparently required because of strict Court interpretations of NEPA. On the other hand, non-governmental environmental groups, such as the Sierra Club and the Conservation Council of North Carolina, are firm supporters of environmental statements, viewing them as providing public interest groups with a strong means of influencing decisions affecting the environment, via administrative or court actions (Chapter V).

14. Federal and State agencies and environmental interest groups all welcome the trend toward consideration of environmental quality values and effects early in the planning process. But environmental interest groups wish to retain the current strong emphasis on preparing draft and final environmental statements toward the end of the agency's planning process. Some view the environmental statement as an end in itself; others, as one tool in a multiple-objective planning process in which there is full public participation. They view these statements as an effective means of insuring that environmental values are given appropriate

consideration. Water-resource development agencies, however, emphasize the importance of reconciling environmental and developmental values in the plan formulation process so that final environmental statements become more a reflection of the resolution of issues than of sharply opposing viewpoints.

15. The role of environmental statements in North Carolina water-resource planning and policy-making will be affected by major changes now being made in Federal and State water-resource planning and management. At the Federal government level the new Water Resources Council guidelines require all Federal water-resource development agencies to consider environmental quality as a major planning objective, along with national economic development. Also under the 1972 amendments to the Federal Water Pollution Control Act, states and regional agencies must develop water quality plans and implementation programs on both river basin and urban-metropolitan bases, under guidelines established by the Environmental Protection Agency. This emergence of positive planning for environmental quality of water resources by Federal, State and regional agencies may pre-empt or supplement the key role of safeguarding environmental values played by NEPA environment statements during the past three years. However, continued existence of the environmental statement requirement will serve as an additional force for consideration of environmental values in water-resource planning (Chapters I and V).

16. Prior to 1970, environmental groups had only limited influence on the water-resource planning and decision process. Since 1970 they have had greatly increased access to the process primarily through review of draft environmental statements and subsequent court action based upon NEPA

requirements for preparation of such statements. The revised planning procedures of the Corps of Engineers, Soil Conservation Service and the North Carolina Department of Transportation and Highway Safety provide greatly increased access to all interested groups, including environmentalists, via public meetings and periodic consultation throughout the planning process. A current example is the extensive public participation in the Corps' Crabtree Creek study. The major question here is whether these groups, given their limited resources, will be able to function effectively in the detailed planning activities, and whether they will be encouraged to participate in the crucial process of formulating and selecting alternatives (Chapter V).

17. The quality of analysis underlying environmental statements has improved since the first statements were hurriedly prepared in late 1970. With few exceptions, these early statements were quite poor. State agencies and environmental groups were quite critical of the quality of analysis in statements for a number of important water-resource projects, including Chicod Creek, New Hope Lake, Clinchfield Lake and Mills River Reservoir, and the Court has been critical of the quality of the Chicod Creek environmental statement. A number of environmental statements on highway projects were found to be superficial. With few exceptions, the level of sophistication of environmental analysis in the statements and in the reviews by state and local agencies is not high. A need has been expressed by State officials for a methodology for environmental review and analysis suitable for use by State agencies.

18. Preparation, review and clearance of environmental statements has now apparently become a routine exercise, accepted by all parties at

interest. There is a danger that the very routine nature of the process, and the relatively trivial nature of environmental consequences in many instances, will sap the vitality of the process, in terms of being an effective means of resolving environmental-development issues. This danger can best be avoided by establishing the environmental statement as an integral part of a planning process in which environmental quality considerations are built in at all stages. It is necessary to build a capability for environmental analysis in the various agencies of State government that can be put to use on water-resource problems and issues.

19. Although NEPA and NCEPA appear to cover adequately the environmental aspects of Federal and State construction and development projects, major private developments, often involving extensive land developments with significant environmental effects, are not adequately covered by the environmental statement process. Only at the stage when a Federal or State permit is required, often after private plans are well developed, does the environmental statement process come into play. This major deficiency may be overcome in part by the operation of the Coastal Area Management Act of 1974, and by similar legislation for the mountain and Piedmont sections of the State when and if enacted.

20. The Department of Natural and Economic Resources has established a procedure, which is working effectively, for coordinating the comments of its constituent agencies on environmental statements and for developing a single Departmental position when necessary. In contrast, no effective procedure is operating to develop an overall State position on projects where State departments have differing views. The Clearinghouse does not serve this purpose, and the Council on State Goals and Policy, which was

assigned this responsibility for environmental statements prepared under NCEPA (but not NEPA) has been largely inactive. This deficiency is part of the larger problem facing the Governor and the Department of Administration of developing a single State position on controversial issues covering the full range of policies.

RECOMMENDATIONS

1. The State should take a more positive approach toward making the environmental statement process work, but should seek to adapt the process to fit a broader approach which builds environmental quality into all stages of an overall planning process. To this end:

2. The State should undertake a systematic review of all water-resource projects authorized for construction by the U.S. Army Corps of Engineers, Soil Conservation Service and the TVA which have been inactive for five years or more to determine whether they should continue to receive State support. The State should seek cancellation of projects considered to be obsolete; no environmental statements should be prepared for such obsolete projects. This review should be carried out initially by the Department of Natural and Economic Resources.

3. The State should complete the development of a general policy on stream channelization that represents a resolution of the conflict between environmental and developmental objectives, to serve as a guide in the preparation of State comments on environmental statements, and in State participation and support of future planning of such projects by the Soil Conservation Service and the Corps of Engineers. Similarly, the State should complete development of policies on sedimentation especially as related to highway and building construction. The Department of Natural and Economic Resources is the appropriate agency to develop such policies.

4. The State should implement the multiple-objective approach of the Water Resources Council's Principles and Standards, in which the environmental quality objective is considered along with the developmental objective,

in all State activities involving the planning and management of water resources. This will require that State fishery, wildlife and conservation agencies participate effectively in the plan formulation stage of the planning process, so that plans can be evolved which can command the support of these agencies.

5. The State Department of Administration should conduct a study of the overall operation of the Clearinghouse procedure so as to improve its effectiveness in disseminating information on specific Federal actions affecting the environment and land uses to State and regional agencies and to interested non-governmental groups within the context of the entire problem of effective functioning of intergovernmental relations. The Department should also study the problem of how best to reconcile divergent views of state agencies and develop a single State position on Federal projects and actions processed through the Clearinghouse under provisions of Circular A-95 and NEPA.

6. The State should continue its policies and improve its performance of promoting public participation throughout the planning process in the planning of all regional, State and Federal projects affecting water resources. The Departments of Administration and Natural and Economic Resources should be the lead agencies in this effort, and the resources of the North Carolina Environmental Education Program should be used to this end.

7. The State should consider establishment of a Water Resources Council, chaired by the Secretary of Natural and Economic Resources, to serve a coordinating function for the water-related activities of the various departments including Agriculture, Transportation and Highway

Safety, and Human Resources as well as Natural and Economic Resources.

8. The State should encourage and support research on methodologies and tools for environmental assessment and analysis especially as concerned with water and related land resources. The capabilities of the UNC Water Resources Research Institute and the UNC Council on Environmental Studies should be utilized, and support should be provided to this end.

9. The State should increase its competence in environmental analysis; a special unit should be established in the Department of Natural and Economic Resources with the responsibility for developing criteria and standards for environmental analysis and providing expert advice to specialists on this subject.

10. The State should take immediate steps to insure that environmental effects of major private land developments are identified and analyzed early in the planning of these developments, so that appropriate actions can be taken on a timely basis to safeguard environmental values. Appropriate legislation, if needed, should be sought from the next Legislature.

11. The State Department of Administration should conduct a study of how the environmental analysis planning and policy responsibilities now located in the State Planning Division and the Department of Natural and Economic Resources can be effectively coordinated with the land use planning and policy responsibilities for the Coastal Plain as recently enacted by the Legislature, and with similar responsibilities for the Mountain Region which will be considered by the next Legislature. In this connection, it is especially important that State and regional water-resource planning activities be effectively coordinated with the emerging land use planning and policy activities.

CHAPTER I

THE LEGISLATIVE AND POLICY SETTING

The passage of the National Environmental Policy Act of 1969 (NEPA) ushered in a new era of national development policy and practice. It represented the adoption as national policy of an environmental quality objective to be considered along with the well-established objectives of economic growth, economic stability and full employment in national decision-making. Above all, one provision of the Act, Section 102(2)(C) was to have a major effect on water-resource planning and development, especially but not exclusively at the Federal Government level. This Subsection called on all agencies of the Federal Government to:

> Include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on--
>
> (i) The environmental impact of the proposed action,
>
> (ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented,
>
> (iii) Alternatives to the proposed action,
>
> (iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
>
> (v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Subsection 102(2)(C) further provided that:

> Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State,

> and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes.

As it turned out, this requirement for statements has led to a review and analysis to this end of most currently active U.S. Army Corps of Engineers, Soil Conservation Service and TVA water-resource projects that were not already under construction by January 1970. After some administrative and legal testing of the requirements of Section 102(2)(C), it became apparent that these provisions of the Act were being interpreted broadly by the Congress, the Executive Branch and the Courts (Anderson, 1973, pp. 275-292). Accordingly, the Federal water-resource agencies, as well as other Federal agencies such as the Department of Transportation and the Atomic Energy Commission whose activities impinge on water resources, prepared detailed procedures and established major work programs to meet the requirements for preparing, circulating and revising draft and final environmental statements on most current, outstanding project proposals, as well as on all new proposals generated by their on-going planning processes (Andrews, 1972; U.S. Council on Environmental Quality, 1973, pp. 234-251).

Along with a number of other states, North Carolina in 1971 passed an Environmental Policy Act (NCEPA) (N.C. Council on State Goals and Policy, 1972), closely patterned after the National Act. The North Carolina Act provides that State agencies include "in every recommendation or report on proposals for legislation and actions involving expenditure of public moneys for projects and programs significantly affecting the quality

of the environment of this State," a detailed statement by the responsible official covering the same five points contained in Section 102(2)(C) of NEPA, plus one other involving mitigation measures proposed to minimize the (adverse environmental) impact. NCEPA also provides that before completing such detailed statement, the responsible official consult with and obtain comments from any agency with jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of detailed statements and comments are to be made available to the Governor, to agencies designated by him, to regional clearinghouses, and, upon request, to the public and to counties, municipalities, institutions and individuals. NCEPA further authorizes cities, counties and towns to require submission of such environmental statements by any special purpose unit of government and private developer of a "major development project," (which is defined as including without limitation "shopping centers, subdivisions and other housing developments, and industrial and commercial projects," but excluding any projects of less than two contiguous acres in extent). Although the 1971 Act was scheduled to expire in 1973, the Legislature extended the life of the Act to 1977.

The overall effect of the Federal and State legislative provisions for environmental statements insofar as North Carolina water resources are concerned is practically to insure that no major public or private action that has a significant effect on any of the State's water resources can be taken prior to a review and analysis of beneficial and detrimental effects on the resources in their many dimensions of environmental quality as viewed by many different public and private agencies and groups.

The requirements of NEPA and NCEPA for preparation of environmental statements have been superimposed on the established Federal, State and local water-resource planning, development and policy structure in North Carolina. The disparate nature of North Carolina water-resource planning has been recently documented (Moreau, 1973, Chapters I and II). According to Moreau, state water-resource planning has been institutionally and functionally fragmented into surface water, ground water, coastal waters, water quantity and water quality--all in relative isolation to land use planning. Statewide planning has been narrow in perspective, reactive to initiatives of the Federal Government and the private sector, and of relatively low visibility. Most water-resource developments have been planned and executed either by Federal agencies such as the U.S. Army Corps of Engineers and the TVA for major water projects, and the Soil Conservation Service for small watershed projects, or by local agencies--cities and towns--whose main concern is with relatively small-scale water supply and sewage treatment projects.

The injection of the NEPA and NCEPA requirements for environmental statements into the water-resource planning and policy setting in North Carolina has brought to the fore a number of problems and issues that will be explored in the Chapters to follow. In assessing the North Carolina experience with environmental statements, it will be helpful to make use of a planning and decision model that combines water-resource planning with planning for environmental quality, as described in the next chapter.

CHAPTER II

A PLANNING AND DECISION MODEL

The principles and practices of water-resource planning at the Federal Government level are based on the so-called rational planning process as expounded in the literature of public investment and planning theory. As summarized in the basic report of the Harvard Water Program (Maass et al., 1962), the process consists of four sequential steps:

(1) establishing objectives;

(2) translating objectives into planning criteria;

(3) formulating "best" plans in accordance with the criteria;

(4) evaluating consequences of plans so formulated.

At least since the Water Resources Council adopted and the President approved the water-resource planning guidelines in 1962 (President's Water Resources Council, 1962), all Federal water-resource planning and development agencies have had a common basis for applying the rational planning process in their planning and development activities. Although these guidelines gave some recognition to the objective of preserving natural resources, primary emphasis was on national and regional development in the context of the national economic efficiency objective. As environmental quality became more and more highly valued during the 1960's, however, a number of studies of the Water Resources Council reflected this shift in values and led toward proposed revisions of the 1962 guidelines that gave greater emphasis to environmental values. Thus, by the time that NEPA was enacted in late 1969, the Water Resources Council had already incorporated an environmental quality objective in its preliminary

drafts of revised principles and standards for water-resource planning (Water Resources Council, 1971). After undergoing an extensive and detailed review, which included a series of public hearings held by the Water Resources Council throughout the nation, these revised principles and standards were approved by the President and took effect on October 25, 1973 (Water Resources Council, 1973). These newly-adopted guidelines for Federal water-resource planning establish two primary national objectives, (1) economic development and (2) environmental quality; furthermore, separate systems of accounts and sets of standards are specified for each of these objectives. Accordingly, all Federal water-resource planning studies in the future are required to incorporate consideration of environmental quality objectives, values and consequences throughout the entire planning process, from the very beginning of work to the completion of studies and preparation of the final planning report. It is clear, therefore, that the new water-resource planning guidelines promote one of the purposes of Sections 102(2)(A) and (B) of NEPA that environmental quality values and impacts be taken into account throughout the planning process and not merely after alternatives have been considered and a final plan has been adopted. In fact, all Federal water-resource agencies are now reviewing their planning procedures to bring them into conformity with the new Water Resources Council guidelines, including especially the provisions relating to the treatment of environmental quality elements and values.

The current, evolving relationship between Federal water-resource planning and environmental quality can be illustrated by means of a generalized public investment planning and decision model that incorporates

environmental quality. As shown on the left-hand side of Figure II.1, environmental quality considerations are introduced in the very first step of the process depicted by the model--problem definition--and are included in each subsequent step.

Only the bare bones of this model are presented in Figure II.1. Detailed formulations of water-resource planning in urban-metropolitan settings and of comprehensive metropolitan planning are contained in two 1971 reports by this author (Hufschmidt, 1971 a and 1971 b). Problems and issues of adopting environmental quality as a policy and planning objective were treated by the author in a 1971 article (Hufschmidt, 1971 c), while a land use guidance system planning process that incorporates environmental values was developed by Kaiser and others in a recent study commissioned by the Environmental Protection Agency (Kaiser, et al., 1974). In addition, the National Water Commission explored the issues of multi-objective water-resource planning in its recent report (National Water Commission, 1973, Chapter 10).

The major point here is that theoretical formulations of the planning process that incorporate environmental considerations are reasonably well developed in a number of different contexts: public investment, urban-metropolitan water resources, comprehensive metropolitan planning, and land use planning and guidance. Although the formulations differ as to details, they are in agreement on fundamentals. The formulations are also consistent with evolving planning practice in the field of water resources as reflected in the new Water Resources Council guidelines. It is realistic, therefore, to use the model depicted in Figure II.1 as a basis for analyzing North Carolina experience with environmental statements, inasmuch as both theory and practice are moving in this direction.

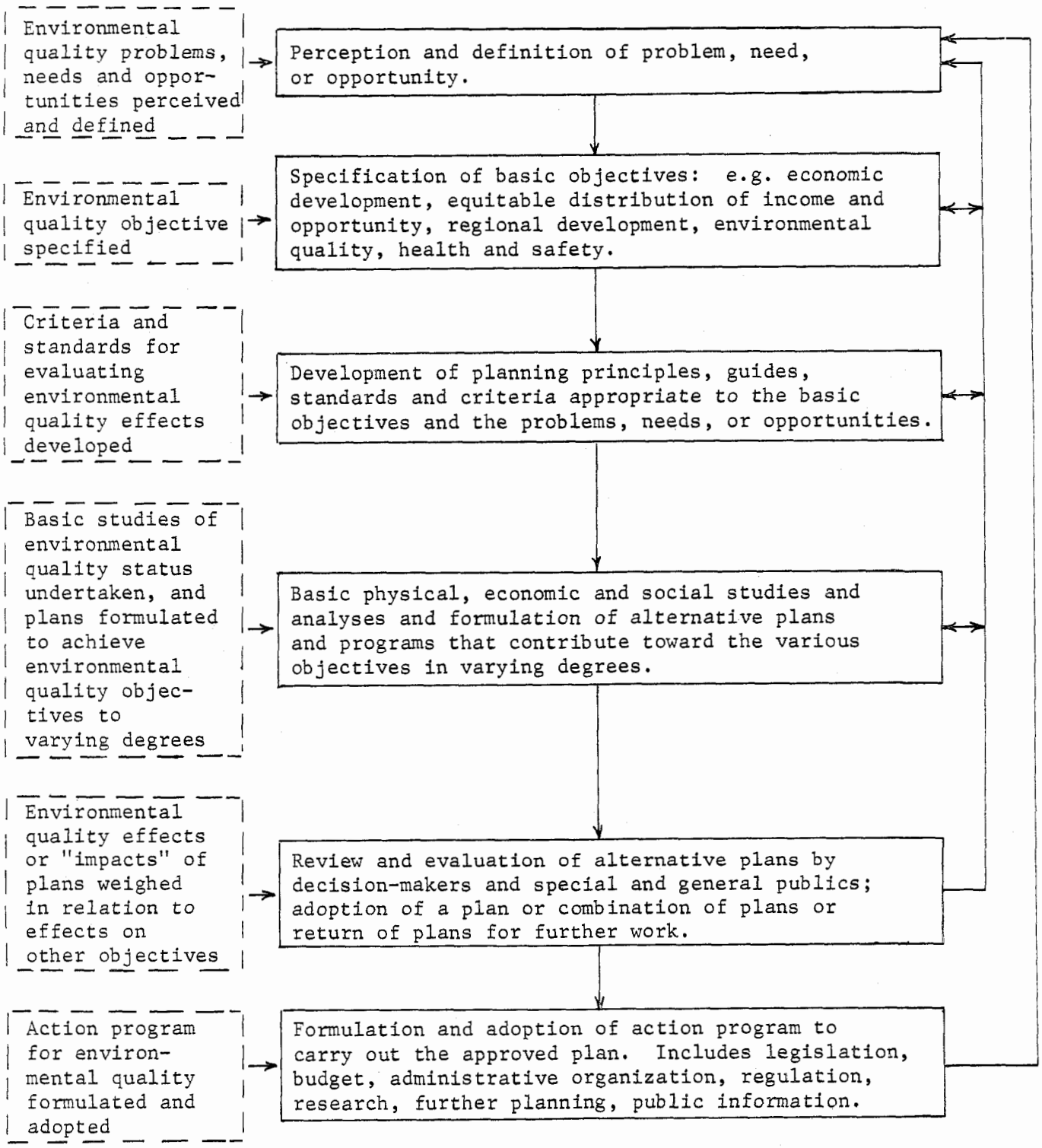


Figure II.1 A Public Investment Planning and Decision Model With Environmental Quality Relationships

In contrast to this future-oriented approach, up to now most NEPA-mandated environmental statements have been prepared only after a plan has been formulated. This is largely because many environmental statements prepared in the first three years of operation under NEPA have been either for projects already planned or well along in planning. However, environmental statements have now been completed or are being completed for most currently active projects and planning studies that were in the "pipeline" in 1970. Thus, for most future environmental statements for Federal water resource plans and proposals, it is reasonable to expect that the information and planning groundwork for environmental quality will have been well established in accordance with the Water Resources Council Planning guidelines, prior to preparation of draft or final environmental statements.

The situation is similar for other investment programs that involve Federal aid or Federal regulation. Thus, for Federally-aided highway projects and for nuclear power plants which require Federal licenses, environmental statements have been completed for most projects and proposals that were in the pipeline in 1970. Furthermore, the Federal Highway Administration, the North Carolina Department of Transportation and Highway Safety, and the Atomic Energy Commission have developed procedures to incorporate environmental quality considerations in early stages of their planning processes.

CHAPTER III

THE ADMINISTRATIVE SETTING

The far-reaching requirements of NEPA and NCEPA for preparation and review of environmental statements were superimposed on an existing structure and on-going process of interlocking Federal, State and local actions involving Federal and State regulatory, grant-in-aid and direct construction activities. Two structures and processes are especially relevant to this study: (1) State and regional clearance of local applications for Federal grants-in-aid, and (2) Federal-State-local water-resource planning, development and management activities. Following is a discussion of these two aspects as they relate to North Carolina.

The Clearinghouse Structure and Process

When the Council on Environmental Quality (CEQ) developed its interim guidelines in early 1970 to govern implementation of Section 102(2)(C) of NEPA (Council on Environmental Quality: Interim Guidelines, April 30, 1970), the decision was made to rely on already established procedures and administrative structures for the required State and local review of Federal environmental statements. These procedures and structures had been established in every State under provisions of U.S. Bureau of the Budget Circular No. A-95 (dated July 24, 1969), governing the review of local agency applications for Federal grants and loans for a large number of categorical programs. Under these procedures, each State was to establish a central clearinghouse, as well as a pattern of regional and metropolitan clearinghouses, for disseminating information on Federal grant and loan applications; it made sense to the CEQ and Office of Management and Budget (OMB)

staffs to use these established facilities for the processing of environmental statements.

As pointed out by Mogulof (1971), the purpose of Circular A-95 was to set up a "network of state, regional and metropolitan planning and development clearinghouses to receive and disseminate information about proposed projects; to coordinate between applicants for federal assistance; to act as a liaison between federal agencies contemplating federal development projects; and to conduct an evaluation of the state, regional or metropolitan significance of federal or federally assisted projects."

Circular A-95 represented a rationalization of a loose system of local, regional and state clearance of information on Federal actions that had evolved during the 1960's as the number and magnitude of Federal programs affecting State and local governments expanded manyfold. As early as 1966, Section 204 of the Demonstration Cities and Metropolitan Development Act called for all applications for loans and grants in a number of Federal programs to be submitted for review to any areawide planning agency which was designated to perform metropolitan or regional planning for the area within which the assistance was to be used (Brussat, 1973). The U.S. Bureau of the Budget (now the Office of Management and Budget) was given responsibility for developing the regulations for implementing Section 204.

This requirement was reinforced by Title IV of the Intergovernmental Cooperation Act of 1968 which called for improved coordination of Federal aid programs with the plans and objectives of State, regional and local agencies and governments, and directed the President to establish appropriate rules and regulations to this end (Brussat, 1973). Budget Circular A-95

was the Federal government's response to these two legislative initiatives. As reported by Wise (1971):

> Part I requires that state and areawide clearinghouses be notified by potential applicants for certain federal grants of their intent to apply, and that the clearinghouses and interested agencies and governmental units within the clearinghouse jurisdiction have an opportunity to consult with the applicant and attach comments to the proposal. These comments are only for the information of the federal funding agency and do not constitute veto over the proposal. The decision as to whether the applicant receives the grant requested is made by the federal agency. A-95 review is now applicable to some 100 programs in the planning and physical and social development areas.
>
> Part II provides for consultation between state and local officials and federal agencies planning direct development projects within their jurisdictions. These projects include construction of federal installations, public works, buildings, and the acquisition, use, and disposal of federal land and real property.
>
> Part III makes provision for gubernatorial review of federally-required state plans before submission to the federal agency.
>
> Part IV encourages gubernatorial designation of sub-state planning and development districts to provide consistent geographic base for the coordination of federal, state, and local development programs.

Application to North Carolina

North Carolina put Budget Circular A-95 into effect in December 1969 by setting up a State Clearinghouse and Information Center in the State Planning Division of the Department of Administration, to receive and circulate documents to be generated under Part I of A-95. Part IV of A-95 envisaged a pattern of regional and metropolitan clearinghouse agencies, generally organized as Councils of Governments, that would review and comment on local applications for Federal aid. In part to meet this need, Governor Scott on May 7, 1970 established 17 multi-county regions, together

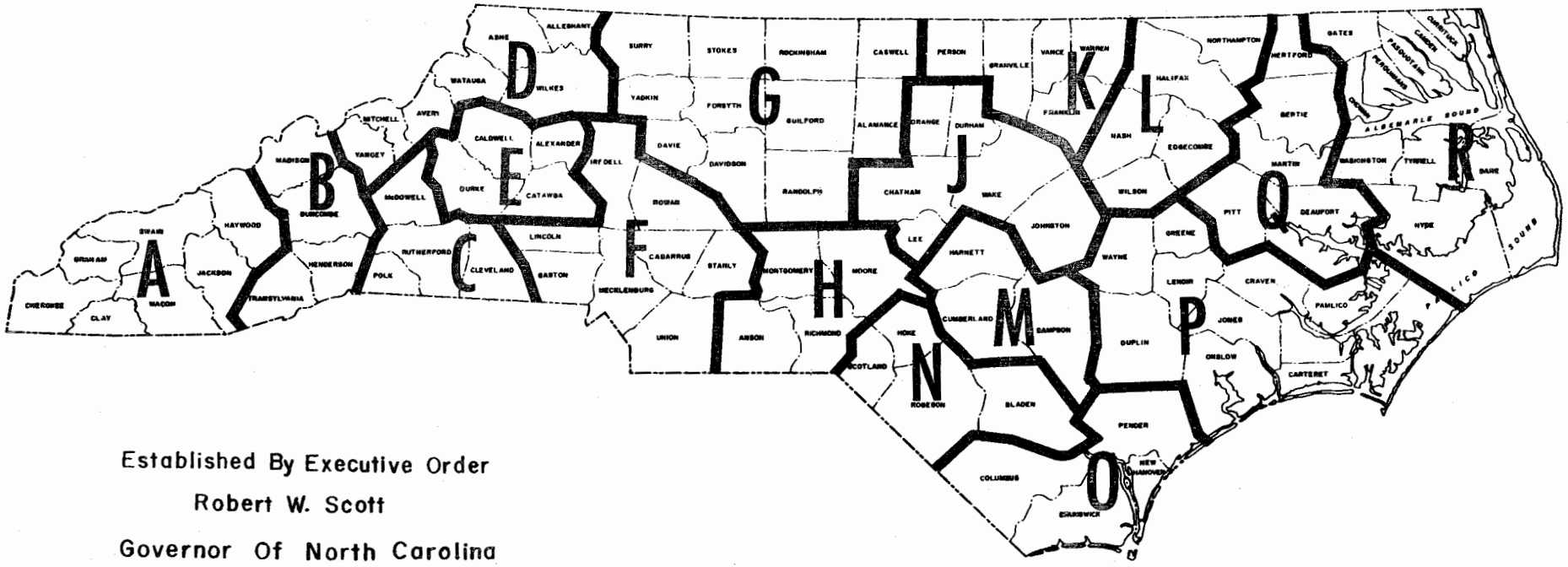
covering the entire State, to provide the basis for regional clearinghouses. These regions were superimposed on an existing pattern of regions, with different boundaries in some cases, but the intent was to adjust boundaries over time so that a single set of consistent regions would emerge. Thus by March 1971, seven regional clearinghouses had been designated on the new basis; an additional four were designated by June 1971, and, by October 1973 all 17 regional agencies had been designated as clearinghouses. Thus, the pattern of multi-county regions, as shown in Figure III.1, has become recognized as the basic system for regional coordination and planning in North Carolina.

A manual of procedures for A-95 project notification and review was issued in March 1971 by the State Clearinghouse and Information Center (N.C. State Clearinghouse Procedures Manual, 1971) to guide the State and regional clearinghouses in carrying out their activities under Part I of A-95. This manual was substantially revised and reissued in January 1974, to reflect changes in the provisions of Budget Circular A-95 (N.C. State Clearinghouse and Information Center, 1974).

This State and regional clearinghouse pattern was just becoming established in North Carolina when the CEQ guidelines for implementing NEPA provided that State review of environmental statements for Federal actions be handled through the State Clearinghouse procedures established under Part I of A-95 (Council on Environmental Quality, Interim Guidelines, April 30, 1970, and Guidelines, January 22, 1971). Accordingly, since late 1970 all Federal environmental statements have been processed through the State Clearinghouse and Information Center. Following enactment of the North Carolina Environmental Policy Act of 1971, the processing of environmental statements on

FIGURE III. 1

NORTH CAROLINA MULTI-COUNTY PLANNING REGIONS



Established By Executive Order

Robert W. Scott

Governor Of North Carolina

May 7, 1970

State actions mandated by the Act was also assigned to the State Clearinghouse (North Carolina Council on State Goals and Policy, 1972). Thus, since February 1972, the State Clearinghouse (and the relevant regional clearinghouses) have responsibility for processing State, local and regional agency comments on all Federal projects and other actions covered by provisions of Budget Circular A-95 and by Section 102(2)(C) of NEPA, and all State actions covered by NCEPA.

A related action that was to have significance for State environmental statements was the creation of the North Carolina Council on State Goals and Policy. Acting on a proposal by Governor Scott, the 1971 session of the North Carolina Legislature established this Council in the Department of Administration (N.C. Council on State Goals and Policy Act of 1971). This Council, composed of 15 citizen members, appointed for four-year terms with the Governor as Chairman, has broad responsibilities for proposing State goals and for recommending ways for State government to achieve these goals and to serve the interest of all citizens. Among the specific responsibilities of the Council are:

(1) to suggest short-run goals which should receive priority over the next three to five years,

(2) to evaluate the present structure and activities of State government and to recommend improvements,

(3) to identify areas of urgent need or inadequacies in present policies, and to recommend appropriate analyses for evaluating alternative courses of action, and

(4) to inform the citizens of the State's major problems, and involve the citizenry in study and debate of State goals and policy.

The Act provided that necessary staff services for the Council would be provided by the Department of Administration. The Council and its staff

thus provided a convenient means for achieving resolution of policy conflicts among State and regional agencies that might arise incident to the preparation and review of State environmental statements. As described below, the Council on State Goals and Policy plays an overall review and coordination role concerning environmental statements for State projects analogous to the role played by the U.S. Council on Environmental Quality for Federal projects.

Activities of the Clearinghouse

The Clearinghouse is the officially-designated agency to receive copies of draft or final environmental statements from Federal and State agencies under the provisions of NEPA and NCEPA. It is the responsibility of the Clearinghouse to refer copies of the statements to appropriate State agencies and to the appropriate regional clearinghouse for review and comment, and to transmit comments when received to the originating Federal or State agency. The Clearinghouse also is responsible for keeping the general public currently informed of the existence of environmental statements and for providing ready access to them.

The details of the clearance procedure will be discussed at length below. With respect to responsibility for public information, the Clearinghouse publishes the semi-monthly North Carolina Environmental Bulletin, which contains brief descriptions of all environmental statements filed with the Clearinghouse. Any North Carolina resident may receive the Bulletin regularly at no cost. The first issue of the Bulletin was dated February 1, 1972, and as of May 1, 1974, a total of 297 statements had been reported in the Bulletin. All environmental statements listed in

the Bulletin are available for public inspection, during regular office hours, in the Clearinghouse offices in downtown Raleigh. In addition, copies may also be inspected by the public at the appropriate regional clearinghouse offices. The Clearinghouse also reproduces copies of environmental statements, where practicable, at nominal cost, upon receipt of written requests. By means of the Bulletin, ready public access to the statements, and provision for their reproduction, the Clearinghouse provides timely and effective dissemination of information to the interested public.

Clearance Procedures

Procedures for clearance of environmental statements under provisions of NEPA and NCEPA are basically the same. The procedure for clearance of NEPA-mandated statements will first be outlined; the special features of clearance of statements under NCEPA will then be presented.

A. Federal Projects--A typical Federal water-resource project proposal of the U.S. Army Corps of Engineers would be processed through the State Clearinghouse as follows:

1. Draft Environmental Statement. Upon completion of a draft environmental statement for the project proposal, the applicable U.S. Army District Engineer sends copies of the statement to the Clearinghouse (as well as to the U.S. Council on Environmental Quality and to other Federal, State and local agencies with jurisdiction by law or special expertise to provide comments), with a request for comments within 45 days. The Clearinghouse sends copies of the statement, where necessary, to all State agencies that have indicated an interest in proposals of the Corps of

Engineers, and to the regional clearinghouse(s) in whose area the proposed project is located, with a request for comments to be returned in time for the Clearinghouse to forward comments to the District Engineer within the 45-day period.

2. Review and Comment. Upon completion of their review, State agencies and the regional clearinghouse(s) send their comments to the Clearinghouse. Regional clearinghouse(s) also send their comments directly to the District Engineer. The various offices in the State Department of Natural and Economic Resources--including the Office of Water and Air Resources, Earth Resources, Recreation Resources, Forest Resources, and Fisheries and Wildlife Resources--first send their comments to the Department of Natural and Economic Resources. The individual comments are coordinated, conflicts and inconsistencies are eliminated where necessary, and a single Departmental position is prepared for submission to the Clearinghouse.

3. Disposition of Comments. The comments of State agencies (or a summary of them) are sent by the Clearinghouse to the appropriate District Engineer within the specified 45-day period; copies are sent also to the U.S. Council on Environmental Quality, as required by CEQ Guidelines, and to the appropriate regional clearinghouse(s) for information. The District Engineer considers these comments, along with comments received from regional clearinghouses and other local and Federal agencies, in preparing a final environmental statement.

4. Final Environmental Statement. Upon completion of a final environmental statement (typically several months after receipt of comments on the draft statement), the District Engineer sends copies to the Clearinghouse (as well as to CEQ and to other interested agencies). The final

statement typically includes specific information on how agency comments have been taken into account in the revision of the draft statement; in addition, the regional, state and Federal agency comments are typically reproduced in full in an appendix to the statement.

5. Action on Final Statement. Notice of receipt by the State Clearinghouse of the final environmental statement is carried in the next issue of the Environmental Bulletin. State and regional agencies that wish to comment on the final statement send these comments direct to the District Engineer, as well as to CEQ, within the 30-day deadline established by CEQ for comments on final statements.

6. Final Disposition. The U.S. Army Corps of Engineers files with the CEQ all regional, state and federal agency comments on the final statement along with its comments, if any. This final referral to CEQ meets the statutory requirements of NEPA as spelled out in the CEQ Guidelines, and clears the way for the Corps to proceed with further action on the project proposal.

B. State Projects--Procedure for clearance of environmental statements on State projects is closely patterned after the procedure for Federal projects, with some modifications, however, to account for the fact that the State is the central figure (N.C. Council on State Goals and Policy, 1972).

A typical water-resource project of the Office of Water and Air Resources would be processed through the State Clearinghouse, as follows:

1. Environmental Statement. Upon completion of an environmental statement, the "responsible official" of the Office of Water and Air Resources

sends it to the State Clearinghouse through the Assistant Secretary for Resource Management, Department of Natural and Economic Resources. The Clearinghouse sends the statement, with request for comments, to

(a) all State agencies with jurisdiction or expertise;

(b) regional clearinghouse for review and concurrence by local governments and public notice;

(c) local governments which are to be contacted directly rather than through the regional clearinghouse.

In addition, a summary of the statement is published in the semi-monthly Environmental Bulletin to inform the general public.

2. Review and Comment. Upon completion of their reviews, State and local agencies and the regional clearinghouse submit comments to the Clearinghouse which summarizes these comments along with comments from the public and sends the summary report to the Department of Natural and Economic Resources. This process of dissemination, review and comment is to be completed in 30 days.

3. Disposition by Initiating Agency. The "responsible official" of the Office of Water and Air Resources (or, alternatively, of the parent Department of Natural and Economic Resources), after a review of the comments, determines:

(a) to approve the project and to notify the State Clearinghouse of intention to undertake the project, if further review of the project is not recommended by the staff of the Council on State Goals and Policy (CSGP) within seven days, or;

(b) to forward to the State Clearinghouse a request for the CSGP to review the project to resolve any environmental issues that have arisen during the agency review process, or;

(c) to submit a revised environmental statement to the State Clearinghouse for another review.

4. Action by State Clearinghouse. Based on the nature of action in Step 3, above, the State Clearinghouse:

(a) sends the original (or revised) environmental statement to the CSGP, along with information on the initiating agency's intent to proceed with the project, or;

(b) sends the original (or revised) environmental statement to the CSGP with the initiating agency's request for CSGP review, or;

(c) sends the revised statement to all interested agencies, repeating the process described in steps 1 and 2 above.

5. CSGP Action. The CSGP staff screens all environmental statements received from the State Clearinghouse. If the staff determines that CSGP review is warranted, either from its own analysis or because of a request from the initiating agency, the staff notifies the "responsible official" of the initiating agency within seven days. If no such review is considered warranted, the staff takes no action and the initiating agency is free to proceed with the project seven days after CSGP was notified of the agency's intention to proceed.

6. CSGP and Governor's Action. The CSGP recommends that environmental statements either (1) be approved, (2) be returned to the State Clearinghouse for further agency review and comment, or (3) be disapproved. The State Clearinghouse and the initiating agency are notified of the action. Project proposals recommended for disapproval are sent to the Governor. Notification of the Governor's decision is sent to CSGP, the State Clearinghouse and the initiating agency.

It should be noted that as of April 1974 the State Clearinghouse is no longer identified as a separate organizational unit but has been absorbed into the new Office of Intergovernmental Relations in the Department of Administration.

Federal-State-Local Water Resource Activities

Only a brief summary is given here of the complex pattern of Federal, State and local activities relating to water-resource planning, development and management as they relate to North Carolina. Although each of these three basic activities is undertaken to some extent at each level of government, the major emphasis is at the Federal and local governmental levels. Historically, planning and development of navigation works on rivers and harbors, and of major river systems for navigation, flood control, hydroelectric power and other purposes has been a Federal government function. So also has been licensing of non-Federal power developments affecting navigable waters, collection and analysis of basic hydrologic and climatologic data involving streams and coastal waters, planning and technical assistance for erosion control and for small watershed developments in rural, agricultural areas. More recently, the Federal government has taken leadership in both regulation of the quality of the nation's waters and in the financing of publicly-owned wastewater treatment plants.

Cities, towns and other local units of government continue to have primary responsibility for planning, developing and managing facilities for water supply, wastewater collection, treatment and disposal, and for regulation of land uses, especially as these are related to flood plain occupancy, water supplies and water quality.

The State of North Carolina historically has been responsible for regulating private and local governmental activities relating to water pollution control. In recent years, encouraged in part by Federal initiatives, the State has broadened its regulatory activities and greatly expanded its planning activities with respect to a wide range of concerns for surface and ground water resources. It has also initiated a program of capital grants to local governments for water supply and sewage treatment works.

Agencies of the Federal Government. The agencies of the Federal Government of significance to North Carolina water resources include:

(1) Basic resource data and research agencies. The Geological Survey in the Department of the Interior collects and analyzes basic surface and ground water data on both quantity and chemical quality. The National Oceanic and Atmospheric Agency in the Department of Commerce collects and analyzes climatological data and basic physical data on marine, coastal and estuarine waters. The Office of Water Resources Research in the Department of the Interior provides grants through a network of State water research centers and direct to other research agencies for basic and applied research on water-resource problems.

(2) Planning and development agencies. The U.S. Army Corps of Engineers has primary responsibility for the planning, development and regulation of navigable waters, including North Carolina harbors, estuarine zones and navigable streams, and also has extensive planning, development and management functions for beach erosion, and for flood control, water-based recreation, water supply and other purposes on all North Carolina river systems with the exception of the Tennessee basin. The Soil Conservation

Service in the Department of Agriculture has responsibilities for helping local small watershed agencies plan and develop watershed programs typically involving land treatment for erosion control, flood retarding structures and channelization of streams. The Tennessee Valley Authority (TVA) since 1933 has carried out a comprehensive, basin-wide plan and program for multiple-purpose river development in the Tennessee River basin, a portion of which lies in western North Carolina.

(3) Regulatory agencies. The Environmental Protection Agency (EPA), was established in 1971 in part to carry out the water pollution control responsibilities of the Federal government. This agency has broad regulatory authority, operating primarily but not exclusively through the States, on ambient water quality of all streams, lakes and estuaries and on discharges of pollutants into these waters. EPA also has basic data, research, and planning functions relating to water quality, as well as the administration of the massive construction grants program for publicly-owned wastewater treatment plants. The Federal Power Commission has licensing authority for all non-Federal hydroelectric power facilities on navigable waters; it also has hydroelectric power planning functions in cooperation with other Federal agencies. The Atomic Energy Commission has licensing authority for all nuclear power plants, including the authority in conjunction with EPA to rule on the water use and water quality features of the plants. As indicated above, the U.S. Army Corps of Engineers also has significant regulatory authority over navigable waters.

(4) Related agencies. The Forest Service in the Department of Agriculture has water-resource planning, development and management functions in the national forests of North Carolina, and participates with the Soil

Conservation Service in small watershed planning and technical assistance where forestry issues are important. The Farmers Home Administration of the Department of Agriculture provides construction grants for small water supply facilities in rural areas. The Fish and Wildlife Service of the Department of the Interior has research, planning, management and grant-in-aid responsibilities for fish and wildlife resources, on both publicly and privately owned lands and waters. The Bureau of Outdoor Recreation, also in the Department of the Interior, has planning and grant-in-aid responsibilities for outdoor recreation and open space lands, many of which are closely related to rivers, lakes and estuaries. The National Oceanic and Atmospheric Agency, under provisions of the Coastal Zone Management Act of 1972, is concerned with the wise planning and development of the coastal and estuarine zones of North Carolina. The Coastal Zone Regional Commission has planning and development programs that affect the water resources of the coastal zone of North Carolina as well as of South Carolina and Georgia. The Appalachian Regional Commission has planning and grant-in-aid programs that often have important relationships to the water resources of the mountain region of western North Carolina. Finally, the Federal flood insurance program in the Department of Housing and Urban Development is an important element in the Federal program of flood control aid to local areas.

(5) Coordinating agencies. The water resource activities of the Federal government are coordinated by the Water Resources Council, which has representation from the Departments of Agriculture, Commerce, Defense, Interior, Health, Education and Welfare, Housing and Urban Development,

and Transportation, the Environmental Protection Agency and the Federal Power Commission. The Council coordinates the water-resource policy and planning activities of the Federal agencies, in part through regional river basin agencies. As noted in Chapter II, the Council was responsible for developing the revised water-resource principles and standards approved by the President in October 1973 as a guide for use by all Federal agencies. The Council also administers a program of grants to State water-resource agencies for water-resource planning.

Further information on the current pattern of federal activities in water resources is contained in the recent report of the National Water Commission (1972).

State government agencies. Since the 1971 basic reorganization of North Carolina State government into 17 major departments, most of the water-resource related activities of State government are located in the Department of Natural and Economic Resources (Harton, The State of Water-Resource Management in North Carolina, 1972). Within this Department, in turn, most water-resource planning, regulation and management activities are the responsibility of a 13-member citizen Board of Water and Air Resources and the associated Office of Water and Air Resources. The basic inventory and general planning functions are carried out by the Planning Division of this Office; a State Water Plan is well under way. Detailed water quality monitoring, planning, regulation and programing of Federal and State construction grants for wastewater treatment works are responsibilities of the Water Quality Division. Detailed investigation, planning, regulation and programing of navigation, flood control and beach erosion

activities are assigned to the Waterways and Seashore Division, which works closely with the U.S. Army Corps of Engineers on these matters. The Ground Water Division is responsible for investigations, detailed planning, regulation and management of ground water resources of the State. The Office of Water and Air Resources has close working relationships with the U.S. Geological Survey with respect to basic surface and ground water data; with the U.S. Environmental Protection Agency with respect to water quality; with the U.S. Army Corps of Engineers, with respect to beach erosion control, navigation, flood control and multiple purpose river basin planning and development; and with the U.S. Water Resources Council with respect to overall water resources planning.

Other Offices of the Department of Natural and Economic Resources with important water-related responsibilities are the Office of Earth Resources and Office of Fisheries and Wildlife Resources. The State Soil and Water Conservation Committee, a unit of the Office of Earth Resources, is responsible for the State's planning, programing and review functions under the cooperative small watershed program of the U.S. Soil Conservation Service and local watershed districts. The Office of Fisheries and Wildlife Resources, along with the largely independent Wildlife Resources Commission, is concerned with the relationships of North Carolina water resources to fish and wildlife, including both the use of water resources to promote fish and wildlife values and the impact of water-resource developments for other purposes on fish and wildlife resources.

The Assistant Secretary for Resource Management in the Department of Natural and Economic Resources has a responsibility for general coordination of the Department's resource management activities, including the development

of a single Departmental position on environmental statements sent to the Department for review. With respect to water resources, this coordinating function serves to harmonize, where possible, the often diverse views of the Office of Water and Air Resources, the Wildlife Resources Commission and the State Soil and Water Conservation Committee.

At this writing (June 1974) the Department of Natural and Economic Resources is under reorganization; it appears likely that the reorganization will be along functional lines so that, for example, planning for various natural resources will be brought together in one major administrative unit and management and regulation in another major unit.

Significant water-related activities outside the Department of Natural and Economic Resources are located in the Departments of Human Resources, Commerce and Transportation and Highway Safety. In the Department of Human Resources, the Sanitary Engineering Division of the State Board of Health has regulatory authority over the public health aspects of all central water supply and all sewerage systems, and of the State's water resources generally. The State Utilities Commission in the Department of Administration has regulatory authority over all privately-owned utility systems including gas and electric power; for the latter, water quality considerations are especially important. The State Ports Authority in the Department of Transportation and Highway Safety has both regulatory and development responsibilities for North Carolina ports, including Wilmington and Morehead City, and works closely with the U.S. Army Corps of Engineers on port navigation matters.

In addition, the Department of Administration, through its State Planning Commission and Marine Sciences Council has general concerns for

the reciprocal relationships of water resources to economic growth, regional development, urbanization, and land use, especially in the mountain and coastal zones of the State.

From the above, it is evident that there exists a complex and changing administrative structure at the Federal, State and local levels within which planning and decisions on water-resource matters are handled and within which the environmental statement requirements of NEPA are carried out. It is not possible in this brief report to deal adequately with many of the complex interactions that are involved as environmental statements move through the communication channels of this structure. But the above discussion of the general outlines of this structure should be helpful in understanding the report of North Carolina experience with environmental statements in the chapters that follow.

CHAPTER IV

SUMMARY ANALYSIS OF ENVIRONMENTAL STATEMENTS

As reported in Chapter III, it was May 1970 when the Council on Environmental Quality issued its first guidelines to Federal agencies covering the environmental statement requirements of Section 102(2)(C) of NEPA. It was not until November 1970, however, that the first environmental statement on a proposed action affecting North Carolina water resources was filed with the State Government. Since that time, 104 water-resource related environmental statements have been filed under provisions of NEPA up to February 1, 1974. By that date, an additional ten statements affecting North Carolina water resources have been filed under provisions of the North Carolina Envrionmental Quality Act of 1971.

As discussed earlier in Chapter III, NEPA environmental statements are typically prepared and reviewed first in draft form and then revised on the basis of the first review and circulated again for review and clearance in final form. A third type of report, a "negative declaration," filed by the Division of Highways, North Carolina Department of Transportation and Highway Safety (formerly the North Carolina State Highway Commission), consists of a brief statement of reasons why a proposed action is held to have no "significant effects on the human environment." Thus, with few exceptions, each proposed Federal project or action has two environmental statements--a draft and a final version; or, alternatively, there is a single "negative declaration." These terms will be used throughout the discussion to follow.

As shown in Table IV-1, the Corps of Engineers is the largest single producer of NEPA environmental statements affecting water resources in

TABLE IV-1

NEPA ENVIRONMENTAL STATEMENTS AFFECTING
NORTH CAROLINA WATER RESOURCES, BY SUBMITTING
AGENCY AND TYPE OF PROJECT, NOVEMBER 1970-JANUARY 1974

Agency	Type of Statement		
	Draft	Final	Total
U.S. Army Corps of Engineers:			
Navigation	10	9	19
Beach erosion and hurricane protection	1	2	3
Multiple purpose reservoirs	6	2	8
Flood control	4	4	8
Total, Corps of Engineers	21	17	38
Tennessee Valley Authority:			
Multiple purpose reservoirs	1	0	1
Management of lands and water	2	1	3
Total, TVA	3	1	4
U.S. Soil Conservation Service			
Small watershed projects	2	2	4
U.S. Atomic Energy Commission			
Nuclear power plants	5	4	9
U.S. Federal Power Commission:			
Hydro power projects	4	1	5
U.S. Environmental Protection Agency	1	0	1
U.S. Forest Service			
Forest management programs	5	6	11
Other U.S. agencies, miscellaneous projects	6	3	9
N.C. State Department of Transportation and Highway Safety:			
Federally-aided highways with significant water-resource effects[1]	10	13	23
TOTAL	57	47	104

[1]Through March 30, 1973 only; in addition, 58 draft and final statements and negative declarations with incidental water-resource effects were filed through March 30, 1973.

North Carolina, with 38 of the total of 104 statements. Although the North Carolina State Department of Transportation and Highway Safety (acting for the U.S. Department of Transportation) has filed the largest number of NEPA environmental statements (and negative declarations) of any agency (81), only a minority of these (23) are considered to have significant effects on water resources. The Soil Conservation Service has filed only two draft and two final statements, although the agency has a sizeable program of small watershed projects consisting of 25 projects under construction and 19 projects in the planning stage. The agency has a number of statements in process, however, some of which will be filed during 1974.

The U.S. Atomic Energy Commission has completed a total of five draft and four final statements involving licensing of construction of five nuclear power plants which would have major effects on North Carolina water resources. Also the Federal Power Commission has filed four draft and one final statement involving licensing of three hydroelectric power projects. The TVA's three draft and one final statement involve proposed construction of one multiple-purpose reservoir and three management plans for portions of the TVA reservoir system in North Carolina.

Most of the NEPA environmental statements summarized in Table IV-1 are concerned with projects that were planned prior to enactment of NEPA; many had already been authorized for construction. Thus, as shown in Table IV-2, this backlog of planned or approved projects began to be liquidated in 1971, with the peak rate occurring in the early months of 1972.

Since mid-1972 the completion rate has stabilized at approximately 2.5 statements per month.

As shown in Table IV-3, five of the ten environmental statements completed under provisions of the North Carolina Environmental Quality Act were prepared by the Office of Water and Air Resources; these were for small navigation projects in the Coastal zone. In addition, three statements were filed by the Marine Science Council for proposed construction of marine resource facilities in Carteret, Dare and New Hanover counties along the coast.

The geographic distribution of the proposed projects involved is shown in Figures IV.1--IV.4. In Figure IV.1, the 30 projects of the Corps of Engineers, for which draft and final statements have been completed through January 1974, are located by type of project-navigation, beach erosion, flood control, or multiple-purpose reservoir. Figure IV.2 shows the locations of 20 projects of other Federal agencies for which environmental statements were filed, including projects of TVA, Soil Conservation Service, Forest Service, Atomic Energy Commission and others. In Figure IV.3, the locations are shown of 19 water-related projects of the North Carolina Department of Transportation and Highway Safety for which environmental statements were filed through March 1973. Figure IV.4 shows the location of all ten state water-related projects for which environmental statements were filed under provisions of the NCEPA through January 1974.

A list of the water-related environmental statements filed by Federal and State agencies is contained in Appendix A.

TABLE IV-2

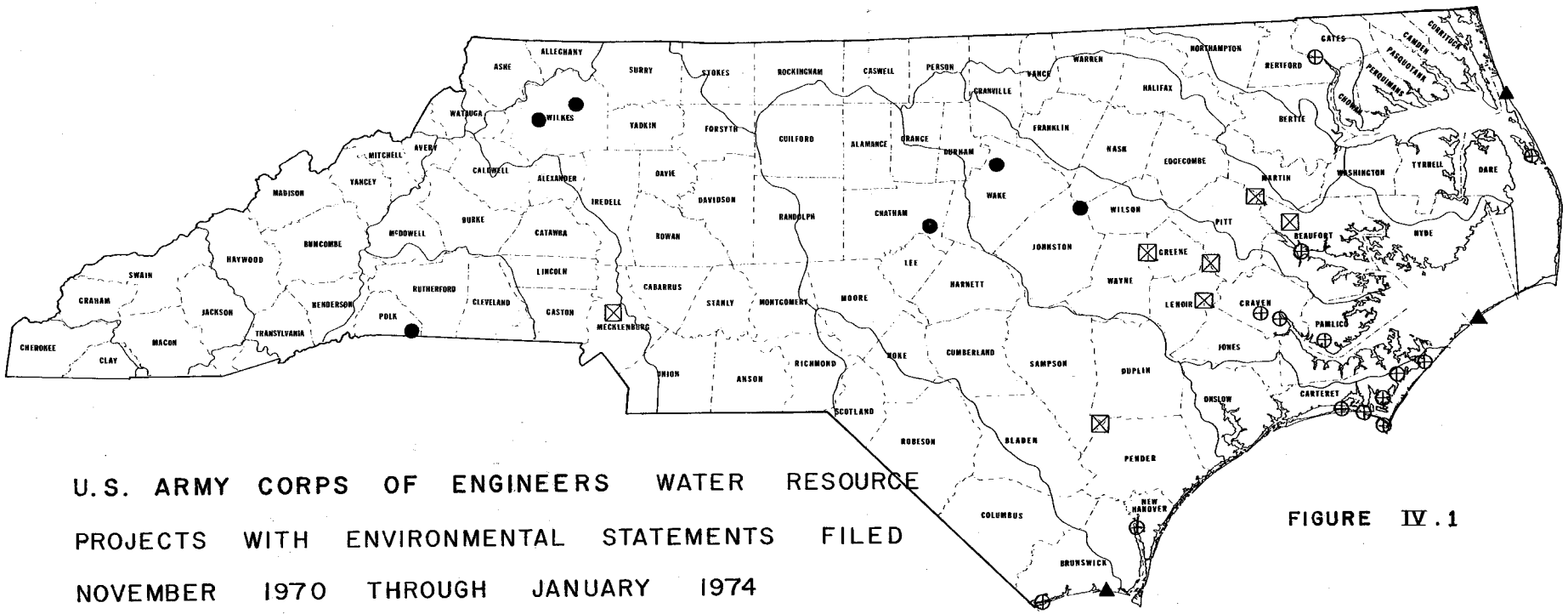
NEPA ENVIRONMENTAL STATEMENTS AFFECTING
NORTH CAROLINA WATER RESOURCES,
BY YEAR AND MONTH OF COMPLETION

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1970	-	-	-	-	-	-	-	-	-	-	6	-
1971	-	2	-	-	3	3	2	1	3	6	1	-
1972	7	7	8	5	4	3	3	2	-	3	5	4
1973	2	3	1	1	6	4	1	2	1	1	-	3
1974	5											

TABLE IV-3

NCEPA ENVIRONMENTAL STATEMENTS AFFECTING
NORTH CAROLINA WATER RESOURCES BY SUBMITTING AGENCY,
MARCH 1972-JANUARY 1974

Agency	
Office of Water and Air Resources, Navigation channels	5
North Carolina Forest Service	1
North Carolina Wildlife Resources Commission	1
North Carolina Marine Science Council, Marine resource facilities	3
TOTAL	10



U.S. ARMY CORPS OF ENGINEERS WATER RESOURCE PROJECTS WITH ENVIRONMENTAL STATEMENTS FILED NOVEMBER 1970 THROUGH JANUARY 1974

FIGURE IV.1

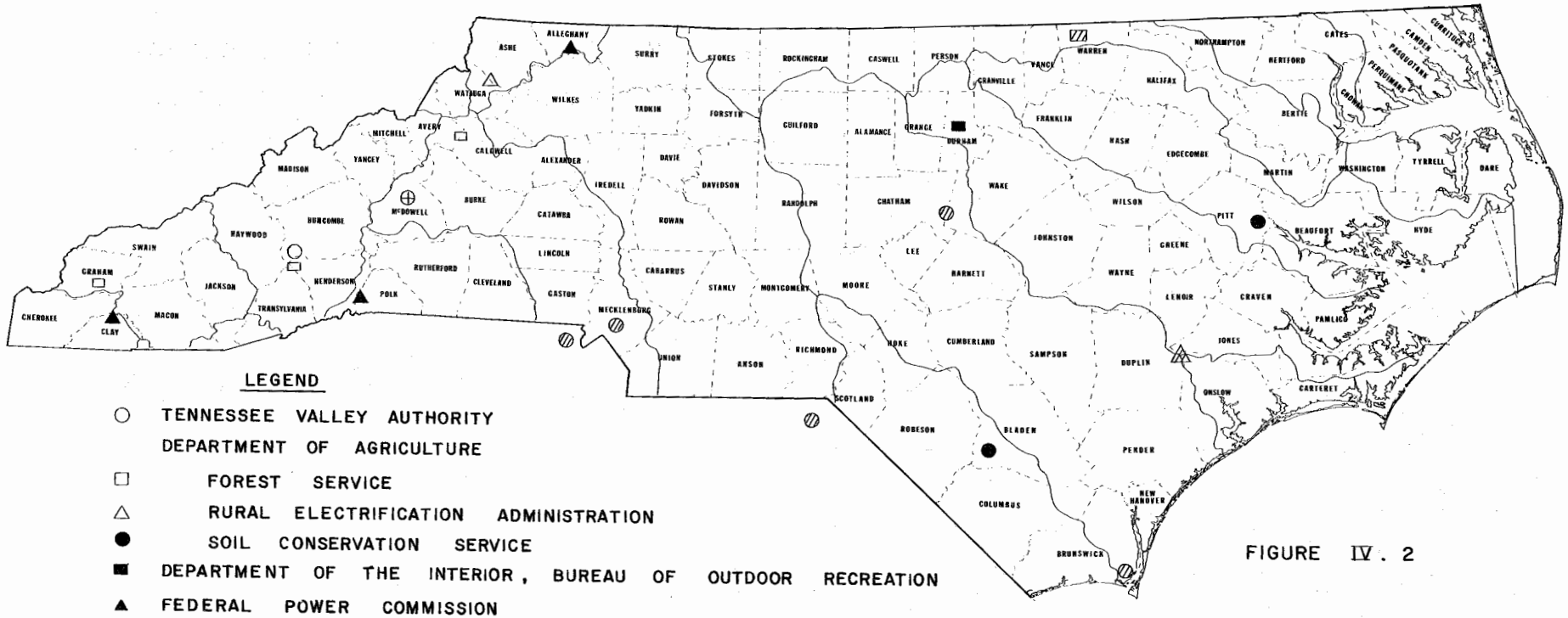
⊕ NAVIGATION

▲ BEACH EROSION AND HURRICANE PROTECTION

● MULTIPLE-PURPOSE RESERVOIRS

⊠ FLOOD CONTROL

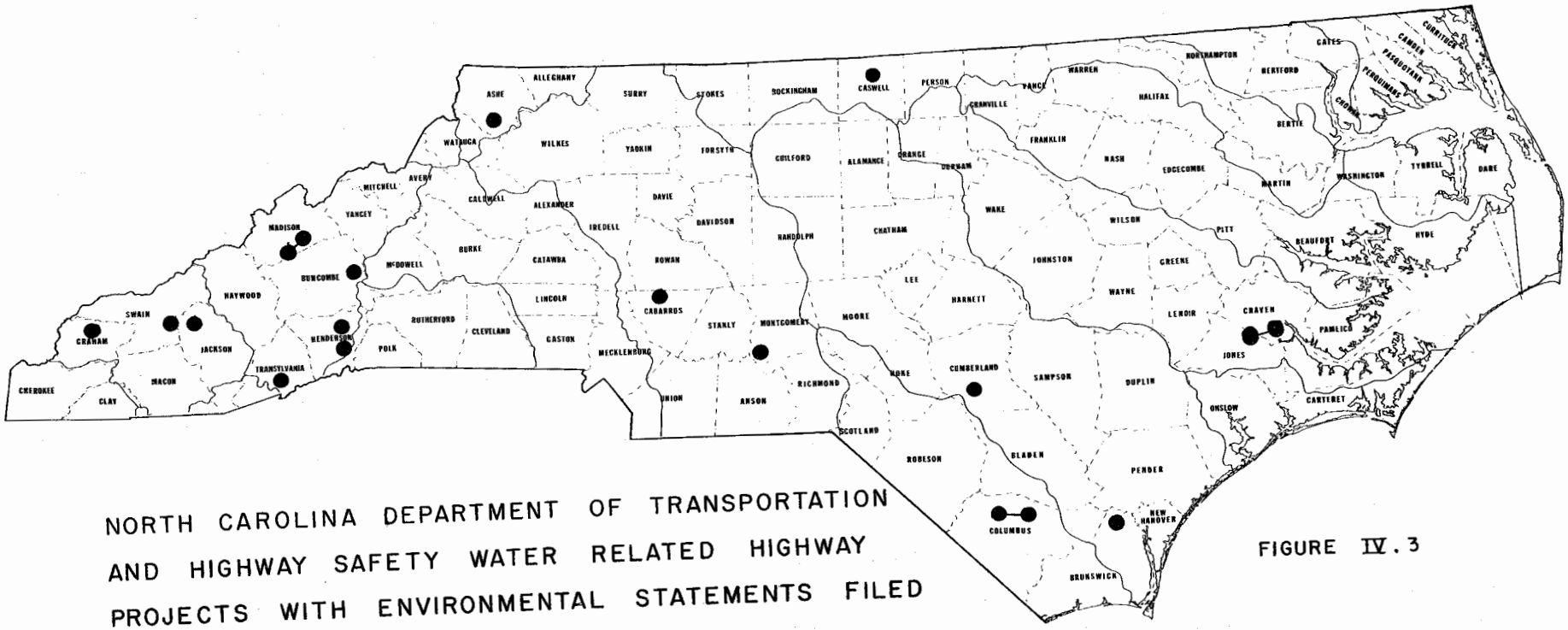
WATER RELATED PROJECTS OF OTHER FEDERAL AGENCIES WITH ENVIRONMENTAL STATEMENTS FILED NOVEMBER 1970 THROUGH JANUARY 1974



LEGEND

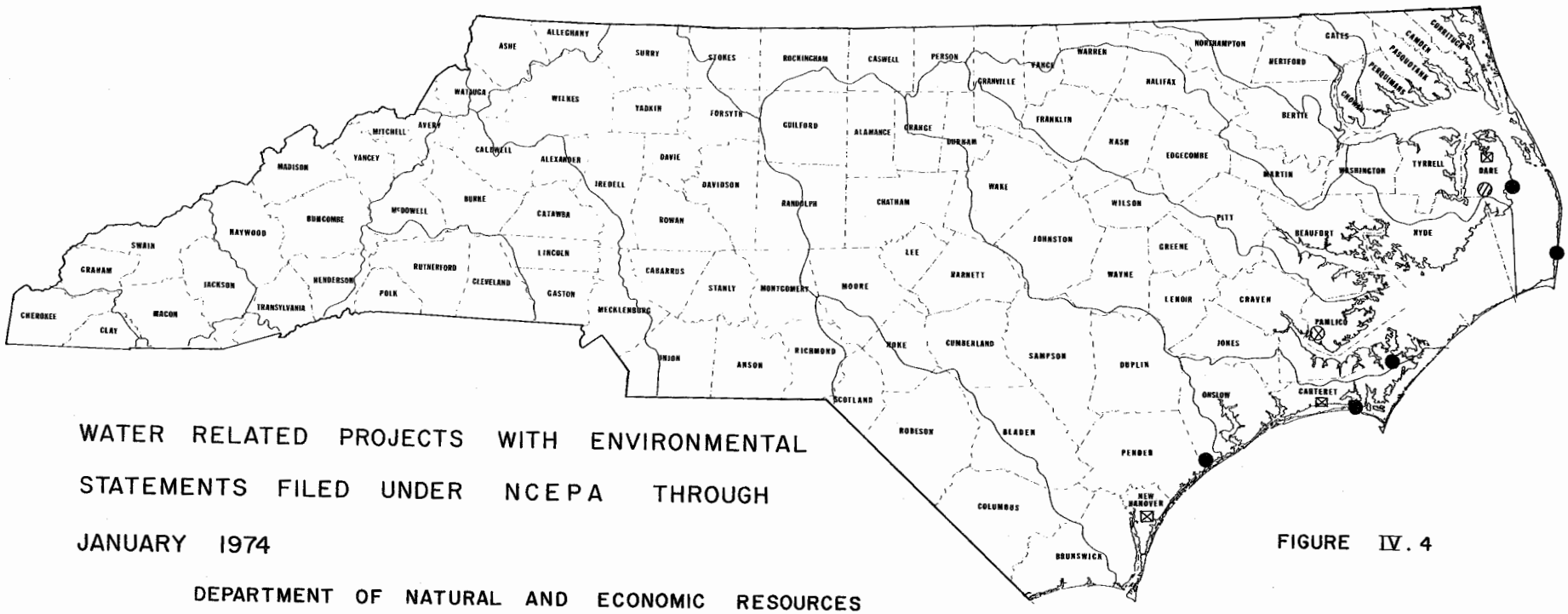
- ○ TENNESSEE VALLEY AUTHORITY
- DEPARTMENT OF AGRICULTURE
- □ FOREST SERVICE
- △ RURAL ELECTRIFICATION ADMINISTRATION
- ● SOIL CONSERVATION SERVICE
- ■ DEPARTMENT OF THE INTERIOR, BUREAU OF OUTDOOR RECREATION
- ▲ FEDERAL POWER COMMISSION
- ⊕ ENVIRONMENTAL PROTECTION AGENCY
- ⊘ ATOMIC ENERGY COMMISSION
- ▨ DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
- ⊿ DEPARTMENT OF DEFENSE

FIGURE IV. 2



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY WATER RELATED HIGHWAY PROJECTS WITH ENVIRONMENTAL STATEMENTS FILED NOVEMBER 1970 THROUGH MARCH 1973

FIGURE IV.3



WATER RELATED PROJECTS WITH ENVIRONMENTAL STATEMENTS FILED UNDER NCEPA THROUGH JANUARY 1974

FIGURE IV. 4

DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES

- ● OFFICE OF WATER AND AIR RESOURCES
- ⊘ OFFICE OF FOREST RESOURCES
- ⊗ WILDLIFE RESOURCES COMMISSION

⊠ DEPARTMENT OF ADMINISTRATION: MARINE SCIENCE COUNCIL

CHAPTER V

EVALUATION OF THE ENVIRONMENTAL STATEMENT PROCESS

A major purpose of NEPA was to introduce environmental quality as a national objective of public policy with respect to all major actions of the Federal Government. In particular, the provisions of Section 102(2)(C) for the preparation of environmental statements were seen by the sponsors of the Act as "action-forcing" mechanisms, which would lead to major changes both in procedures--how projects are planned, reviewed and approved--and in substance--the very nature of the projects themselves (Andrews, 1972). It is legitimate, therefore, in evaluating the impact of NEPA and, by extension NCEPA, on North Carolina water resources, to ask (1) to what extent have water resource planning, review and approval procedures changed, and (2) to what extent, if any has the substance of projects been affected? The search for answers to these questions will take the following route:

(1) How effective have the formal procedures for State, regional and local review of environmental statements been? How have they been perceived by the various actors--the agencies originating the statements, the State reviewing agencies, the public interest environmental groups and the general public?

(2) What has been the experience of formal adherence to the requirements for preparation of environmental statements by the various Federal and State agencies concerned?

(3) What has been the quality of the environmental statements that have been prepared under provisions of NEPA and NCEPA?

(4) What has been the nature of the comments prepared by State agencies and public interest groups on the environmental statements reviewed by them?

(5) What changes, if any, have been made in proposed projects as a direct result of the preparation of environmental statements and the comments made on them?

(6) What indirect effects, if any, on agency programs can be traced to the environmental statement requirements of NEPA and NCEPA?

(7) To what extent have Federal and State agency planning procedures been modified to provide for effective consideration of environmental quality early in the planning process?

(8) To what extent has litigation, brought by environmental public interest groups, played an important role in increasing consideration of environmental values in decisions affecting North Carolina water resources?

(9) To what extent has the environmental statement process provided greater opportunities for public participation in water-resource planning and decision-making in North Carolina?

(10) In terms of the planning and decision model of Chapter II, has North Carolina experience with environmental statements shown any movement toward fulfilling the specifications of the model?

Effectiveness of Formal Review Procedures

The fact that North Carolina had already developed a full-scale State and regional clearinghouse procedure, created to process A-95 grant-in-aid information, by the time that NEPA and NCEPA were enacted has much to do with the success of the formal review procedures for environmental statements. The procedure appears to be working quite effectively insofar as the actual clearance of environmental statements is concerned, and somewhat less effectively insofar as dissemination of information to the general

public is concerned. All State and regional agencies with legitimate interests receive copies of the statements shortly after they are filed with the State Clearinghouse; furthermore, there is no uncertainty about this process. Within three weeks of filing at most, all individuals and groups who have expressed interest in environmental statements by subscribing to the North Carolina Environmental Bulletin receive information on new filings of environmental statements. Within a month after the Bulletin was first issued, its subscription list numbered over 700. Currently, the Bulletin is mailed to about 650 individuals or groups.

There has been no major criticism of the environmental statement clearance activities of the State Clearinghouse, by the Federal, State, regional or local agencies involved. There has been some criticism of the information disseminating activity of the State Clearinghouse. Some individuals and environmental groups pointed out that as much as a two-week lag can occur between receipt of an environmental statement by the State Clearinghouse and information of its availability being carried in the Environmental Bulletin. This leaves individuals and groups very little time to analyze statements and prepare comments, because much of the nominal 45-day reporting period may have expired because of delays in transmission of environmental statements from the originating agency to the State Clearinghouse, as well as the delay in reporting in the Environmental Bulletin. These delays have led some individuals and groups to seek information on environmental statements direct from the issuing agency. It has also been suggested that Federal and State agencies provide information at key earlier stages of project planning that can be reported in the Environmental Bulletin. This is being done for many proposed highway projects,

but not systematically as yet for water-resource projects. A valuable supplemental aid for the general public is the North Carolina Citizen's Guide to Commenting on Environmental Impact Statements, prepared in March, 1973 in the Division of Continuing Education, N.C. State University.

In spite of the short time available to State agencies for submitting comments to the State Clearinghouse--usually no more than three weeks--the agencies almost always meet the deadlines. In the case of a few complex or controversial projects, where coordination of agency comments in the Department of Natural and Economic Resources turned out to be especially time-consuming, extensions of time were obtained by the State Clearinghouse from the initiating Federal agency. In spite of this generally good performance with respect to meeting deadlines, State agency staffs do operate under severe time constraints, and deadlines are often met at the expense of thoroughness and quality of the analysis of environmental statements. This problem is less serious in those cases where State agencies either have had prior knowledge of the project covered by the environmental statement or have participated in the planning of the project.

Agency Performance in Filing Statements

There is considerable variation in the performance of Federal agencies in meeting the formal requirements of NEPA for the filing of environmental statements. Furthermore, the performance has changed over time, as the provisions of Section 102(2)(C) of NEPA have been interpreted via revisions of CEQ guidelines and by Court decisions.

U.S. Army Corps of Engineers. It has already been noted that, although NEPA became effective on January 1, 1970, and the CEQ issued its first interim guidelines on April 30, 1970, the first environmental statement on a North Carolina project was not filed until November 1970. In fact, until mid-1971 the only environmental statements affecting North Carolina water resources were filed by the U.S. Army Corps of Engineers. As Andrews has documented, the Corps was one of the first Federal agencies to establish procedures for preparing and filing environmental statements, and took a positive view toward meeting the formal requirements for submission of environmental statements (Andrews, 1972). Andrews evaluates the Corps' policy response to NEPA as of early 1972, as follows:

> "(The Corps') instructions (to its field offices) defined in increasing detail the categories of agency action to which the environmental statements procedure was to apply, and they stated clearly that it was to apply to projects already underway if significant incremental actions (examples of which were given) remained to be taken. More generally, they emphasized a policy that NEPA allowed (and directed) the Corps to recognize environmental quality protection as a legitimate purpose to be planned for, using environmental rather than merely economic criteria--a significant change, in an agency traditionally guided by narrow criteria of economic efficiency and regional economic development, even though the new balance that was to be struck was not clearly defined. Third, the Corps took policy positions stronger than those of the Council on Environmental Quality on at least two major points: first, that the environmental statement process was to be fully integrated into the normal process of preauthorization surveys, and second, that the public was to be informed of environmental considerations as early as possible and specifically at any public hearings normally held. It appears clear, in short, that the Corps was determined not to appear grudging or recalcitrant in its response to NEPA, at least insofar as its officially stated policies were concerned."

This national policy of the Corps has been reflected in North Carolina experience. From the start, the Corps has prepared environmental statements on North Carolina projects that were already authorized for construction and,

in some cases, such as New Hope (B. Everett Jordan) Lake, projects for which construction funds were already appropriated. Each Corps' District affecting North Carolina has prepared a schedule for preparing environmental statements for projects in the engineering and design, construction, and operation and maintenance stages. For example, for fiscal years 1974-76, the Wilmington District of the Corps has scheduled preparation of environmental statements for six projects in the advanced engineering and design stage, five projects in the construction stage, six projects for which the Corps has continuing authority to plan, construct and operate, and seven projects in the operation and maintenance stage. There is no important category of Corps of Engineer's action on civil works that is not conforming to NEPA requirements and CEQ guidelines.

The District offices of the Corps are also giving wide distribution to draft environmental statements during the 45-day period set aside for comments following Corps' submission of draft statements to CEQ. Thus, a preliminary draft statement for the Buckhorn Lake project was sent in June 1972 to nine environmental groups, three other public associations, nine university representatives on four campuses, nine mayors, ten boards of county commissioners, three regional agencies, as well as to the many Federal and State agencies concerned. Similarly, the revised draft statement for the Falls Lake project was sent in August 1973, to 14 environmental groups, three women's groups, six other citizen's groups, eight university representatives on three campuses, eight mayors, three boards of county commissioners, three regional agencies, and seven city chambers of commerce as well as to concerned Federal and State agencies; in addition, copies of the draft statement were placed in 34 public

and university libraries in Raleigh, Durham and smaller communities in Durham, Wake and Granville Counties.

Soil Conservation Service. As noted in Chapter V, the Soil Conservation Service did not issue definitive environmental policies and procedures to its State conservationists until March 1971 (Soil Conservation Service, Environment Memorandum 1, March 19, 1971); these guidelines called for preparation of environmental statements for all project plans whose watershed work plan agreements were signed after January 1, 1970. For the many watershed projects with agreements signed before this date, however, the decision on whether to prepare an environmental statement was to be handled on a case-by-case basis. In fact, for all watershed projects involving stream channelization that had been approved but not yet carried out, the Soil Conservation Service directed a detailed review and classification of projects in terms of their overall environmental and economic worth (Soil Conservation Service, Watersheds Memorandum 108, February 4, 1971). This served to delay decision on whether to prepare environmental statements on already approved projects until completion of the review, scheduled for June 30, 1971; Memorandum 108 also led to the determination by State Conservationists that many stream channelization projects had no significant adverse effect on the environment and, hence, that environmental statements need not be prepared for these projects.

This national policy of the Soil Conservation Service was reflected in North Carolina. As of June 30, 1971, the Service had filed no environmental statements on North Carolina watershed projects. Acting under Memorandum 108, the Service had prepared a revised Watershed Work Plan for the Chicod Creek Watershed project and determined that, as modified,

the proposed project would have no significant effect on the environment and hence could proceed to the construction stage without further action including preparation of an environmental statement. This determination was strongly opposed by both the U.S. Fish and Wildlife Service and the Department of Natural and Economic Resources and led to the filing of a suit in Federal Court by five national and local environmental organizations to halt further action on the project (Natural Resources Defense Council v. Grant, 1972). Most of the available resources of the State office of the Service were absorbed during the first six months of 1972 in responding to this suit, including preparation of draft and final environmental statements for the Chicod Creek project, filed in April and July, 1972, respectively.

Since mid-1972, the Service has filed environmental statements for two additional projects, and is now actively working on environmental statements for 13 projects in the planning stage and three projects in the construction stage. In addition, the Service has revised the environmental statement for Chicod Creek, in accordance with the Federal District Court ruling of February 3, 1973 (Natural Resources Defense Council v. Grant, 1973). The Service has not yet determined to what extent environmental statements will be prepared for the 21 other watershed projects approved for operations. Some of these projects have been inactive for several years and, accordingly, preparation of environmental statements for these would not seem to be warranted.

Environmental Protection Agency. The original CEQ guidelines for NEPA exempted the regulatory activities of EPA from the environmental statement requirements of the Act, and there has been considerable

ambiguity as to whether and to what extent NEPA requirements for environmental statements apply to EPA (Anderson, pp. 108-113). In guidelines issued in January, 1972 (37 Fed. Reg. 879, Jan. 20, 1972) EPA indicated its intention to prepare statements for wastewater treatment facility grants and approvals of regional water quality management plans. The Federal Water Pollution Control Amendments of 1972 exempted EPA from preparing environmental statements on all aspects of the water quality program except for grants for publicly-owned wastewater treatment works and for discharge permits for new sources of pollution. As a result of the initial uncertainty and subsequent exemptions, EPA had by January 31, 1974 filed draft or final statements nationally on only 58 actions, most of which were for wastewater treatment facility grants. In contrast, the Corps of Engineers had filed statements on 918 actions nationally. This situation is reflected in North Carolina, where EPA has submitted only one environmental statement to January 31, 1974, this for a wastewater treatment plant in Marion, McDowell County. Currently, EPA is preparing draft environmental statements for a number of additional projects in North Carolina.

Other Federal Agencies. From the very start, environmental statements have been prepared on a timely and consistent basis by the State Division of Highways in conformance with guidelines issued by the U.S. Federal Highway Administration, Department of Transportation, for Federal-aid highway projects, and in conformance with guidelines issued under NCEPA for State-financed projects. As discussed later in this Chapter, the Federal and State guidelines have been revised to conform with revised CEQ guidelines, and have been incorporated into the new highway planning process as set forth in the N.C. Highway Action Plan (1973). No problems have arisen

in North Carolina insofar as formal compliance with NEPA is concerned. Following the Calvert Cliffs decision in 1971, the Atomic Energy Commission revised its procedures for preparation and submission of environmental statements, and no problems have arisen with respect to formal compliance for environmental statements on nuclear power plants and other facilities affecting North Carolina. Currently, TVA has very little activity in North Carolina for which environmental statements are required. No major problems have arisen on formal compliance of the U.S. Forest Service or Federal Power Commission with the environmental statement provisions of NEPA.

State of North Carolina Projects. With the exception of State highway projects, very few environmental statements have been filed for projects financed exclusively by the State. In addition to State highway projects, only ten statements have been filed through January 1974 for State projects affecting water resources. This may well represent the total population of new projects affecting water resources, but there may be some State projects for which environmental statements should be prepared but have not been. The record of performance of State agencies under NCEPA is not known because no recent survey of performance under the Act has been undertaken by the Department of Administration.

Quality of Environmental Statements

One way of assessing the quality of environmental statements is to match them against the five specific elements listed in Section 102(2)(C) of NEPA, plus the requirement for a "systematic, interdisciplinary approach" set forth in Section 102(2)(A) of the Act. Another way is to identify and evaluate the specific criticisms of statements made by Federal, State and

regional agencies and by individuals and groups outside of government. Still another method is to review Court decisions and the supporting opinions with regard to adequacy of environmental statements. Taken together, these diverse ways of assessing quality should lead to some consistency in evaluation.

One general characteristic of environmental statement filings on North Carolina projects is that the earlier statements--those filed in late 1970 and in 1971--were of much poorer quality than the later statements. This secular improvement in quality was quite consistent among agencies; for example both Corps of Engineers and North Carolina Division of Highways statements improved significantly over time. Draft statements filed by the Atomic Energy Commission for nuclear power plants in early 1972 were followed by much improved draft and final statements later in 1972 and thereafter. The first environmental statement filed by the Soil Conservation Service--Chicod Creek in April, 1972--was followed by improved statements on other projects later in 1972 and 1973.

Reasons for this trend are fairly clear; the late 1970 statements of the Corps of Engineers were prepared to meet a deadline for Congressional authorization of water-resource projects. Early statements were prepared without much detailed guidance from CEQ and the central offices of the agencies, and without benefit of Court decisions and opinions. Furthermore, agency environmental expertise was inadequate and methodologies were largely undeveloped. All of these inadequacies have become less serious as time has elapsed, so that one would expect to find a great improvement in quality of environmental statements by early 1974.

U.S. Army Corps of Engineers. In general, when evaluated against NEPA Section 102(2)(C) criteria, most Corps' statements filed since early 1972 range from marginal to adequate in quality. Earlier statements were significantly poorer than statements prepared in 1973 and 1974. None of the statements, even the best such as the August 1973 revised statement on the Falls Lake project, use a rigorous analytical framework for environmental assessment. One of the principal weaknesses is the inadequate analysis of alternatives to proposed projects; this is not surprising when one considers that most of the environmental statements were prepared for projects that were already authorized or well along in planning.

Evaluations of Corps' statements by other Federal agencies are consistent with these findings. For example, the EPA, in comments made on 11 North Carolina environmental statements of the Corps, found that eight statements had inadequate information on potential environmental effects. Only three statements were considered to be fully satisfactory. The Fish and Wildlife Service has consistently expressed reservations on the adequacy of treatment of adverse environmental effects on fish and wildlife in Corps' environmental statements, including statements on major reservoir projects such as New Hope and Falls Lakes. Other Federal agencies expressed occasional reservations, mostly of a minor or technical nature.

Comments of State agencies on Corps' environmental statements since mid-1971 have, on occasion, been quite critical. In particular, State agency comments reflecting fish, wildlife, forestry and conservation points of view have taken issue with both the substance of Corps' proposals and the asserted inadequacy of information and analysis continued in the statements. Thus, in June 1971, the Department of Conservation and Development

objected to the Tranter's Creek flood control project; in October 1971, the successor Department of Natural and Economic Resources pointed to inadequate treatment of three basic issues in the draft environmental statement for the Nahunta Swamp project; in June 1972, the Department categorized the draft environmental statement on Clinchfield reservoir as "completely inadequate".

In October, 1973, however, the Department commented more favorably on the massive four-volume, revised draft statement on the Falls Lake project (Falls Lake Final Environmental Statement [Revised] 1974, Exhibit J-1):

> "In overview, we find this draft (statement) to be superior to any we have reviewed for a comparable project (underlining in original). Despite its size, the document still has shortcomings. The treatment of alternatives is, as usual in impact statements, inadequate in that it does not treat each of the feasible alternatives in equal depth (underlining in original). Furthermore, the statement tends to be a compendium of undigested and unrelated information from a variety of sources rather than a tightly written, careful analysis of a complex, costly project. Furthermore, we find that sufficient care is often not exercised in judging material for accuracy before it is included in the statement. Despite these criticisms, the statement is a vast improvement on the earlier document and is far better than anything we have reviewed for any similar project. As the Wildlife Resources Commission points out, the section dealing with the 'Environmental Setting of the Project' is excellent and the section dealing with 'Environmental Impact of the Proposed Action' is a clear exposition of the impact of the project on fish and wildlife resources."

As might be expected, comments of environmental groups were quite consistently critical of both the environmental statements and the project proposals that were the subject of the statements. Some of these comments were associated with court suits filed on the New Hope Lake and Falls Lake projects in August, 1971, and March, 1973, respectively. Especially in

the New Hope case, the environmental groups subjected the revised draft environmental statement of April 1971 to intensive analysis and in the process raised many questions on adequacy of information and analysis. Again, in January 1972, the Conservation Council of North Carolina, the major Plaintiff in the New Hope Court suit, submitted to the CEQ a 11-page critical analysis of the Corps' final environmental statement on the project, dated October 1971. In contrast, by October 1973, the Joseph LeConte Chapter of the Sierra Club was commenting on the revised draft statement on the Falls Lake project as follows (Falls Lake Final Environmental Statement [Revised] 1974):

> "Our overall reaction to this draft can perhaps best be summed up by the two words inclusive and concisive. Unlike the previous draft, this statement covers most of the topics and issues we would expect. On this point we congratulate you. But, like Janus, this statement has two faces: while it is inclusive, it is not as conclusive as we had hoped. As is pointed out in the attachment, too many of the impacts are vaguely described, given different treatments in different places, and generally speaking, so heavily manipulated that it is difficult to know what may be the impacts of the Falls project."

Soil Conservation Service. The draft statement on the Chicod Creek project, prepared hurriedly in the Spring of 1972 in response to the Court suit, was severely criticized by other Federal agencies, State agencies and national and State environmental groups. In particular, the U.S. Department of the Interior, the N.C. Department of Natural and Economic Resources and the Natural Resources Defense Council pointed to the inadequate analysis of the adverse environmental effects of the proposed stream channelization. Although the Soil Conservation Service attempted to remove some of the stated inadequacies in revisions incorporated in the final environmental statement filed in July 1972, the U.S. District

Court in its February 1973 decision found eight categories of inadequacy in the final statement, and issued a preliminary injunction barring further action on the project. In response to the Court's action, the Service has recently completed a draft revised environmental statement which was received by the State Clearinghouse on May 16, 1974 (U.S. Soil Conservation Service, Draft Environmental Statement [Revised] Chicod Creek Watershed).

The Service has filed only two other environmental statements thus far; for one of these, the EPA expressed environmental reservations and reported that insufficient information was presented in the statement.

Division of State Highways. In general, environmental statements prepared by the Division of State Highways have received only moderate criticism from Federal and State natural resources agencies and environmental agencies in North Carolina. There have been few specific criticisms related to water resources. In June 1972 a high official of the Department of Natural and Economic Resources commented as follows (Greensboro Daily News, June 18, 1972):

> "Generally speaking, the Highway Commission writes the most competent statements. There are some exceptions...but they have made a very real effort to comply with the law."

An official of ECOS (an environmental organization) supported this view by characterizing this agency's statements as "well prepared and generally in keeping with the letter and spirit of NEPA" (Greensboro Daily News, June 18, 1972).

A sampling of EPA comments on environmental statements for North Carolina highway projects reveals that EPA evaluations are about evenly divided between "no objection--adequate" and "environmental reservation--insufficient information."

The generally favorable reception by natural-resource oriented agencies of statements on highway projects may be less an indication of high quality than a relative absence of major conflict. Certainly the environmental statement on I-40 in Durham and Orange Counties has been severely criticized by local and environmental groups in Orange County on the grounds of adequacy of information; but this may be due in large part to the intense opposition to the proposed route by Orange County citizens.

A detailed analysis of ten environmental statements and one negative declaration involving important water-related highway projects has revealed some serious inadequacies in both information and analyses contained in the statements. Generally, only the most apparent effects on water resources have been identified, and the magnitude and duration of these effects are seldom included. Discussion of effects is frequently combined with qualifications, value judgments, and reassurance of the moderation of effects. Second-level effects, such as influence of increased siltation on aquatic organisms, are rarely identified. Beyond the identification of the most obvious impacts on water resources and assurances that corrective measures will be taken, the statements consist largely of general assertions and unsupported value judgments. There is evidence, however, that the quality of environmental statements on highway projects has significantly improved since late 1972.

It is recognized that this detailed analysis which reveals inadequacies is not fully reflected in Federal and State agency comments on the quality of statements on North Carolina highway projects. As noted above, this may be due to the incidental nature of water-resource impacts relative to other impacts of most highway projects. Further details are contained in Appendix C.

Atomic Energy Commission. Since the Calvert Cliffs decision in 1971 (Calvert Cliffs' Coordinating Committee v. Atomic Energy Commission, 1972), the Atomic Energy Commission has greatly expanded and improved its capability for preparing environmental statements, and the results are reflected in the improved quality of environmental statements on nuclear power plants over time. Largely because of the importance of the waste-water thermal pollution problem associated with massive nuclear power plants, EPA has expressed environmental reservations on four nuclear power plants affecting North Carolina. Other Federal and State agencies, however, have raised no major questions about the adequacy of these environmental statements.

State Projects under NCEPA. Environmental statements for water-related projects prepared under provisions of NCEPA have typically been brief and relatively simple in nature, becuase the projects have been quite small in scale. The quality of the statements has not been a major issue in the review process.

Comments of State Agencies and Environmental Groups

Comments of State agencies on environmental statements are in large part a function of the orientation of individual agencies toward or away from development. Thus, the comments of the Wildlife Resources Commission and the Office of Fisheries and Wildlife Resources have tended to be critical, especially of environmental statements on channelization projects or on major reservoirs proposed by the Corps of Engineers and TVA. Conversely, comments on environmental statements for such projects by the Office of Water and Air Resources have been, on the whole, favorable; the

criticisms that were made did not raise fundamental questions as to the desirability of the projects. This is not surprising because many of these projects had previously been approved by the Board of Water and Air Resources acting under its statutory authorities.

The nature of State agency comments has also changed over time. Comments on the early environmental statements in 1970 and 1971 were often perfunctory and contained few major criticisms or objections, in spite of the fact that many of the early environmental statements were very brief and sketchy. By late 1971, however, Court interpretations of NEPA lent support to the view that environmental statements should be complete, in-depth, authoritative treatments of environmental impacts, rather than a superficial description of obvious consequences. Also, in late 1971, the newly established Department of Natural and Economic Resources began to inject an overall natural resources point of view into the review of environmental statements. A procedure was established whereby the comments of the individual offices of the Department were reviewed in the office of the Assistant Secretary for Natural Resources, and a coordinated Departmental position on each environmental statement was developed and forwarded to the State Clearinghouse. As experience was gained with this procedure, comments from the Department of Natural and Economic Resources came more and more to reflect a consistent Departmental position of promoting environmental values.

In general, both time and staff constraints have placed severe limits on the extent of State agency comments. Usually, an agency has less than 30 days to prepare comments; this means that no extended studies can be undertaken but that the agency must rely on readily available data. With

few exceptions, no additional staff resources were provided to agencies to handle comments on environmental statements; the work had to be fitted in to the schedule of regular agency activities. Accordingly, in the absence of some readily apparent conflict in resource use, State agency comments on environmental statements tend to be routine and often perfunctory.

As might be expected, the comments of environmental groups tend to be critical both of the content of the environmental statements and of the developments proposed to be undertaken. Given the severe time constraints and the limited resources available to most environmental groups, their comments are surprisingly complete and detailed. The major North Carolina environmental agencies that have commented extensively on water-related environmental statements are:

Conservation Council of North Carolina
ECOS, Incorporated
Sierra Club, Joseph E. LeConte Chapter, Raleigh
North Carolina Wildlife Federation

In addition, national environmental organizations have provided help in preparing comments on specific environmental statements. Thus, for example, comments on the draft statement for Chicod Creek were prepared jointly by the Natural Resources Defense Council, National Wildlife Federation, Friends of the Earth and the North Carolina Wildlife Federation.

Environmental groups have concentrated their attention on a few major development projects, such as New Hope and Falls Lakes, Clinchfield and Mills River Reservoirs, and on a key project in the Soil Conservation Service stream channelization program--Chicod Creek. For example, in 1971 the Conservation Council of North Carolina prepared a detailed critique of the Corps' draft statement on the New Hope Lake project and, following

completion by the Corps of the final environmental statement, the Council sent a second detailed critique to the CEQ which pointed to alleged serious omissions, distortions and other inadequacies in the statement. Of course, the Conservation Council's comments on the statement are related to the fact that it had instituted a suit against the Federal Government in August 1971 to bar construction of the New Hope project (Wallace, 1974; Conservation Council of North Carolina v. Froelke, 1971).

Environmental groups also commented critically at length on the final environmental statement for Falls Lake filed in April 1971. One year later the Joseph LeConte Chapter of the Sierra Club wrote to the Wilmington District of the Corps expressing concern for the environmental consequences of the project and the inadequacy of the environmental statement, and requesting a revision of the statement before further action was taken on the project. Ten specific topics for analysis or other action were suggested. Other environmental groups, including ECOS, and Wake Environment, Inc., later joined with the Sierra Club in reiterating these recommendations. Following the completion by the Corps of its much improved draft revised statement on Falls Lake in August 1973, the Joseph LeConte Chapter of the Sierra Club again prepared a detailed analysis which was much less critical of the Corps' analysis than its earlier comments; in addition, the Conservation Council of North Carolina filed supplementary comments. It is pertinent to note that the Falls Lake Project is also a subject of Court suit seeking a halt to land acquisition for the project, filed in March 1973 by the Neuse Valley Association, an organization of landowners in the reservoir area. No environmental groups are party to the suit, however.

Perhaps the most intensive assault on a North Carolina environmental statement by environmental groups is that associated with the Chicod Creek project. Actually the concern of these groups arose from the facts that (1) the Chicod Creek project was one of a class of small watershed projects of the Soil Conservation Service that involved extensive stream channelization and (2) the Soil Conservation Service had ruled that no environmental statement was required for this project. Chicod Creek thus became a national test case on the issues of stream channelization and environmental impact on fishery and wildlife resources. Accordingly, three national groups--the Natural Resources Defense Council, the National Wildlife Federation, and the Friends of the Earth--joined two local organizations--the North Carolina Wildlife Federation and the Pamlico-Tar Conservation Coalition--in filing suit on November 30, 1971, to halt construction of the project pending preparation of an environmental statement. Following the February 1972 court ruling that an environmental statement be filed within 30 days, the Service prepared a draft statement on which the environmental groups made extensive and detailed critical comments. A 50-page statement in two parts was filed by these groups. This was supported by a 28-page statement by ECOS and a four-page analysis by the Joseph LeConte Chapter of the Sierra Club.

Effects of Environmental Statements on Projects

Very few changes in projects can be traced directly to the operation of the environmental statement process. Yet, the few changes that have been identified are for important projects, and thus have significance beyond the boundaries of the project.

The fact that Governor Scott in September 1971 requested the TVA to revise its draft environmental statement for the Mills River reservoir project in part led TVA to postpone further action on this and 13 other proposed projects in the French Broad basin. Of course, intense local opposition by environmental groups led by the Upper French Broad Defense Association and erosion of local support for the project were also important factors in TVA's decision to suspend further action; yet this postponement of a major water-development program can be traced directly to the workings of the environmental statement process. Following normal procedures and established relationships, a representative of the North Carolina Department of Water and Air Resources testified at a TVA public hearing in Asheville on August 31, 1971, that the State favored immediate construction of the Mills River project. Yet, in his letter of September 8, 1971, commenting on TVA's draft environmental statement for the project, Governor Scott implied that the project should not go forward until major questions raised on the environmental and social effects of the project were satisfactorily answered (N.C. State Clearinghouse File: Mills River Dam and Reservoir, TVA).

The current compromise resolution of the Court suit on New Hope Lake has the following consequences (Wallace, 1974):

(1) Clearing of the reservoir area has been postponed pending further studies.

(2) The option of operating the reservoir solely as a flood retention structure, without a permanent conservation pool, has been preserved pending further action on the case.

(3) A supplement to the environmental statement on the project will be prepared and submitted for comment following completion of further studies.

(4) Plaintiffs will discuss alternative uses of the reservoir areas in their comments on the supplemental statement.

(5) Plaintiffs reserve the right to challenge any decision to impound waters in a permanent conservation pool and will seek to have any additional nutrient-removal costs caused by such impoundment to be charged to the project.

This possible major change in the use of the New Hope project is directly traceable to the NEPA requirement for filing of environmental statements. As described by James Wallace, "For the first time, the New Hope controversy had acquired a legal focus, albeit a belated one" (Wallace, 1974, p. 3).

A major change in size of the cooling-water reservoir for the Shearon Harris nuclear power plant is due in part to the environmental statement process. In commenting on the final environmental statement of the Atomic Energy Commission for the plant, the Environmental Protection Agency held that the project as proposed was unsatisfactory as it violated the Federally-approved water quality standards. This led to a major revision of the proposed lake which reduced it in size from 10,400 acres to 4,100 acres; cooling towers were added to the design to compensate for the reduction in lake size. Of course, the Environmental Protection Agency might have taken the same action in the absence of NEPA requirements for environmental statements, but the statement review process provided the proximate basis for EPA to act (Atomic Energy Commission, Revised Draft Environmental Statement, Shearon Harris Plant, January, 1974).

Other changes in projects traceable to NEPA requirements are less striking and are indirect in nature. The Soil Conservation Service made some changes in stream channelization projects to reduce or mitigate adverse effects on fish and wildlife, in the process of re-analysis of stream channelization projects called for in Memorandum No. 108. But, in the case of the Chicod Creek project these changes were not adequate to satisfy the environmental groups or the fish and wildlife agencies of the Federal and State governments, and the Court suit followed. It is not known at this writing whether further changes have been made in the Chicod Creek project incident to the completion of the draft of the revised environmental statement.

Still other projects appear to have been delayed because of adverse comments on draft environmental statements. For example, the proposed Blue Ridge hydroelectric power project for which the Appalachian Power Company is seeking a Federal Power Commission license was held up for two years pending completion of a final environmental statement. Although this statement was finally filed in June 1973, and the license has finally been issued, the effective date has been postponed until January 1975 to allow Congress to act on a proposal of the two North Carolina Senators that a study be made prior to a final decision on the project (Chapel Hill Newspaper, June 16, 1974).

A review of the record of draft and final environmental statements filed with the State Clearinghouse (Appendix A) reveals that in the cases of nine Corps of Engineers projects for which draft statements were filed in 1971 and 1972, no final statements have yet been filed. In some cases this long delay can be ascribed to objections raised to the projects by

other agencies or by environmental groups. For example, serious objections were raised to the proposed Clinchfield Reservoir by the Department of Natural and Economic Resources and by the Rutherford County Conservation Council, a local environmental organization. The project now appears to be under further study (North Carolina Water Plan--Progress Report, Chapter 26, 1974). Other projects in this group on which questions have been raised by the Department of Natural and Economic Resources are the Buckhorn Lake project, and the Tranter's Creek, Nahunta Swamp and Contentnea Creek projects involving stream channelization. It is possible that some changes may be made in some of these projects as a result of the objections raised in the reviews of the draft environmental statements.

Indirect Effects on Agency Programs

Apart from the direct effects on proposed projects discussed above, there have been significant indirect effects on the water-resource programs of Federal agencies. For example, the controversy over stream channelization projects in eastern North Carolina, typified by the Chicod Creek case, has led to a general slowdown in stream channelization activity by both the Soil Conservation Service and the Corps of Engineers. Some projects originally approved for construction in the 1960's but not yet started may be dropped or drastically redesigned. Planning for future projects involving channelization will also be drastically affected.

The emphasis of the Corps of Engineers river basin programs is also shifting from major multiple-purpose reservoirs to more broader concerns for water quality, flood plain management, and environmental programs. The delays encountered by the Corps in moving forward on the New Hope Lake,

Falls Lake, Buckhorn Lake and Clinchfield Reservoir has led the Corps to restudy the authorized Randleman and Howard Mills reservoir projects, prior to preparing environmental statements for them. Also, it is reasonable to conclude that environmental values will be given greater weight by the Corps in its future planning for additional reservoirs than was the case in the past.

The TVA appears to have deferred its development program in the French Broad river basin, and it is possible that few if any of the proposed reservoirs will be built in the foreseeable future.

Indirect effects of the environmental statement requirement on the State highway program appear to be small. The actual mix of highway projects and their rate of development do not seem to be affected. In contrast to examples of stream channelization and reservoir projects discussed above, the environment statement process has not called into question the need for highway projects. Of course, the newly adopted North Carolina Action Plan for highway planning and development will have the effect of taking environmental values into account in all stages of the planning process.

Other programs such as Atomic Energy Commission approval of construction of nuclear power plants have been indirectly affected only through the delays incident to the preparation and review of environmental statements. It is generally true, however, that public programs of a developmental nature have been and will continue to be delayed and their rationale called into question by the operation of the environmental statement process, with the effect that the magnitude and scope of most of the development programs will be reduced from levels that could have been expected otherwise.

Modifications in Agency Planning Procedures

The NEPA requirements for environmental statements have led to major changes in planning procedures by the Corps of Engineers, the State Highway Division and the Atomic Energy Commission. The Soil Conservation Service is also considering important changes in its planning procedures. All of these changes have the effect of injecting environmental quality values into the early stages of planning and of greatly expanding the role of the public in the planning process.

Corps of Engineers. As discussed by Andrews (1972), the Corps of Engineers very early established the policy that environmental impacts would be fully considered from the very start of planning, and that preparation of the five-point statement required by Section 102(2)(C) of NEPA would be an integral part of the preauthorization survey process (U.S. Army Corps of Engineers EC1165-2-86, April 30, 1970). Later instructions specified that possible environmental impacts were to be identified and assessed in a preliminary way at the first public meeting or "checkpoint conference" of a study. All environmental impacts and effects were to be discussed at the second public meeting of the study; at or following this stage, the Corps district office was to prepare a preliminary draft statement for first review by other agencies and by the public. At the third and final public meeting, a specific and thorough discussion of environmental impacts and effects of all alternatives would be carried out. Under this procedure a substantial body of information and analysis and public reaction thereto would have been collected before a draft environmental statement was prepared and circulated (U.S. Army Corps of Engineers, EC1120-2-56, September 25, 1970). Subsequent instructions by the Corps

to its Districts and Divisions reiterated the basic policy and put increased emphasis on the incorporation of public participation at all stages of the planning process (U.S. Army Corps of Engineers, EC1165-2-100, May 28, 1971). These changes in procedures were consistent with the changes being developed in the overall Water Resources Council principles and standards for planning water-resource projects, which provided that environmental quality be a major objective on a par with economic efficiency. Thus, by the time that these principles and standards were approved by the President in October 1973, the Corps had already provided that environmental quality be given full consideration in its planning process.

Soil Conservation Service. With respect to the Soil Conservation Service, Andrews (1972) reports that as of late 1971 its policy response to NEPA:

> ...appeared designed to minimize or prevent change in its relationship to its client sponsoring organizations. SCS procedures for preparation of environmental statements delayed public disclosure of them even in draft form until tentative agreement on a final work plan had been reached between the agency and the sponsor. The SCS directed only that "adequate information" be given to the public throughout the process up to the time that a final work plan was reached, rather than opportunities to review and comment upon the environmental statement itself.

Andrews' references are to the Soil Conservation Service's environmental guidelines of April 7 and December 7, 1971. Supplements to these guidelines have changed the situation to some degree. In July 1973 the Service established guidelines for encouraging participation by local agencies and citizens' groups throughout the entire process of planning of watershed projects (Soil Conservation Service, Environment Memorandum 15, 1973). Environmental groups such as the Sierra Club, National Wildlife

Federation, and others were included along with Federal, State and local agencies in a sample list of agencies, groups and organizations. On the other hand, the Service has not yet changed its overall planning procedures so as to include environmental quality considerations at each step in the planning process. A draft proposal to accomplish this was prepared by the Service staff in 1972, but was never adopted by the agency. The chart of the planning process in this proposal is remarkably consistent with Figure II.1 in this report, which depicts how environmental considerations would enter the water-resource planning process. Two key features of the Service proposal were (1) an environmental assessment report to be available for discussion at public meetings on results of preliminary project investigations, and (2) a preliminary environmental statement to be available for discussion at public meetings when the draft work plan was being prepared.

If the Soil Conservation Service were to revise its planning process along these lines, its planning procedures would be analogous to those adopted by the Corps of Engineers and would also be consistent with the revised principles and standards of the Water Resources Council. In August 1973 the Service announced that its environmental guidelines were being revised to bring them into conformity with the revised CEQ guidelines of August 1, 1973.

Problems of public access to information on Soil Conservation Service small watershed plans in North Carolina are greatly alleviated by an Act passed by the Legislature in 1971 that requires a public hearing for every water-resource project proposed by the Corps of Engineers, Soil Conservation Service or TVA that would involve stream channel excavation (N.C. Gen. Stat. Sect. 139-147). The hearing is to be held in the county or counties

where the project would be located, and is to be at the preliminary investigation stage of the Soil Conservation Service planning process. Adequate public notice is to be provided. Although this Act is no substitute for a full-scale revision of the Service's planning process, it does help to inject environmental considerations early in the planning process via public participation.

State Division of Highways. The planning of Federal aid highways in North Carolina is governed by policies and procedures established by the Federal Highway Administration, U.S. Department of Transportation. Prior to enactment of NEPA, the Federal Highway Administration had established procedures under which (1) public hearings would be held at the highway corridor location and detailed highway design stages, and (2) consideration would be given by highway planners to social, economic and environmental effects of alternative highway location and designs (U.S. Federal Highway Administration, 1969). Following enactment of NEPA and publication of the CEQ guidelines, the Federal Highway Administration on September 7, 1972, issued comprehensive and detailed guidelines for preparing and circulating environmental statements and for integrating them into the Administration's highway planning process (U.S. Federal Highway Administration, 1972a). The net effect of these guidelines was to require consideration of environmental effects early in the planning process. Thus, at the stage when alternative locations are studied, the environmental impacts are evaluated; if found to be significant, a draft environmental statement is prepared, circulated to Federal and State agencies, and made publicly available at least 30 days before a public hearing is to be held on the alternative locations. If environmental effects are found not to be

significant, a "negative declaration" statement is prepared and also made available to the public at or prior to the public hearing.

These guidelines were supplemented by Federal Highway Administration requirements issued in August 1972 and June 1973 calling for each State highway agency to develop an "Action Plan" that would describe the organization to be used and the processes to be followed in developing Federal-aid highway projects from the initial system planning through design, in order to assure that social, economic and environmental effects would be fully considered (U.S. Federal Highway Administration, 1972b, 1973). In compliance with these requirements, the North Carolina Department of Transportation and Highway Safety completed the North Carolina Highway Action Plan (1973) by November 1973. The Action Plan also includes establishment in the State Division of Highways of an environmental planning section to provide a basic capability for analyzing social, economic and environmental effects of highway projects. It is proposed that this section be fully staffed by September 1974.

It is clear that the Federal and State policy and procedural groundwork has been laid to enable environmental factors to be fully accommodated in State highway planning in a setting where there is substantial public involvement throughout the planning. To the extent that these provisions of the Action Plan are effectively carried out, environmental statements will more and more become a report of the solution of environmental issues rather than a warning signal of issues as yet unresolved.

Atomic Energy Commission. Initially, the Atomic Energy Commission took a narrow view of the environmental statement requirements of NEPA, but, following the Calvert Cliffs decision in 1971 (Calvert Cliffs'

Coordinating Committee v. Atomic Energy Commission, 1971), the Commission moved positively to change its licensing procedures and requirements so as to emphasize environmental considerations early in the planning process (Andrews, 1972). Its interim guidelines of August 1971 required that environmental statements contain complete information on thermal and other water quality effects, on alternative methods of heat dissipation, including costs, on other environmental effects and on projected power needs and alternative methods of generation. The Atomic Energy Commission has further expanded and refined its guidelines, including the development of a benefit-cost methodology for use in preparing environmental statements. However, as the initiative for proposing nuclear power plants lies with the licensee--typically a privately-owned electric utility--environmental considerations are likely to enter the planning only after the basic decisions on what, where and when to build have already been made.

The Role of Litigation

It should be clear from the previous discussion of individual environmental statements that court suits brought principally by environmental groups have played a significant role in bringing environmental values to the fore in North Carolina. One could argue as others have done that, in North Carolina as elsewhere in the nation, the major impact of NEPA on public policy and programs has been through the court suit (Andrews, 1972; Anderson, 1973). Thus, the ability of the Plaintiffs in the New Hope case to obtain a temporary injunction halting construction of an on-going project, and to obtain a Consent Agreement with the Corps of Engineers involving a restudy of how the reservoir is to be operated, with subsequent Court determination of this issue, is truly noteworthy. The pending court suit on

the Falls Lake project is delaying work on this project which has been authorized for construction since 1965 and is currently in the land acquisition stage of pre-construction. In part because of local opposition to the project, the Corps of Engineers made a thoroughgoing revision of its first environmental statement on the project (Falls Lake Final Environmental Statement [Revised] March 1974). The future of the project may now be in question, as the delays incident to the court suit allow new questions to be raised concerning the project plan.

Similarly, the landmark court suit over the Chicod Creek project has served to delay and to stimulate reconsideration of, not only Chicod Creek, but also most pending stream channelization projects in the State. In fact, as the Natural Resources Defense Council (1974) puts it:

> The fate of over 100,000 miles of America's rivers and streams and millions of acres of irreplaceable wetlands may hinge upon the outcome of a legal battle over a small southern stream called Chicod Creek.

Whatever the specific outcome of this suit, there has already been a major inhibiting effect on the stream channelization activities in North Carolina of both the Soil Conservation Service and the Corps of Engineers.

In addition, the indirect effect of the New Hope and Falls Lake lawsuits on other multiple-purpose reservoirs in North Carolina has been to delay activity on them, to stimulate their restudy, or in some cases to force postponement if not abandonment. A longer-range effect may well be practically to eliminate future consideration of any multiple-purpose reservoirs not already planned.

It should be clear that the litigation, although contributing positively to environmental objectives, has also been costly not only in terms

of costs to both parties of advancing the suit and the defense, but also in the losses and increased costs associated with delays and redesign of projects. These costs may be defensible in a period of transition when environmental values are moving toward parity with developmental objectives in the public decision arena. But, such costs should not be accepted as inevitable consequences for the future. In fact, court suits are symptomatic of inadequacies and failures of planning and policy which can best be eliminated by fundamental changes in the planning process, administrative organization and water-resource institutions.

Effect on Public Participation

As revealed in the preceding discussion, the environmental statement process has served to increase the amount of public interest and participation in planning and decisions involving water resources in North Carolina. The basic thrust of NEPA and of CEQ guidelines is to expand opportunities for the public to obtain information on public plans and projects and their environmental consequences. This trend in policy can be traced through the planning guidelines and procedures of the major development agencies, including the Corps of Engineers, Soil Conservation Service and the Federal Highway Administration.

Public participation, however, is still seen by most of the development agencies as involving attendance at public meetings or hearings held at a few key stages of the planning process--typically at the beginning, perhaps near the middle, and finally at the end when an agency plan is unveiled. The Corps of Engineers has begun attempts to involve the public in the planning process on a more systematic basis than heretofore; and is currently

using the Crabtree Creek study as a trial case. The subject of public participation in water-resource planning is now under intensive study in the Southeast; a regional conference on important issues of public participation in water-resource planning sponsored by the Water Resources Research Institutes of the South Atlantic-Gulf States in June 1974 promises to provide additional information on this vital topic.

Relation to the Water Resource Planning and Decision Model

In formal terms, the current situation with regard to water-resource planning and environmental statement preparation in North Carolina conforms rather closely to the model depicted in Chapter II. At the Federal government level, the policy prescription of NEPA, the Federal Water Pollution Control Amendments of 1972, the CEQ and Federal agency environmental statement guidelines, and the Water Resource Council principles, standards and procedures for water-resource planning all emphasize environmental quality as an important national objective. At the State government level, the policy prescriptions of NCEPA and the January 1974 report of the North Carolina Council on State Goals and Policy (Howells, 1974) also establish environmental quality as a major State goal to be considered along with economic development and social progress.

Criteria and Standards. Similarly, a start has been made by the Water Resources Council and the Federal water-resource agencies in developing criteria and standards for evaluating environmental quality effects. For example, the Water Resources Council and the Office of Water Resources Research, Department of the Interior are currently sponsoring a training program for Federal, State and regional water-resource staff on the application of the Water Resources Council's principles, standards and procedures

to current water-resource planning. This program will be conducted at Colorado State University from August 12 to 23, 1974. At the State level, the Department of Natural and Economic Resources is proposing to reorganize its planning activities to achieve, among other improvements, a greatly increased capability for environmental quality analysis and evaluation. Also, the Highway Action Plan of the Department of Transportation and Highway Safety provides for establishment of an environmental planning staff with capability for analysis and evaluation of environmental aspects of transportation planning.

Plan Formulation. As discussed earlier in this Chapter, most Federal water-resource agency planning guidelines emphasize the consideration of environmental factors early in the plan formulation process. In addition, the State of North Carolina has improved its participation in water-resource planning by establishing the North Carolina Water Plan Coordinating Committee in the Department of Natural and Economic Resources to coordinate the water-resource activities of all State agencies, to seek resolution of conflicts and recommend measures for increasing public participation in water-resource planning, and to advance the completion of a water-resources plan for North Carolina (Memorandum from Chairman, North Carolina Water Plan Coordinating Committee, February 25, 1974). The principal activity of this committee has been the preparation of a study on stream channelization for consideration by the Secretary of Natural and Economic Resources. At least at the formal level, environmental quality considerations have been built into the plan formulation processes of almost all Federal and State agencies concerned with water-resources or with development of projects that have water-resource effects.

At the operational level, in contrast, the water-resource planning process in North Carolina does not incorporate environmental considerations to the extent and degree specified by the model depicted in Chapter II. Federal agencies have had little experience as yet in implementing the Water Resources Council's principles, standards and procedures. Also, public participation in water-resource planning at a level higher than attendance at public hearings is in an embryonic stage of development. Furthermore, most water-resource planning agencies have limited expertise in environmental fields, especially those concerned with natural biological systems, including fisheries, wildlife, wetlands and forests. Perhaps it is too much to expect that a water-resource development agency such as the Corps of Engineers or the Office of Water and Air Resources can do effective planning for environmental values such as fisheries, wildlife and natural ecosystems. Under present circumstances, it is not unreasonable for environmental agencies and interest groups to be skeptical on this point.

The logical implication to be drawn from this attitude is that environmental agencies such as the U.S. Fish and Wildlife Service and the North Carolina Office of Fisheries and Wildlife should participate in the planning of water-resources from the beginning and join in formulating and sponsoring the final plan and the associated environmental statement. Since enactment of the Wildlife Coordination Act of 1958, there has been a long history of participation by State and Federal fish and wildlife agencies in Federal water-resource planning. From the point of view of fishery and wildlife interests, much of this experience has been unsatisfactory; they assert that, more often than not, development objectives override preservation

goals, and only token consideration is given to preserving fishery and wildlife resources and habitats. To these interests and the agencies that hold these views, NEPA has been very helpful in promoting environmental values, and the requirement for environmental statements has been especially valuable. Accordingly, although fish and wildlife agencies and non-governmental environmental groups wish to keep abreast of water-resource planning at all stages and to be able to advance their views at key points in the process, they also wish to remain free to criticize and even oppose the final plan, typically via comments on the draft environmental statement. This attitude of reserving one's right is inconsistent with full participation in the planning process, which implies agreement on a final plan and a willingness to support it.

It appears, therefore, that, given the basic differences in values and orientation of the various agencies and interests involved in water-resource and natural-resource planning, no neat solution to the problem of multiple-objective planning for developmental and environmental values is at hand. The prescriptions of the model of Chapter II should be promoted and every effort should be made to involve all divergent interests early in the planning of water-resources. But, there should not be sole reliance on this approach. Rather, the environmental statement procedure should be continued and its working should be improved, to serve as a valuable check of current public and official attitudes and policies toward environmental quality. Hopefully, resolution of development-environmental issues will be largely accomplished at the plan formulation stages of planning, so that the environmental statement becomes a report to the general public and the policymakers of environment values preserved as development objectives are served.

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APPENDIX A

North Carolina Environmental Statements Affecting Water Resources
(Filed Prior to February 1, 1974)

I. U.S. Army Corps of Engineers

A. Navigation

Chowan River Basin

1. Channel dredging of Chowan River, Gates and Hertford Counties, draft statement submitted January, 1972; final statement submitted March, 1972.

Pasquotank River Basin

1. Maintenance dredging of Manteo (Shallowbag) Bay, Dare County, final statement submitted November, 1970.

Neuse River Basin

1. Channel dredging of Dawson Creek, Pamlico County, final statement submitted February, 1971.
2. Channel dredging of Neuse River, Craven County, draft statement submitted August, 1972.
3. Neuse River Channel extension to Streets Ferry, Craven County, draft statement submitted December, 1972.

White Oak River Basin

1. Channel and harbor dredging of Pamlico River and Morehead City Harbor, Carteret, Pamlico and Beaufort Counties, final statement submitted November, 1970.
2. Channel and basin dredging of Atlantic Harbor of refuge, Carteret County, draft statement submitted May, 1971; final statement submitted October, 1971.
3. Channel dredging of Drum Inlet, Carteret County, draft statement submitted May, 1971; final statement submitted August, 1971.
4. Jetties at Beaufort Inlet, Morehead City Harbor, Carteret County, draft statement submitted October, 1971.
5. Maintenance dredging, Channel from Back Sound to Lookout Bight, Carteret County, draft statement submitted June, 1973.
6. Deeper navigation project, Davis, Carteret County, draft statement submitted December, 1973.

Cape Fear River Basin

1. Maintenance channel and basin dredging of Military Ocean Terminal, Sunny Point, Brunswick and New Hanover Counties, draft statement submitted March, 1972; final statement submitted May, 1972.

Lumber River Basin

1. Channel dredging, jetties, dikes at Little River Inlet, Brunswick County, draft statement submitted January, 1972; final statement submitted October, 1972.

Other

1. Five Atlantic Intercoastal Waterway Bridges, final statement submitted November, 1970.

B. Beach Erosion and Hurricane Protection

1. Dune and berm construction on Ocracoke Island, Hyde County, final statement submitted November, 1970.
2. Dune and berm construction at Brunswick County beaches, final statement submitted February, 1971.
3. Coastal Engineering Research Center, Field Research Facility at Duck, N.C., Dare County, draft statement submitted February, 1973.

C. Multiple-Purpose Reservoirs

Neuse River Basin

1. Falls Lake earth dam and reservoir, Wake, Durham and Granville Counties, final statement submitted April, 1971; revised draft statement submitted August, 1973, final, May, 1974.
2. Buckhorn Lake earth dam and reservoir, Wilson, Nash and Johnston Counties, preliminary statement submitted June, 1972.

Cape Fear River Basin

1. New Hope Lake earth dam and reservoir (B. Everett Jordan Reservoir) Chatham, Orange and Durham Counties, draft statement submitted May, 1971, final statement submitted October, 1971.

Yadkin River Basin

1. Roaring River dam and reservoir, Wilkes County, draft statement submitted May, 1972.
2. Reddies River Lake, dam and reservoir, draft statement submitted September, 1973.

Broad River Basin

1. Clinchfield dam and reservoir, Polk and Rutherford Counties, draft statement submitted June, 1972.

D. Flood Control

Tar-Pamlico River Basin

1. Channelization of Broad Creek, Beaufort County, final statement submitted November, 1970.

2. Channelization, snagging and clearing of Tranters Creek, Martin, Beaufort and Pitt Counties, draft statement submitted June, 1971.

Neuse River Basin

1. Channelization and single purpose reservoir in Nahunta Swamp Basin, Wayne and Greene Counties, draft statement submitted September, 1971.
2. Snagging and clearing of Contentnea Creek, Lenoir and Pitt Counties, draft statement submitted September, 1971.
3. Channelization of Adkin Branch, Lenoir County, final statement submitted March, 1972.

Cape Fear River Basin

1. Channelization, snagging and clearing of Rockfish and Docktors Creeks, Duplin, Pender and Sampson Counties, final statement submitted September, 1971.

Catawba River Basin

1. Channelization of Sugar and Briar Creeks, Charlotte, draft statement submitted October, 1971; final statement submitted February, 1972.

II. Other Federal Agencies

A. Tennessee Valley Authority

1. Mills River Dam and multiple purpose reservoir, Henderson County, French Broad River Basin, draft statement submitted June, 1971.
2. Treatment for Eurasian Watermilfoil in TVA reservoirs, draft statement submitted February, 1972; final statement submitted October, 1972.
3. Vector Control Program for TVA lands and water, draft statement submitted February, 1973.

B. Department of Agriculture: Forest Service

1. Land treatment and construction of multipurpose reservoir in Long Creek portion of Tallulah Creek Watershed, Graham County, Little Tennessee River Basin, draft statement submitted November, 1971.
2. Cooperative 1972 Gypsy Moth Suppression and Regulatory Program, draft statement submitted January, 1972; final statement submitted April, 1972.
3. Ten Year Management Proposal, Mills River Unit, Pisgah National Forest, Buncombe, Henderson and Transylvania Counties, French Broad River Basin, draft statement submitted December, 1972, final statement submitted May, 1973.
4. Cooperative 1973 Gypsy Moth Suppression and Regulatory Program, draft statement submitted January, 1973; final statement submitted April, 1973.

5. Management of Wilson Creek Unit, Pisgah National Forest, draft statement submitted June, 1973; final statement submitted December, 1973.
6. Study of National Forest Roadless and Undeveloped Areas, final statement submitted October, 1973.
7. Cooperative 1974 Gypsy Moth Suppression and Regulatory Program, draft statement submitted January, 1974.

C. Department of Agriculture: Agricultural Stabilization and Conservation Service

1. Rural Environmental Conservation Program (statewide), draft statement submitted January, 1974.

D. Department of Agriculture: Rural Electrification Administration

1. Transmission Lines North Wilkesboro to Horse Gap (230 kv) to Boone (100 kv), Wilkes, Watauga and Ashe Counties, New and Yadkin River Basins, draft statement submitted June, 1972; final statement submitted November, 1972.

E. Department of Agriculture: Soil Conservation Service

1. Chicod Creek watershed stream channelization and land treatment, Pitt and Beaufort Counties, Tar-Pamlico River Basin, draft statement submitted April, 1972; final statement submitted July, 1972.
2. Tallulah Creek Watershed, Long Creek portion, land treatment and construction of multipurpose reservoir, Graham County, Little Tennessee River Basin, final statement submitted November, 1972.
3. Bryant Swamp watershed, stream channelization and land treatment, Bladen County, draft statement submitted June, 1973.

F. Department of the Interior: Bureau of Outdoor Recreation

1. Amendment No. 3 to Eno River Park Area acquisition, Durham County, draft submitted April, 1972.

G. Water Resources Council: Ohio River Basin Commission

1. Kanawha River Comprehensive Report, New River Basin, draft statement submitted October, 1971.

H. Federal Power Commission

1. Blue Ridge Project No. 2317, Alleghany County, New River Basin, draft statement submitted June, 1971; modified project draft statement submitted February, 1973; final statement submitted June, 1973.

2. License renewal, Nantahala Power and Light Co. Project No. 2692, Macon and Clay Counties, Hiwassee River Basin, draft statement submitted April, 1972.
3. License renewal, Green River Project No. 2563, Henderson and Polk Counties, Broad River Basin, draft statement submitted July, 1972.

I. Atomic Energy Commission

1. Brunswick Steam Electric Plant Units 1 and 2, Brunswick County, Cape Fear River Basin, draft statement submitted January, 1974.
2. Shearon Harris Nuclear Power Plant Units 1 to 4, Wake and Chatham Counties, Cape Fear River Basin, statement submitted February, 1972 and revised March, 1972; draft statement submitted November, 1972; final statement submitted May, 1973; revised draft statement submitted January, 1974.
3. William B. McGuire Nuclear Station, Mecklenburg County, Catawba River Basin, draft statement submitted July, 1972; final statement submitted October, 1972.
4. H.B. Robinson Steam Electric Power Plant, Unit 2 (nuclear), Hartsville, Darlington County, S.C., Yadkin River Basin, draft statement submitted May, 1973.
5. Catawba Nuclear Power Plant Units 1 and 2, York County, S.C., Yadkin River Basin, draft statement submitted May, 1973; final statement submitted December, 1973.

J. Environmental Protection Agency

1. Marion wastewater treatment facilities, McDowell County, draft statement submitted July, 1973.

K. Department of Housing and Urban Development

1. Soul City New Community, Warren County, Roanoke River Basin, draft statement submitted October, 1971; final statement submitted February, 1972.

L. Economic Development Agency

1. Soul City New Community development of a regional water supply system, Granville, Vance and Warren Counties, supplemental statement to final statement submitted May, 1973.

M. Department of Defense

1. Military exercise "Exotic Dancer V" causing pollution, Jones Onslow, Pender, Duplin, Craven, Carteret, Lenoir Counties and the Croatan National Forest, Cape Fear, White Oak and Neuse River Basins, draft statement submitted March, 1972; final statement submitted May, 1972.

III. North Carolina Department of Transportation and Highway Safety: Division of Highways

Fifty-eight draft and final statements and negative declarations were submitted (through March, 1973) for highway projects involving bridges, culverts, temporary siltation of waterways through erosion during construction, small increases in runoff, and other similar impacts.

In addition the following nineteen statements recognized channel alterations, direct filling operations, clearing and grubbing, removal of hydraulic fill, and other similar impacts.

1. US 25 and 70 from Weaverville to Marshall, Madison County, French Broad River Basin, channel changes, clearing and grubbing, final statement submitted January, 1972.
2. NC 213 Marshall to Mars Hill, Madison County, French Broad River Basin, channel alterations, final statement submitted January, 1972.
3. Kannapolis, Lane Street from I-85 to Cannon Blvd., Cabarrus County, Yadkin River Basin, channelization, filling of Lake Fisher, draft statement submitted January, 1972.
4. US 74 from West of Hallsboro to East of Bolton, Columbus County, Lumber River Basin, through Friar Swamp, draft statement submitted January, 1972; final statement submitted November, 1972.
5. NC 86 Yanceyville to Prospect Hill between NC 119 and SR 1774, Caswell County, Roanoke River Basin, channel change in Lynch Creek, negative declaration submitted February, 1972.
6. NC 24 Fayetteville, Bridge over Cape Fear River, Cumberland County, Cape Fear River Basin, channel changes to Cross and Lock Creeks, final statement submitted February, 1972.
7. US 64 Rosman to Brevard, Transylvania County, French Broad River Basin, channel alterations to French Broad River and other creeks, draft statement submitted February, 1972.
8. I-40 from NC 9 at Black Mountain to US 70 at Old Fort, Buncombe and McDowell Counties, French Broad River Basin, clearing and grubbing, 3 channel alterations to Swannanoa River, draft statement submitted February, 1972.
9. NC 731 Extension from Mount Gilead to Norwood, Montgomery and Stanley Counties, Yadkin River Basin, channel changes on Clarks Creek and Timms Branch, negative declaration submitted March, 1972.
10. US 70 relocation from Dover to New Bern Bypass, Jones and Craven Counties, Neuse River Basin, through Great Dover Swamp, final statement submitted March, 1972.
11. US 70 Bypass of New Bern, Craven County, Neuse River Basin, through marsh, use of hydraulic fill, draft statement submitted June, 1971; final statement submitted March, 1972.
12. US 221 from Baldwin to Jefferson, Ashe County, New River Basin, channel changes, draft statement submitted April, 1972; final statement submitted December, 1972.

13. US 19A-441 from Sylva Bypass to Junction US 19A-441 at Gateway, Jackson County, Little Tennessee River Basin, fill in Tuckaseigee River channel, draft statement submitted July, 1971; negative declaration statement submitted May, 1972.
14. SR 1211 from US 129 near Robbinsville to NC 28, Graham County, Little Tennessee River Basin, channel alterations of Sweetwater Creek, clearing and grubbing, final statement submitted June, 1972.
15. US 441 Gateway to Cherokee, Jackson and Swain Counties, Little Tennessee River Basin, channel alterations, draft statement submitted August, 1972.
16. US 74, 76, 17 reconstruction, Alligator Creek to Bellville, Brunswick County, Cape Fear River Basin, two bridges across Brunswick River, hydraulic fill on Eagles' Island from 2 upland sites and the Brunswick River, sedimentation pond, draft statement submitted February, 1973.
17. US 25 from SR 1101 to the US 25-I-26 Connector, Henderson County, French Broad River Basin, bridge over and channel change to Green River, siltation of Lake Summit, stream crossings, draft statement submitted November, 1972.
18. US 74-76 from Chadbourn to SR 1700 East of Whiteville, Columbus County, Lumber River Basin, crosses Juniper Creek and White Marsh Swamp, negative declaration submitted December, 1972.
19. Interchange on I-26 at SR 1722, Hendersonville, Henderson County, change to Bat Fork Creek, negative declaration submitted March, 1973.

IV. North Carolina State Agencies: Statements Filed Under NCEPA

A. Department of Natural and Economic Resources: Office of Water and Air Resources

1. Uniflite Canal Project, Onslow County, Cape Fear River Basin, statement submitted March, 1972.
2. Long Bay-Nelson Bay Canal Project, Carteret County, White Oak River Basins, statement submitted October, 1972.
3. Atlantic Beach Access Channel, Carteret County, White Oak River Basin, statement submitted December, 1972.
4. Avon Harbor Entrance Stabilization Project, Dare County, statement submitted May, 1973.
5. Stumpy Point Access Channel, Dare County, statement submitted January, 1974.

B. Department of Natural and Economic Resources: Office of Forest Resources

1. Dare Bombing Range Flooding Project, Dare County, Pasquotank River Basin, statement submitted December, 1972.

C. Wildlife Resources Commission

1. Goose Creek Game Lands, salt marsh impoundment, Pamlico County, statement submitted August, 1973.

D. Department of Administration: Marine Science Council

1. Carteret County Marine Resource Facility, White Oak River Basin, draft statement submitted September, 1972; final statement submitted November, 1972.
2. Dare County Marine Resource Facility, Pasquotank River Basin, draft statement submitted September, 1972; final statement submitted December, 1972.
3. New Hanover County Marine Resource Facility, Cape Fear River Basin, draft statement submitted September, 1972; final statement submitted December, 1972.

APPENDIX B

Summary of Analysis of Selected Environmental Statements of the Division of Highways, Department of Transportation and Highway Safety[1]

Introduction

Ten environmental statements and one negative declaration, submitted by the North Carolina State Highway Commission (now the Division of Highways, Department of Transportation and Highway Safety) to the Federal Highway Administration and circulated among different state and federal agencies, for different highway projects, were examined. This sample of statements was selected after a rapid review of most of the statements submitted prior to late 1972 by the State Highway Commission. They were chosen as typical of statements for those projects likely to have the greatest effect on North Carolina water resources, based on the description of the project and its components given in each statement. This rationale for selection was based on the premise that, not only would these projects have the most significant effects, but also the statements would include the most complete information and assessment of the projects' environmental effects, since these would be most readily apparent to the highway agency.

A list of the statements chosen is given in Table B.1. The sample includes both draft and final statements, as well as a single negative declaration. The projects range from highway widening to new route locations and also include different classes of roads, from secondary routes to Interstates. The sample is widely dispersed geographically in North Carolina, from coast to Piedmont to mountains (Figure IV.3, Chapter IV). The projects

[1]Adapted from a working paper by John D. Edwards, May, 1973.

TABLE B.1. NORTH CAROLINA HIGHWAY PROJECT CONSTRUCTION COMPONENTS AFFECTING WATER RESOURCES

NC Clearinghouse file No., project description, statement type, location	Construction of bridge over river or lake	Lesser stream and creek crossings	Major river channel alterations	Stream channelization	Roadway fill into river channel	Roadway fill into lake	Roadway fill into marsh or wetlands	Borrow material from wetlands	Hydraulic fill for borrow material	Borrow pits and other sources of fill	Grading for highway route	Rock cuts	Clearing and Grubbing
3-72, Lane Street from I-85 to Cannon Blvd. in Kannapolis, draft statement, Cabarrus County	X	X		X		X				X	X	X	
6-72,US 74 from West of Hallsboro to East of Bolton, draft statement, Columbus County		X					X	X		X	X		
28-72, NC 74 Bridge over Cape Fear River at Fayetteville, final statement, Cumberland County	X	X		X						X	X		
29-72, I-40 from NC 9 at Black Mountain to US 70 at Old Fort, draft statement, Buncombe & McDowell Counties	X	X	X							X	X	X	X
34-72, US 64 Rosman to Brevard, draft statement, Transylvania County		X	X	X						X	X	X	X

TABLE B.1. NORTH CAROLINA HIGHWAY PROJECT CONSTRUCTION COMPONENTS AFFECTING WATER RESOURCES

NC Clearinghouse file No., project description, statement type, location	Construction of bridge over river or lake	Lesser stream and creek crossings	Major river channel alterations	Stream channelization	Roadway fill into river channel	Roadway fill into lake	Roadway fill into marsh or wetlands	Borrow material from wetlands	Hydraulic fill for borrow material	Borrow pits and other sources of fill	Grading for highway route	Rock cuts	Clearing and Grubbing
44-72, US 70 relocation from Dover to New Bern Bypass, final statement, Jones and Craven Counties	X	X					X	X		X	X		
45-72, US 70 Bypass of New Bern, final statement, Craven County	X	X					X	X	X	X	X		
71-72, US 19A-441 from Sylva Bypass to Junction US 19A-441 at Gateway, negative declaration, Jackson County		X			X					X	X	X	
76-72, SR 1211 from US 129 near Robbinsville to NC 28, final statement, Graham County		X		X						X	X	X	X
97-72, I-40 West of Raleigh to I-95 South of Smithfield, final statement, Wake and Johnston Counties	X	X		X		X				X	X		
100-72, US 441 Gateway to Cherokee, draft statement, Jackson and Swain Counties	X	X		X						X	X	X	

also include a significant range of different types of impacts on water resources.

In the analysis of these statements, the emphasis is placed on the statements' identification of water-resource impacts. To the extent that this is done, other environmental effects and aspects of the statements relating to the economic and human effects of highway construction are neglected. However, the review of the population of highway statements to late 1972 which preceded the selection of the sample, indicates that the quality of information and method of decision-making to be found in them relating not only to their water-resource impacts but also to other items of concern is not essentially different from what is revealed in this analysis.

Summary Analysis of Statements

Following is a summary of the quality of the information given in the environmental statements based upon the detailed analyses. In the statements, generally only the most apparent effects of the highway projects have been identified, let alone measured or predicted on some quantitative or qualitative basis. The magnitude and duration of general effects which are identified are seldom included, and those impacts which are recognized are frequently intermixed with qualifications, value judgments--it may be that NEPA and CEQ guidelines invite these--and reassurances about the moderation of the effects. It should be noted that the CEQ guidelines for environmental statements require: "A description of the proposed action including information and technical data adequate to permit a careful assessment of environmental impact by commenting agencies (Section 6 (a) item i)." The

absence of hard data on expected effects of highway projects would seem to be a contravention of this. Impacts on life forms and the environment which may be considered to be second level effects--as with the influence of siltation on stream flow characteristics or aquatic organisms--are only rarely identified and when they are it is usually as a result of some other agency's inputs to the statement. Given the general low quality of the statements, there is still considerable difference and room for inconsistency among them. Much of what is contained in the statements consists of generality, assertion, and unsupported value judgment with respect to water resources, beyond the identification of impacts and the assurance that "measures" will be taken. By 1973, observations on the actual effectiveness of the "measures" such as silt basins were just beginning to be taken, although there was still no hard information on how much silt escaped into the watercourses. Several of the sample statements consistently claimed that the use of land for highways was not an irreversible commitment, and that at some future point this land might be returned to its original state. Others suggested that, while the commitment of resources was not irreversible, such a turnabout was acknowledged to be impractical. Similarly, the secondary economic growth and development effects and land use changes which frequently accompany highway development, and may indeed be the most important effects, were constantly cited as a positive factor in favor of the highway project while not once were any negative aspects of this growth--such as environmental effects--cited in the sample. Also, only one statement, i.e., that for I-40 in the Raleigh area, included any actual analysis or prediction of noise or air pollution effects, although an examination of others indicated a beginning of additional analysis in some of the statements, prepared in late 1972.

These characteristics of the statements probably reflect attitudes within the state and federal highway organizations. For instance, the Federal Highway Administration's Policy and Procedure Memorandum 90-1 issued in September 1972 (and superseding an earlier version) states: "Highways require use of natural resources such as forest or agricultural land; however, these are generally not in sufficient quantity to be significant." In addition, this document distinguishes a separate category for "highway sections where organized opposition has occured or is anticipated to occur" and the inter-state highway near Raleigh was certainly typified by this characteristic.

Questions of how the statements--and those deciding the fate of the projects--take into account the environmental effects of the projects arise. What weight is given to these effects--temporary and permanent--in the decision for a particular project or among alternatives? How are environmental effects to be valued against or in comparison with other values, such as the displacement of people, or the resources necessary for construction? To what degree have they affected the highway planning process?

It is difficult to understand how water-resource related impacts of the project, and other derivative effects on the environment, could be weighed against other values in decision-making, by any method whatsoever, when they have not even been adequately identified--neglecting both measurement and prediction for the moment--in the statements, either before or after "special care" or "precautionary measures" have been instituted. Similarly, it is difficult to understand how alternative route locations and highway designs could be compared and evaluated without these data.

One of the prime problems is that the information, investigation and analysis needed to enable adequate decision-making is just not generated or completed.

This must be viewed in light of the requirement of Section 102(2)(B) of NEPA for the identification and development of "methods and procedures, in consultation with the Council on Environmental Quality..., which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations." This section would seem to imply the development of new planning and decision techniques, whether by the Federal Highway Administration or the State highway agency. Yet these are not in evidence in the statements examined, although they are apparently included within the scope of the North Carolina Action Plan completed in 1973 by the North Carolina Department of Transportation and Highway Safety in response to Federal Highway Administration requirements.

Excerpts from Statements

It is suggested here, drawing on the evidence of the statements examined, that the method of decision-making used is primarily one of a partial listing of benefits and adverse effects, then a combination of assumption, judgment and assertion. The following excerpts from the sections on "the relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity" of the various statements illustrate this. Other than descriptions of positive and negative effects on water resources, these extracts are essentially all that the statements in the sample contain relating to

the manner in which the effects were weighed and a decision arrived at. That this "judgment" was the essence of the valuation process was confirmed in an interview.

> The benefits to be derived from the long-term effects of the project outweigh all of these adverse short term effects. The improved highway will provide a major benefit to the community...file 3-72

> The adverse effects associated with the project are minor and more than offset by the long term gains received from the project by resident of the community and the state. file 6-72

> Since adverse effects are minor and of short duration compared to the immediate and long-term benefits derived by the community and area there appears to be no significant conflict between the local short-term and long-term productivity of man's environment. file 28-72

> Since adverse effects are minor and of short duration compared to the immediate and long-term benefits derived by the community and region, there appears to be no significant conflict between the local short-term and long-term productivity of man's environment...Again, it is believed that these losses suffered will be more than compensated for by the long-term economic utility of this project. file 29-72

> Most assuredly, will be the long-term positive impact of the improved transportation facility. The economic potential associated with the highway improvement is considered adequate justification for committing the necessary resources and the initial short-term adverse effects caused by the project. file 34-72

> The proposed project can certainly be classified as a long-term productive facility...The benefits, such as reduced operating costs, savings in travel time, reduced accident costs, and the previously cited general economic enhancement of the area and the region, offered by the long-term productivity of this project for all eastern North Carolina as well as the Dover and Cove City areas will more than offset the short-term inconveniences and adverse effects on man's environment. The goal of highway planning is to create facilities that fulfill the need for traffic service, are compatible with today's land uses, and enhance future possible land use and development. Safer, more efficient highway facilities have been proved to have positive and desirable effects on man's environment...file 44-72

> It is therefore concluded that the long-term benefits which will be received from this project are sufficient to justify the minor adverse effects which it will have on the environment and the expenditure of resources which will be needed for its construction. file 45-72

> The adverse effects will be limited and temporary since the proposed project is an improvement of the existing highway. The short term effects are considered to be acceptable in exchange for the long-term benefits of the project. file 71-72

> In contrast, the benefits of the proposed project will more than offset these adverse effects. The project will provide a safer and more efficient transportation facility in this relatively inaccessible mountain area. The economic activity of the area will be stimulated and the overall productivity of the surrounding area enhanced for future generations as a result of...file 76-72

> The proposed project can certainly be classified as a long-term productive facility...The benefits such as...offered by the long-term productivity of this project for all eastern North Carolina as well as the Raleigh and Smithfield areas will more than offset the short-term inconveniences and adverse effects on man's environment. file 97-72

> In summary, the recommended proposal will serve both the present and future transportation needs of this area. The proposed improvement and widening of US 441 is compatible with today's land use and offers the potential for additional development in Jackson and Swain Counties of western North Carolina. The gains received by the residents of the community, region and state will more than offset the minor adverse effects of short duration...file 100-72

Admittedly there remain considerable difficulties in any valuation of positive and negative effects by whatever technique. However the statements give no real indication of any attempt to do so, and no real insight into the manner in which decisions were made.

Inter-agency Coordination

Contact between the highway agency and other governmental agencies prior to the submission of draft statements was evident in a number of statements examined here. This would seem to indicate that the required

four statements, and the subsequent Federal Highway Administration requirement of "coordination" early in the location study phase of decision-making have been successful in stimulating intergovernmental agency communication and inputs. Indeed, an interview revealed that in North Carolina this coordination and contact with other state agencies from the start of the highway planning study provided a major part of the interdisciplinary input, especially the Department of Natural and Economic Resources in the case of water impacts. Typically some alternatives generated from an engineering perspective are sent for comment to state agencies. The extent of this inter-agency communication and the weight given by the highway agency to inputs of other agencies are difficult to ascertain simply from the statements. Without a detailed review of each project it is not possible to know what options or choices have been closed out. Some influence should certainly be expected.

For instance in the case of the New Bern Bypass of US 70 involving the removal of hydraulic fill from the Neuse River, the Wildlife Resources Commission of the Department of Natural and Economic Resources had "advised that in their opinion dredging will be a destructive process for aquatic ecological systems" creating turbidities which would "disrupt any stream habitat." Considerable attention was paid by the highway agency to this expected effect and preventive measures were detailed in the environmental statement. However, an alternative source for fill was not definitely found. Neither were there generated explicit estimates of the actual physical or chemical impact of this procedure on the water quality and life forms.

The responses of other government agencies to the draft statements, in most cases examined here, varied from an inadequate form letter to a detailed critique. However, frequently where other impacts could and should have been identified in the statement, there was no mention or criticism of this by the other agencies.

Summary Comments

A trend noted in the survey of the population of highway project statements was the increasing frequency of use of the negative declaration for projects. This is apparently encouraged by the Federal Highway Administration throughout the United States due to the large number of projects for which statements must be prepared. Negative declarations are typically used where the project consists of improvements which are judged as "not likely to have significant impacts upon the environment" such as signing, marking, or signalization, resurfacing, less than lane width widening, adding shoulders or auxiliary lanes, correcting substandard curves, reconstruction of existing stream crossings not affecting the stream channel, and of highway and railway crossings and intersections, reconstruction of existing roadbed, and "rural two-lane highways on new or existing location which are found to be generally environmentally acceptable to the public and local, State, and Federal officials."

From the evidence of the foregoing examination of environmental statements, it appears that there are actually two stages at which the environmental effects of a highway project are determined by the decisions which are made, and at which an "environmental evaluation" should take place. These stages are those of the selection of the route location and project

design and construction. At the first, the location of the route determines what natural environmental features and land use configurations will be intercepted and affected by the highway project, and to some extent what project components will be required to complete the route. It is at this stage that macro or regional planning considerations enter the decision-making process, and it is determined whether a lake or marsh will be bi-sected rather than an urban community for example and whether some environ-mental effects--such as first level impacts on water resources--will occur.

The environmental statements in North Carolina appear to have opened this stage of the highway planning process to public purview, at least to some extent, although this depends upon the quality of the information con-tained in the statements themselves. Admittedly, as is evident from the previous examination, the quality of the highway environmental statements in North Carolina is somewhat limited. To the extent that this is the case, the public and other governmental agencies are closed out of the process even though the State highway agency is required by the Federal Highway Administration to engage in "coordination" with other government agencies prior to the circulation of the draft statement during the highway location study. However, it is evident that much of the information which it would be desirable to include in the statement concerning environmental impacts and the measures to be taken to modify or alleviate this impact (and thus the impact after preventive actions are implemented) is not generated until the second of the stages noted above.

It is at the project design and construction stage that many of the specific environmental impacts--given a particular route location--will be determined by the characteristics of individual project components, the

manner in which they are designed, the construction techniques to be used and the specific on-site preventive measures to be employed. It is in choosing these that the impact of the project component is determined. And it is at this stage that much more detailed information about the environmental effects should be generated. This will not only facilitate the choices involved at this stage but also have potential as a feedback to the route location decision. Thus, if at some point of investigation at the second stage it becomes evident that the impacts are more significant than originally supposed, the route location can be re-evaluated with proper weight given to the new information.

Clearly, the statements that were examined indicate that these choices at the project design and construction stage concerning project component characteristics and the preventive measures to be implemented are occurring now, as demonstrated by the State highway agency's "Standard Special Provisions" for "protection of the environment," frequently through agreement between highway agency and contractor. Yet the manner in which these statements are written and the timing of their writing and circulation with respect to the entire highway planning process effectively close out this second stage of the process to public and other government agency examination. Indeed the information which might and should be generated does not seem to be generated. The only current way for the public actually to determine what "special attentions" and "preventive measures" have been implemented, and the extent to which erosion and stream siltation have been "minimized" is an on-site inspection.

What seems to be required is a two (or more) stage decision process wherein, at the first, alternative route locations with regional planning

and macro-environmental considerations, are examined and only tentative approval of route location is given to the highway agency. The public and other agencies would be provided an opportunity to obtain more information about alternative locations and specific project components so that environmental impacts--and others also for that matter--may be evaluated and weighed in some systematic procedure. At the second stage the highway agency would, assuming a tentative approval had been given, provide this information--whether or not requested--and a more detailed evaluation and weighing would be made for the components. A return to the route location stage might be necessary in some cases as alternative designs and preventive measures were assessed. It is possible that these improvements in procedure can be made as a part of implementing the North Carolina Highway Action Plan.

APPENDIX C

Chronology of Actions on Selected Water Resource Projects

I. New Hope Lake (B. Everett Jordan Lake)[1]

1963

December 30	New Hope Lake project authorized by Congress for construction (Public Law 88-253)

1970

January 1	National Environmental Policy Act enacted.
December 7	Ground breaking for start of construction for the project.
December 14	Wilmington District, U.S. Army Corps of Engineers announces that an environmental statement will be prepared for the project and sends 10-page statement of environmental aspects of the project to the Durham ECOS with request for views and comments.

1971

March 9	North Carolinians including State Representative James Holshouser, State Senator Hamilton Horton and environmentalists James Wallace, Ernest Carl and Edward Wiser in meeting with the Council on Environmental Quality present critical analysis of the project.
March 30	District Engineer sends 12-page draft environmental statement to Federal and State agencies, Research Triangle Planning Commission and Durham ECOS with request for comments "at your earliest convenience."
April 21	District Engineer sends revised 15-page draft environmental statement incorporating additional environmental information to the same agencies for comments.

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[1]This chronology is based on James C. Wallace, The National Environmental Policy Act of 1969: An Analysis of Its Impact on the New Hope Dam Project, Master of Science report, U.N.C. Department of Environmental Sciences and Engineering, 1974.

1971

May 11	Chairman of the Council on Environmental Quality writes to Representative Holshouser reporting that the Corps of Engineers would continue railway and highway relocation work at the New Hope site but would let no new contracts pending completion of the final environmental statement.
August 10	Conservation Council of North Carolina, ECOS, Inc., and affected citizens file a motion for injunctive and declaratory relief against construction of the project, in U.S. Middle District Court of North Carolina.
October 22	Corps of Engineers files its three-volume, 704-page final environmental statement on the project with the Council of Economic Advisers.
October 28	Corps of Engineers answers the compalint and files a copy with the Court.

1972

January 25	Conservation Council of North Carolina files a 11-page critical analysis of the Corps' final statement with the Council on Environmental Quality.
February 14	District Court Judge Gordon, in denying the plaintiffs' motion for preliminary injunction, finds that, although the Plaintiffs have presented strong evidence which casts doubt on the advisability of continuing with the New Hope project, they have not shown that defendants failed to comply with the requirements set out in NEPA.
March 3	Plaintiffs file motion of appeal with the U.S. Court of Appeals, Fourth District.
May 2	U.S. Court of Appeals affirms Judge Gordon's denial of the preliminary injunction.
August 2	Plaintiffs and Defendants file motions with Judge Gordon for summary judgment on Plaintiffs' motion for a permanent injunction.
August 30	Judge Gordon denies Plaintiffs' motion for summary judgment, in effect denying the permanent injunction.
September 11	Plaintiffs appeal to U.S. Court of Appeals, Fourth District.

1973

February 8	U.S. Court of Appeals remands case to the District Court with directions to review the substantive findings of the Corps of Engineers on the project and to issue a preliminary injunction against further work on the project.
February 11	Judge Gordon issues a preliminary injunction which halts all further work, with minor exceptions.

1974

February 5	Judge Gordon approves a Consent Judgment allowing the Corps of Engineers to complete the dam and providing that data relating to water quality and reservoir operation is to be collected to March 1, 1975, following which a draft supplemental environmental statement is to be prepared and circulated, with the final supplemental statement expected to be filed with the Council on Environmental Quality by January 1, 1976. The Court retains jurisdiction over decision whether to allow operation of the dam to create and maintain a long-term storage lake.

II. Falls Lake[1]

1965

October 27	Falls Lake project authorized by Congress for construction (Public Law 89-298).

1970

January 1	National Environmental Policy Act enacted.

1971

February 10	Wilmington District, U.S. Army Corps of Engineers completes environmental statement for the project. Statement consists of seven pages.

[1] This chronology is based in part on a working paper prepared by Peter Petrall in May, 1973.

1971

April 15	Corps of Engineers files final environmental statement with CEQ. Statement consists of seven pages plus five exhibits of commentaries from Federal and State agencies.
July 19	North Carolina State Legislature authorizes State financial participation in recreational features of the project.

1972

March 6	Corps of Engineers testifies before the U.S. House and Senate Appropriations Committees in favor of an appropriation request of $4.3 million for fiscal year 1973 to begin work on the project. No mention is made in the justification statement of the environmental effects of the project.
April 15	Joseph LeConte Chapter of Sierra Club writes the District Engineer, Wilmington District, Corps of Engineers expressing concern for environmental consequences of the project and the inadequacy of the environmental statement and requesting an updating of the statement before construction is begun on the project.
May 26	A follow-up letter is sent to the District Engineer by the Joseph LeConte and Research Triangle Chapters of the Sierra Club, ECOS, Inc., and Wake Environment, restating specific items to be reconsidered in updating the environmental statement.
September 11	Corps of Engineers announces signing of cost-sharing agreement between the State of North Carolina and the Corps for the project. Congressional appropriations of $3.3 million for fiscal year 1972 and $4.3 million for fiscal year 1973 are reported available to enable work to begin on the project within six months.
October 12	Committees on Public Works, U.S. House and Senate, request the Corps of Engineers to review previous reports on the Neuse and Cape Fear River basins with the view to providing a plan of development to meet the water and related land-resource needs of the Raleigh, Durham, and Chapel Hill urban area. The Corps interprets this review request as not intending a reevaluation of the Falls Lake or New Hope Lake projects.

December 29	Wilmington District, Corps of Engineers issues 27-page information brochure on the project, covering major project features and purposes, project status with respect to readiness for construction, reevaluation, and environmental statement. The Corps reports that the environmental statement is being updated, and that a draft updated statement would be completed by August 1973.

1973

March 8	The Neuse Valley Association (an association of landowners in the project area) files in the U.S. District Court for the Eastern District of North Carolina a complaint and motion for temporary restraining order and preliminary and permanent injunction to halt acquisition of land prior to start of construction on the project. The Plaintiffs assert that the 1971 environmental statement for the project is inadequate, and that the procedural requirements of NEPA have not been met.
March 20	Senator Jesse Helms announces that he will not support construction of the project as planned.
April 16	Judge Franklin T. Dupree, Jr. holds hearing on Plaintiff's motion for preliminary injunction and Defendant's motion to maintain the environmental status quo of the land use within the project area by Plaintiffs.
April 23	District Engineer, Wilmington District, Corps of Engineers distributes to all libraries in Wake, Durham and Granville Counties copies of water quality and botanical studies of the project by University of North Carolina scientists at Chapel Hill, and reports that these studies will be included in the updated environmental statement.
June 22	Judge Dupree signs Order denying Plaintiff's motion for preliminary injunction and Defendant's motion without prejudice, and providing for a hearing on the merits approximately two weeks after the revised environmental statement is filed with the CEQ.
August 27	Wilmington District, Corps of Engineers distributes its draft revised environmental statement on Falls Lake to 87 Federal, State and local governmental agencies, special interest groups and county libraries.

1973

August 27	The statement with its appendices comes in five volumes, with more than 2,000 pages, and represents a revision of the 1971 statement covering environmental changes to be caused by the project covering flora, fauna, fish and fowl. Comments are requested within 45 days. The Corps also announces availability of the statement in a letter sent to many residents of the Greater Raleigh-Durham area.

1974

May 1	Corps of Engineers files final revised environmental statement with the CEQ. The District Engineer concludes that "the proposed Falls Lake project employs all practicable means, consistent with other essential considerations of national policy, to meet the goals established in the National Environmental Policy Act..."

III. Chicod Creek[1]

1966

August 22	Chicod Creek watershed project authorized by Congressional Agriculture Committees for operations under provisions of Public Law 566, 83d Congress.

1970

January 1	National Environmental Policy Act enacted.

1971

February 4	Soil Conservation Service issues Watersheds Memorandum 108 directing review and classification of all stream channelization projects in terms of environmental impact.
May	Pitt County Drainage District No. Nine contracts to become local sponsor for the project, thus clearing the way for work to begin.
August 5	Soil Conservation Service and Pitt County Drainage District No. Nine sign a supplemental work plan agreement embodying modifications in the project to mitigate some adverse fishery and wildlife effects of the project.

[1]This chronology is based in part on a working paper prepared by Paul Fisher in May, 1973.

1971

September 10	Acting Regional Director of the U.S. Fish and Wildlife Service writes to State Conservationist, Soil Conservation Service, asserting that the proposed mitigation measures will not significantly lessen the adverse effects of the project on the ecosystem of the watershed and requesting that the project be placed in Group 3 (serious adverse effects) as defined in Watersheds Memorandum 108 until the proposed stream channelization is eliminated in Chicod Creek.
September-October	Soil Conservation Service concludes that, as modified, the project is classified in Group 1 (no significant adverse effects) as defined in Watersheds Memorandum 108, and that no environmental statement is required before construction is started.
November 30	The Natural Resources Defense Council, North Carolina Wildlife Federation, Pamlico-Tar Conservation Coalition, National Wildlife Federation and Friends of the Earth file a motion in the U.S. District Court for the Eastern District of North Carolina for a preliminary injunction against start of construction on the project, partly on the basis that Defendants propose to start construction without preparing and circulating an environmental statement as required by Section 102 of NEPA.
December 21	State Conservationist of the Soil Conservation Service writes to Assistant Secretary for Resource Management, Department of Natural and Economic Resources reporting that, after an intensive review of all watershed projects that were approved for operations before passage of NEPA, in accordance with instructions in Watersheds Memorandum 108, the Service has determined that the Chicod Creek project as modified "does not significantly affect the quality of the human environment" and therefore that an environmental statement is not required.
December 30	Assistant Secretary, Department of Natural and Economic Resources, in replying to the State Conservationist, expresses disagreement with the finding of the Service that the modified project will not have significant environmental effects, and points to the Fish and Wildlife Service letter of September 10, as support for his view that the project should be classed at least in Group 2 (requiring further studies of environmental effects) as defined in Watersheds Memorandum 108.

1972

March 16	Judge Larkins of U.S. District Court for the Eastern District of North Carolina rules that the Chicod Creek project is a major Federal action significantly affecting the quality of the human environment and that an environmental statement must be prepared prior to proceeding with construction, and issues a preliminary injunction against construction pending compliance with provisions of NEPA. Defendants are given 30 days in which to prepare and file an environmental statement.
April 14	Soil Conservation Service files 45-page draft environmental statement with CEQ and circulates it to Federal and State agencies and the general public; the statement covers the five points of information listed in Section 102(2)(C) of NEPA.
May 18	Natural Resources Defense Council and other Plaintiff environmental organizations file a detailed 61-page commentary on the draft statement, taking exception to many of the findings in the draft statement and providing supplemental information and opinion.
May	ECOS, the Joseph LeConte Chapter of the Sierra Club, the Pamlico-Tar Conservation Council and the Environmental Policy Center of Washington, D.C. file critical comments on the draft statement.
July 13	The Soil Conservation Service files the final environmental statement with CEQ. The statement includes copies of all comments from Federal and State agencies, environmental groups and others, and contains a point-by-point response to each specific comment. No substantive changes in the project work plan appear to be proposed by the Service as a result of comments received.

1973

February 3	Judge Larkins finds the final environmental statement filed by the Soil Conservation Service to be inadequate to meet the NEPA requirements of full disclosure of impacts and alternatives and full consideration of them in agency decision-making. Judge Larkins lists eight categories of inadequacy in the environmental statement. He issues a preliminary injunction barring further action on the project pending a full hearing on the merits of the case.

1974

May 16 North Carolina Clearinghouse and Information Center receives draft revised environmental statement prepared by the Soil Conservation Service for the project. The statement with five appendices consists of four volumes with a total of 527 pages.