

1973 REPORT
LEGISLATIVE RESEARCH COMMISSION

SEDIMENTATION CONTROL

TO THE MEMBERS OF THE 1973 GENERAL ASSEMBLY:

The Legislative Research Commission herewith reports to the 1973 General Assembly its findings and recommendations concerning legislation for the control and abatement of water pollution from sedimentation. This report is made pursuant to Senate Resolution 961 of the 1971 General Assembly, which directed the Commission to study the need for legislation concerning the "prevention and abatement of pollution of the State's waters by sedimentation and siltation, particularly that occurring from runoff of surface waters and from erosion," and to report its findings and recommendations to the 1973 General Assembly.

This study was initiated by the Environmental Studies Committee of the Legislative Research Commission. This Committee consisted of:

Senator William W. Staton, Co-Chairman

Representative William R. Roberson, Jr., Co-Chairman

Representative Jack Gardner

Representative W. S. Harris, Jr.

Senator Hamilton C. Horton, Jr.

Representative W. Craig Lawing

Senator L. P. McLendon, Jr.

Senator Marshall A. Rauch

Senator Norris C. Reed, Jr.

Representative Charles H. Taylor

Senator Stewart B. Warren, Jr.

The Subcommittee to which this study was referred consisted of Representative Harris, Chairman, Senator Horton, Senator Rauch, Mr. Joseph Gentili, Mr. David S. Howells, and Mr. Cameron W. Lee.

Respectfully,

Representative Philip P. Godwin

Senator Gordon P. Allen

Co-Chairmen, Legislative Research Commission

TABLE OF CONTENTS

Introduction1
The Sedimentation Problem.1
Present Erosion Control Efforts and Capabilities4
The Work of the Legislative Research Commission.	12
Findings	13
Recommendations.	15

Appendices

Appendix A--Proposed Bill to Implement Recommendations.	17
Appendix B--Section-by-Section Analysis of Proposed Bill	32
Appendix C--Senate Resolution 961--Study Resolution	40
Appendix D--List of Witnesses.	43

REPORT BY THE LEGISLATIVE RESEARCH COMMISSION
TO THE 1973 GENERAL ASSEMBLY

SEDIMENTATION CONTROL

Introduction

Senate Resolution 961, adopted by the 1971 General Assembly, directed the Legislative Research Commission to study the need for legislation on eight topics of environmental concern and to report its findings and recommendations to the 1973 General Assembly. This report is addressed to the study directed to be made of one of those topics: "Prevention and abatement of pollution of the State's waters by sedimentation and siltation, particularly that occurring from runoff of surface waters and from erosion." (See Appendix C.)

It is our recommendation that legislation be enacted in 1973 to control siltation and sedimentation to the greatest extent practicable. A bill embodying this recommendation is included in this report as Appendix A. Appendix B contains a section by section analysis of the bill.

The Sedimentation Problem

To conclude that soil erosion and the resultant sedimentation are serious problems in North Carolina it is only necessary to observe what is happening at the construction sites of many shopping centers, apartment complexes, and subdivisions, and then to look at the nearby muddy streams and mudflats in lakes and reservoirs. Dr. Arthur W. Cooper, Assistant Secretary for Resource Management, Department of Natural and Economic Resources, stated at one of the meetings of the Sediment Control Subcommittee that sediment is the major pollutant in North Carolina's rivers and streams.

This is echoed at the national level by William D. Ruckelhaus, Administrator of the Environmental Protection Agency, who stated in a letter of February 8, 1972, that sediment is the major pollutant of the nation's waters by volume. Earl C. Hubbard, Assistant Director of the Office of Water and Air Resources, Department of Natural and Economic Resources, informed the Sediment Control Subcommittee of sediment loads carried by certain North Carolina rivers in 1968 as determined by the department's monitoring stations: the Yadkin, 575,000 tons; the Tar (near Nashville), 935-990 tons per day; the Eno (near Hillsborough), 400 tons per day; the Haw (near Pittsboro), 18,000-24,000 tons per day.

The causes of erosion are many and various. Some natural erosion occurs where man has engaged in no earth disturbing activities and some occurs despite man's best efforts to prevent it. The soil type, rainfall characteristics, topography, vegetative cover, activities taking place on the land, and erosion control practices all effect in greater or lesser degree the amount of erosion and resulting sedimentation. The harmful effects of sedimentation are almost as numerous as the causes of erosion. There is first the esthetic nuisance problem: a river or lake's recreational value is greatly diminished if it carries a large sediment load. Other pollutants, such as pesticides, adhere to sediment particles and are thereby carried into streams. Sediment is harmful to fish and other aquatic life because it covers eggs, clogs gills, and reduces the depth at which photosynthetic activity can take place. The useful lives of lakes and reservoirs are shortened when they are filled with sediment. Sediment in municipal water supplies greatly interferes with the purification process. The costs of sedimentation are difficult to measure and so are the benefits accruing from erosion control. A 1968 report esti-

mated the total national cost of sediment problems to be one billion dollars. Professor C. G. Bell of the University of North Carolina at Charlotte told the subcommittee that every scholar that he knew of that had studied the matter was convinced that the benefits to be gained from erosion control measures far outweigh the costs of such measures when balanced against the damage costs of sedimentation.

Soil erosion and sedimentation are not new environmental problems in North Carolina, but they have recently appeared in a new guise. In the early decades of the twentieth century, attention in North Carolina, as in the rest of the South, was focused primarily on prevention of erosion from farmland. The problem was viewed not in the context of water pollution but rather as one of how to preserve valuable topsoil. Over the past thirty years, the efforts of the Soil Conservation Service of the U.S. Department of Agriculture, the State Soil and Water Conservation Committee and the local Soil and Water Conservation Districts have greatly reduced erosion from agricultural land. As the state has become increasingly urbanized and as more roads have been built, the source of the problem has shifted away from rural land to such urban and suburban activities and sites as subdivision development, shopping centers, and the whole panoply of earth disturbing activities that accompany urban growth. In many instances the sediment causing activities take place beyond municipal boundaries and therefore beyond the reach of municipal subdivision and other land use ordinances. Although it is true that many of the techniques developed over the years for dealing with control of erosion from agricultural land can be adapted for the control of erosion in urban areas, at least two marked differences in the problems should be noted: First, it is in a farmer's own economic self-interest to retain as much of his

topsoil as possible, but it is usually of no concern to the developer how much topsoil leaves the site. Second, the erosion from farmland is usually topsoil, that from construction sites is usually subsoils.

Present Erosion Control Efforts and Capabilities

The techniques and devices for controlling erosion in areas of urban growth are well known and fall into two categories. In the first category are building and grading practices that minimize the risk of potential erosion, such as natural terrain building, rearranging the order of construction (building driveways and garage floors first), uncovering only a limited amount of ground at any one time and leaving it uncovered for only a brief time, and reducing to a minimum the traffic of heavy construction vehicles over uncovered ground and through streams. The second category includes techniques to minimize erosion on uncovered ground and to reduce the velocity of water and increase the holding power of the soil. These include the placing of brush barriers between graded areas and streams or ditches, the use of sediment collection basins, diversion berms, sodded ditches, and grass seeding and reforestation. To say that most of the techniques for erosion control are known is not to imply that additional research is not needed or that soils scientists, botanists, and civil engineers and landscape architects know all they need to know about the effectiveness of various techniques and combinations of techniques in the many different circumstances in which earth disturbing activities are carried on and erosion and sedimentation may occur. Rather, it is to show that the central problem in devising a control program for North Carolina is not lack of knowledge of erosion control techniques, but is rather how to structure an administrative arrangement that will most effectively re-

quire the application of known techniques to earth disturbing activities. To illustrate this problem we have listed below the agencies and programs with existing or potential authority in erosion control.

1. State Soil and Water Conservation Committee. As stated above, the State Soil and Water Conservation Committee, Office of Earth Resources, Department of Natural and Economic Resources, in conjunction with the federal Soil Conservation Service, and working through the local Soil and Water Conservation Districts has for over thirty years been conducting a program of education, advice, and demonstration in efforts to hold erosion of farmland to a minimum, on the whole successfully. The State Soil and Water Conservation Committee has no authority to enforce compliance with any conservation plans or rules that it might promulgate. Land use regulations having the effect of law may be adopted in any individual soil and water conservation district only upon a two-thirds vote of the land occupiers in the district (N.C.G.S. § 139-9). The State Committee and the local districts have concentrated their efforts on rural land and they have not been enforcement oriented. They possess, however, in conjunction with the Soil Conservation Service the largest body of knowledge and experience in the field of erosion control of any agencies in state or local government.

2. State Highway Commission. The State Highway Commission has promulgated certain standard special provisions for erosion control that are included in all contract construction projects. The first sentence of Article 7.13(A) of these specifications sets the tone: "The Contractor shall take whatever measures are necessary to minimize soil erosion. . . caused by his operations." The projects are inspected from time to time to check for compliance with specifications and when the contractor completes the project it must be left in such a condition as to minimize any

erosion. This may involve seeding, mulching, concrete drains with rip-rapping, and many other control techniques.

3. Division of Mining. The Division of Mining, Office of Earth Resources, Department of Natural and Economic Resources, is headed by the State Mining Engineer and was created in 1969. The legislation under which the Division of Mining operates (N.C.G.S. § 74-39 through § 74-68) defines mining generally as the removal of solid matter from the ground and the related processing operations. Persons planning to engage in such activities must obtain a permit from the State Mining Engineer and as part of the permit application present a reclamation plan for the mined area. When a permit is issued it is conditioned specifically upon compliance with the approved reclamation plan. The Division of Mining also requires a bond of persons engaged in mining activities to ensure compliance with the reclamation plan. The amount of the bond may vary, but the minimum is \$2,500 and the maximum is \$25,000. Excluded from coverage of the statutes are mining operations that affect less than one acre of land and those aspects of underground mining that affect less than one acre of surface land. Also excluded are excavations and gradings when conducted solely in aid of on-site farming or on-site construction for purposes other than mining. Operations of the State Highway Commission and its contractors on highway rights of way and at borrow pits are exempted provided that the Highway Commission adopts reclamation standards and obtains approval of such standards from the State Mining Council.

4. North Carolina Forest Service. The Forest Service, Office of Forest Resources, Department of Natural and Economic Resources, is charged with the responsibility of managing the state forests (N.C.G.S. 113-29 et seq.). Although the statutory provisions contain no specific directions

concerning erosion control, it is obvious that the policies and procedures concerning the planting and cutting of trees in the state forests has a substantial impact on sedimentation of streams. The Forest Service is also directed and authorized to advise owners of private forests in management practice. This too can have substantial effect on erosion control. The Forest Service works in conjunction with the U.S. Soil Conservation Service in administering Public Law 566, Small Watershed Program. The Forest Service is responsible for soil stabilization with trees on critical erosion areas where the SCS designates areas as suitable for such stabilization.

5. Division of Commercial and Sport Fisheries. The Division of Commercial and Sport Fisheries, Office of Fisheries and Wildlife Resources, Department of Natural and Economic Resources, administers the dredge and fill permit program. Before any excavation or filling project is begun in any estuarine waters, tidelands, marshlands, or state-owned lakes, the person desiring to carry out the project must obtain a permit therefor. The permit application is then circulated among all state and federal agencies having jurisdiction over the subject matter. An application may be denied upon any of the following grounds: (1) that there will be significant adverse effect of the proposed project on the use of the water by the public; (2) that there will be significant adverse effect on the value and enjoyment of the property of any riparian owners; (3) that there will be significant adverse effect on public health, safety, and welfare; (4) that there will be significant adverse effect on the conservation of public and private water supplies; or (5) that there will be significant adverse effect on wildlife or fresh water, estuarine or marine fisheries.

6. Office of Water and Air Resources. The Office of Water and Air Resources, Department of Natural and Economic Resources, has primary re-

sponsibility for the management and maintenance of water quality in North Carolina. The Board of Water and Air Resources, working through the office, has authority to classify the streams of the state, to control new sources of pollution through a permit program, and to control existing sources through abatement orders. Although the definition of "water pollution" [N.C.G.S. § 143-213(19)] appears to be broad enough to include sedimentation, the definition of "wastes" [N.C.G.S. § 143-213 (18)], upon which the enforcement powers of the board depend, appears to cover pollution caused by sedimentation only if the offending materials are discharged directly into the water or are "placed in such proximity to the water that drainage therefrom may reach the water" [N.C.G.S. § 143-213(18)c.]. In addition to this jurisdictional shortcoming, the primary thrust of the office's control authority and efforts is toward "point" sources of water pollution, such as industrial plants, rather than toward "non-point" sources, such as sedimentation caused by erosion.

7. Council on State Goals and Policies and Department of Administration.

The Council on State Goals and Policies and the Department of Administration have an important contribution to make to erosion control in two major areas. First, they have a major role in administering the environmental impact statements program under the Environmental Policy Act of 1971 (N.C. G.S. Chapter 113A). This Act requires the submission of a detailed statement of the environmental impact for any major project or program involving expenditure of public funds and a statement of the alternatives to the proposed project. Clearly, the effects on stream sedimentation should be one aspect to be covered in every impact statement. Second, the Council is charged with the duty of recommending objectives concerning the use of state resources, and the Department of Administration has the major role in state government in planning and in assisting local governments in their planning efforts. Wise and effective land-use planning is a major element in the control of erosion.

8. Department of Agriculture. The North Carolina Department of Agriculture has no specific charge to develop erosion control programs but it does have a general interest in the problem, especially as it effects farm and timber lands. The Soil Testing and Seed Testing Divisions of the department conduct programs that are of existing and potential value in seeking appropriate vegetative covers for different types of soil and climate.

9. Agricultural Extension Service. The North Carolina Agricultural Extension Service of North Carolina State University, in cooperation with the U.S. Department of Agriculture, conducts extension and educational programs in each of the state's one hundred counties through facilities at N. C. State and the one hundred county agents located throughout the state. Erosion control education has been one of the major projects of the service, and it has promoted the use of sound tillage methods, in-service training programs in the interpretation and use of soil surveys, and workshops and training programs to disseminate erosion control information to developers, planners, and public officials.

10. Agricultural Experiment Station. At the North Carolina Agricultural Experiment Station at North Carolina State University, research is conducted in agricultural and related activities by soil scientists, foresters, zoologists, and agricultural engineers. The products of this research, as they relate to sediment control, should be of value to any agency administering a control program.

11. Agricultural Stabilization and Conservation Service. The Agricultural Stabilization and Conservation Service of the U.S. Department of Agriculture provides financial assistance to farmers on a cost-share basis, usually fifty-fifty, for carrying out approved conservation and erosion control practices on their farms that they would not normally do without financial assistance. The Appalachian Regional Development Act provides additional cost-share assistance to land owners in the Appalachian region to prevent erosion and sedimentation. This program is conducted on a watershed basis.

12. U.S. Army Corps of Engineers. The programs of the Corps of Engineers are directed toward the prevention of erosion of the banks of rivers and reservoirs and with a few exceptions are concerned only with publicly-owned lands. Much of the Corps of Engineers' work is concerned with allowing for the build-up of sediment in reservoirs and in dredging sediment out of river channels, rather than the prevention of erosion in the first place.

13. Environmental Protection Agency. At the present time the U.S. Environmental Protection Agency has no statutory authority for the institution of erosion control programs. Pending in Congress, however, are two water pollution control bills, H.R. 11896 and S. 2770--which have almost identical sediment control provisions--that would greatly expand the federal government's role in sediment control. The major features of the sediment control provisions of the bills are these: (1) The Environmental Protection Agency shall promulgate guidelines for the effective control of sedimentation from land disturbing activities, including the construction of public and private buildings, roads, and highways, but excluding uses of land for agricultural, silvicultural, ranching or grazing purposes; (2) the guidelines shall prescribe categories of land disturbing activities for which

(a) permits are required, or (b) general regulation is required, or (c) no regulation is required; (3) within one year after the promulgation of the federal guidelines, each state must submit a sedimentation control program to the EPA for approval, such plan to be designed to control erosion in the areas of critical sedimentation in the state; (4) once a state plan has been approved and is in effect, land disturbing activities may be conducted only in accordance with regulations adopted pursuant to the state plan, or after the responsible person has submitted a sediment control plan to an appropriate and qualified agency and has received a permit from that agency; and (5) the lead state agency may delegate its approval and enforcement authority to other state agencies and to local governmental units qualified to administer the state plan, subject to state monitoring by the lead agency. It is to be noted that the proposed federal legislation makes three classifications of land-disturbing activities, those to be covered by general regulation, those for which a permit is required, and those subject to no regulation; apparently the states are expected to follow the same course and are to focus on the areas of critical sedimentation.

14. Local governments. North Carolina counties and municipalities would appear to have considerable authority to pursue erosion control programs through the power to enact zoning and subdivision regulations and the general ordinance power. Through this combination of powers much could be accomplished through effective land use planning and grading and clearing ordinances. Additionally, two counties, Wake and Forsyth, obtained special legislation from the 1971 General Assembly to empower them to enact erosion control ordinances.

The Work of the Legislative Research Commission

Acting under Senate Resolution 961, we appointed a subcommittee of the Environmental Studies Committee to consider the subject of sedimentation pollution consisting of Representative W. S. Harris, Jr., Chairman, and Senators Hamilton C. Horton, Jr. and Marshall A. Rauch. Public members appointed to the subcommittee were Joseph Gentili, Department of Landscape Architecture, North Carolina State University, David H. Howells, Director, Water Resources Research Institute, North Carolina State University, and Cameron W. Lee, Carolinas Branch Associated General Contractors of America.

The subcommittee held three hearings. The first meeting developed general information about the sedimentation problem and existing techniques for erosion control. The primary purpose of the second meeting was to learn about existing state and local programs for erosion control and to discuss possible administrative arrangements for a state-wide control program. The third meeting was devoted to discussions of actions presently being taken by builders and developers to control erosion at construction sites and of the problems that various regulatory approaches might present to builders. Pending federal sediment control legislation was also discussed. At the fourth meeting of the subcommittee, tentative agreement was reached on the major features of the bill to be recommended, and the subcommittee directed its staff, the Institute of Government, to draft a bill for further discussion. The draft bill and other recommendations were then discussed and amended, and a draft report with recommendations, including a bill, was submitted to the Environmental Studies Committee. After receiving suggestions from the committee, the subcommittee perfected its recommendations. We have adopted the findings and recommendations of the subcommittee.

Findings

The Commission makes the following findings concerning water pollution from sedimentation:

(1) Sedimentation from soil erosion and runoff constitutes a major pollution problem in North Carolina's rivers, lakes, and reservoirs.

(2) Although the optimum level of erosion control from agricultural land has not yet been achieved, erosion from such land has been greatly minimized through the continuing efforts of the State Soil and Water Conservation Committee and the U.S. Soil Conservation Service.

(3) The major sources of soil erosion and the consequent sedimentation in North Carolina are construction sites in urban areas and road construction and maintenance activities.

(4) The costs of controlling erosion appear to be small when compared to the benefits to be derived from such control.

(5) At the state level there presently exist at least nine agencies or subagencies with some degree of authority over erosion control. Most of these offices and divisions are located in the Department of Natural and Economic Resources. There appears to be no formal coordinating mechanism for erosion control programs among the various agencies.

(6) Local governments appear to have the necessary legal authority for the enactment of erosion control regulations but need technical advice and assistance in drafting, implementing, and enforcing such regulations.

(7) There is presently pending in Congress legislation that would require every state to develop a sediment control program within federal guidelines or else face the prospect of a federally administered program within critical sedimentation areas of the state.

(8) There is a need for legislation and funds that would empower a state agency to develop state-wide regulations concerning sediment control, to coordinate the erosion control efforts of other agencies, to

advise and assist local governments in developing sediment control programs, and to serve as liason with the Environmental Protection Agency for the coordination of state and Federal programs.

Recommendations

The Commission makes the following recommendations concerning a sediment control program for North Carolina:

(1) The Department of Natural and Economic Resources, the Department of Agriculture, the North Carolina Agricultural Experiment Station, and the Department of Transportation and Highway Safety should continue and stimulate research into the various aspects of erosion control and sedimentation, including, but not limited to, the following general areas: the location and status of rivers, lakes and reservoirs, where sedimentation appears to be a critical problem; effective erosion control techniques for the varying conditions of soil, slope, rainfall, and land use that exist in the state; fast-growing vegetative covers appropriate to the various soils and other conditions; and economic studies of the costs and benefits of different combinations of control techniques. State and federal funds should be made available for appropriate research projects as necessary.

(2) The State Soil and Water Conservation Committee, working through the local Soil and Water Conservation Districts, and the Agricultural Extension Service should continue and if possible increase their training and general educational activities in the area of erosion control and they should be directed insofar as possible towards builders and public officials involved in erosion control in urbanizing regions.

(3) The bill set forth as Appendix A of this report should be enacted by the General Assembly to implement the findings of this report.

In summary, the recommended legislation establishes the Department of Natural and Economic Resources as the lead agency of state government in developing and implementing a sediment control program. The department

is charged with the responsibility for developing state-wide regulations, for coordinating the erosion control efforts of other agencies, and for assisting local governments in establishing and enforcing sediment control programs.

Appendix A

Proposed Bill to Implement Study Findings and Recommendations
by Establishing State Sediment Control Program

A BILL TO BE ENTITLED AN ACT TO ESTABLISH A PROGRAM FOR THE CONTROL OF POLLUTION FROM SEDIMENTATION.

The General Assembly of North Carolina enacts:

Section 1. This act shall be known as and may be cited as the "Sedimentation Pollution Control Act of 1973."

Sec. 2. Preamble.--The sedimentation of streams, lakes and other waters of this State constitutes a major pollution problem. Sedimentation occurs from the erosion or depositing of soil and other materials into the waters, principally from construction sites and road maintenance. The continued development of this State will result in an intensification of pollution through sedimentation unless timely and appropriate action is taken. Control of erosion and sedimentation is deemed vital to the public interest and necessary to the public health and welfare. It is the purpose of this act to provide for the creation, administration, and enforcement of a program which will permit development of this State to continue with the least detrimental effects from pollution by sedimentation.

Sec. 3. Definitions. As used in this act, unless the context otherwise requires:

(a) "Department" means the North Carolina Department of Natural and Economic Resources.

(b) "District" means any Soil and Water Conservation District created pursuant to Chapter 139, North Carolina General Statutes.

(c) "Erosion" means the wearing away of land surface by the action of wind, water, gravity, or any combination thereof.

(d) "Land disturbing activity" means any use of the land by man in residential, industrial, or commercial development, and highway and road construction and maintenance that may result in a change in the natural cover or topography and that may cause or contribute to sedimentation.

(e) "Local government" means any county, incorporated village, town, or city.

(f) "Person" means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, local government, interstate body, or other legal entity.

(g) "Secretary" means the Secretary of the Department of Natural and Economic Resources.

(h) "Sediment" means solid particulate matter, both mineral and organic, that has been moved from its site of origin and is in suspension in water.

Sec. 4. Powers and Duties of the Secretary.--(a) The Secretary shall, in cooperation with the Secretary of the Department of Transportation and Highway Safety and other appropriate state and federal agencies, develop and administer a comprehensive state erosion and sediment control program. To assist him in the development of such a program the Secretary shall appoint an advisory board of not more than eleven members, consisting of representatives of the affected industries and such public representatives as the Secretary may select.

(b) to implement this program the Secretary shall develop and adopt on or before July 1, 1974, rules and regulations for the control of erosion and sediment resulting from land disturbing activities, which rules and regulations may be revised from time to time as may be necessary. Prior to the adoption or revision by the Secretary of any rules or regulations authorized by this section 4, he shall conduct one or more public hearings with respect to such proposed action in accordance with the following procedures:

1. Notice of any hearing shall be given not less than 20 days before the date of the hearing and shall state the date, time, and place of hearing, the subject of the hearing, and the action that the Secretary proposes to take. The notice shall either include details of the proposed action, or where the proposed action is too lengthy for publication, as hereinafter provided for, the notice shall specify that copies of the detailed proposed action can be obtained upon request from the Secretary in sufficient quantity to satisfy the requests of all interested persons.

2. Any such notice shall be published at least once in a newspaper of general circulation in the eastern, western and central regions of the state.

3. Any person desiring to be heard at any public hearing shall give notice thereof in writing to the Secretary on or before the date set for the hearing. The Secretary is authorized to set reasonable time limits for the oral presentation of views by any one person at any public hearing.

The Secretary shall permit anyone who so desires to file a written argument or other statement with him in relation to any proposed action at any time within 30 days following the conclusion of any public hearing or within any additional time as he may allow by notice given as prescribed in this section.

When the Secretary has completed hearings and considered the submitted evidence and arguments with respect to any proposed action pursuant to this section 4, he shall adopt his final action with respect thereto and shall publish such final action as part of the official regulations of the Department.

(c) The rules and regulations adopted pursuant to subdivision 4(b) for carrying out the erosion and sediment control program shall:

1. be based upon relevant physical and developmental information concerning the watershed and drainage basins of the State, including, but not limited to, data relating to land use, soils, hydrology, geology, grading, ground cover, size of land area being disturbed, proximate water bodies and their characteristics, transportation, and public facilities and services;
2. include such survey of lands and waters as may be deemed appropriate by the Secretary or required by any applicable laws to identify those areas, including multi-jurisdictional and watershed areas, with critical erosion and sedimentation problems; and
3. contain conservation standards for various types of soils and land uses, which standards shall include criteria and alternative techniques and methods for the control of erosion and sediment resulting from land disturbing activities, and shall specify those land disturbing activities that may be controlled by general regulation and those for which an erosion control plan must be submitted and approved.

(d) In implementing the erosion and sediment control program, the Secretary is authorized and directed to:

1. Assist local governments in developing erosion and sediment control programs and as part of such assistance to develop a model erosion control ordinance, and approve, approve as modified, or disapprove such local plans submitted to him pursuant to section 8 of this act;
2. Assist other state agencies in developing erosion and sediment control programs to be administered in their jurisdictions, and to approve, approve as modified, or disapprove such programs submitted pursuant to section 5 of this act and from time to time review such programs for compliance with regulations issued by the Secretary and for adequate enforcement.
3. Prepare and make available for distribution publications and other materials dealing with erosion control techniques appropriate for use by persons engaged in land disturbing activities, general educational materials on erosion and sedimentation control, and instructional materials for persons involved in the enforcement of erosion control regulations, ordinances, and plans.

(e) All rules and regulations of the Secretary promulgated pursuant to this act shall be incorporated either in the Secretary's official regulations or his rules of procedure. All such rules and regulations shall upon adoption be printed and a duly certified copy thereof shall be filed with the Secretary of State and with the several clerks of court of the counties of the State as required by Sections 143-195 through 143-198.1 of the North Carolina General Statutes. Copies shall at all times be kept at the office of the Secretary in sufficient numbers to satisfy all reasonable requests therefor. The Secretary shall codify his regulations and rules promulgated under this act and shall from time to time revise and bring up to date such codifications.

Sec. 5. Authority of the Secretary.--(a) The Secretary shall have exclusive authority over land disturbing activities that are:

1. conducted by the state;
2. conducted by the United States;
3. conducted by persons having the power of eminent domain;
4. conducted by local governments;
5. licensed by the United States; or
6. financed in whole or in part by the state or the United

States.

The Secretary may delegate the authority conferred by this subdivision 5(a), in whole or in part, to any other State agency that has submitted an erosion control program to be administered by it, and such program has been approved by the Secretary as being in conformity with the general state program.

(b) The Secretary shall have concurrent authority with local governments over all other land disturbing activities.

Sec. 6. Enforcement authority of the Secretary.--(a) In implementing the provisions of this act the Secretary is authorized and directed to:

1. Require the submission of erosion control plans by persons engaged in land disturbing activities specified pursuant to section 4(c)3 of this act;
2. Inspect or cause to be inspected the sites of land disturbing activities to determine whether applicable regulations or erosion control plans are being complied with;
3. Make requests of the Attorney General or solicitors for prosecutions of violations of this act.

(b) Any person adversely affected by any action of the Secretary may seek judicial review of such action pursuant to Sections 143-306 through 143-316 of the North Carolina General Statutes.

Sec. 7. Educational Activities. The Secretary in conjunction with the Soil and Water Conservation Districts, the North Carolina Agricultural Extension Service, and other appropriate state and federal agencies shall conduct educational programs in erosion and sedimentation control, such programs to be directed towards state and local governmental officials, persons engaged in land disturbing activities, and interested citizen groups.

Sec. 8. Local erosion control programs.--(a) Any local government may submit to the Secretary for his approval an erosion and sediment control program for its jurisdiction, and to this end local governments are authorized to adopt ordinances, rules and regulations necessary to establish and enforce such control programs, and they are authorized to create or designate agencies or subdivisions of local government to administer and enforce the programs. Two or more units of local government are authorized to establish a joint program and to enter into such agreements as are necessary for the proper administration and enforcement of such program. The resolutions establishing any joint program must be duly recorded in the minutes of the governing body of each unit of local government participating in the program, and a certified copy of each resolution must be filed with the Secretary.

(b) The Secretary shall review each program submitted and within 90 days of receipt thereof shall notify the local government submitting the program that it has been approved, approved with modifications, or disapproved.

The Secretary shall only approve a program upon determining that it complies with the regulations adopted pursuant to section 4 of this act.

(c) Local governments are authorized to levy property taxes, without restriction as to rate or amount, for the purpose of administering and enforcing erosion and sediment control programs.

(d) If the Secretary determines that any local government is failing to administer or enforce an approved erosion and sediment control program, he shall notify the local government in writing and shall specify the deficiencies of administration and enforcement. If the local government has not taken corrective action within 30 days of receipt of notification from the Secretary, the Secretary shall assume enforcement of the program until such time as the local government indicates its willingness and ability to resume administration and enforcement of the program.

Sec. 9. Approval of plans.--(a) Each local government's erosion and sediment control program shall require that for those land disturbing activities requiring prior approval of an erosion control plan, such plan shall be submitted to the appropriate Soil and Water Conservation District at the same time it is submitted to the local government for approval. The Soil and Water Conservation District or Districts, within 10 days after receipt of the proposed plan, or within such additional time as may be prescribed by the local government, shall review the plan and submit its comments and recommendations to the local government. Failure of the Soil and Water Conservation District to submit its comments and recommendations within 10 days or within the prescribed additional time shall not delay final action on the proposed plan by the local government.

(b) Local governments shall review each erosion control plan submitted to them and within 30 days of receipt thereof shall notify the person submitting the plan that it has been approved, approved with modifications, or disapproved. A local government shall only approve a plan upon determining that it complies with all applicable state and local regulations for erosion and sediment control.

(c) The disapproval or modification of any proposed erosion control plan by a local government shall entitle the person submitting the plan to a public hearing if such person submits written demand for a hearing within 15 days after receipt of written notice of the disapproval or modification. The hearings shall be conducted pursuant to procedures adopted by the local government. Judicial review of the final action of the local government on the proposed plan may be had in the superior court of the county in which the local government is situated.

(d) With respect to approved plans for erosion control in connection with land disturbing activities, the approving authority, either the Secretary or a local government, shall provide for periodic inspections of the land disturbing activity to insure compliance with the approved plan, and to determine whether the measures required in the plan are effective in controlling erosion and sediment resulting from the land disturbing activities. Notice of such right of inspection shall be included in the certificate of approval for the plan. If the approving authority determines that the person engaged in the land disturbing activities has failed to comply with the plan, the authority shall immediately serve upon that person by registered mail a notice to comply. The notice shall set forth the measures needed to come into compliance with the plan and shall state the time within which such measures must be

completed. If the person engaged in the land disturbing activities fails to comply within the time specified, he shall be deemed in violation of this act.

Sec. 10. Cooperation with the United States. The Secretary is authorized to cooperate and enter into agreements with any agency of the United States government in connection with plans for erosion control with respect to land disturbing activities on lands that are under the jurisdiction of such agency.

Sec. 11. Financial and other assistance. The Secretary and local governments are authorized to receive from federal, State, and other public and private sources financial, technical, and other assistance for use in accomplishing the purposes of this act.

Sec. 12. Penalties.--(a) Civil Penalties.--

1. Any person who violates any of the provisions of this act or any ordinance, rule, regulation, or order adopted or issued pursuant to this act by the Secretary or by a local government, or who initiates or continues a land disturbing activity for which an erosion control plan is required except in accordance with the terms, conditions, and provisions of an approved plan, shall be subject to a civil penalty of

not more than \$100.00. Each day of a continuing violation shall constitute a separate violation under this subdivision 12 (a) (1).

2. The Secretary, for violations under his jurisdiction, or the governing body of any local government having jurisdiction, shall determine the amount of the civil penalty to be assessed under this subdivision 12 (a) and shall make written demand for payment of the person responsible for the violation, and shall set forth in detail the violation for which the penalty has been invoked. If payment is not received or equitable settlement reached with 60 days after demand for payment is made, the Secretary shall refer the matter to the Attorney General for the institution of a civil action in the name of the State in the superior court of the county in which the violation is alleged to have occurred to recover the amount of the penalty, and local governments shall refer such matters to their respective attorneys for the institution of a civil action in the name of the local government in the appropriate division of the General Court of Justice of the county in which the violation is alleged to have occurred for recovery of the penalty. Any sums recovered shall be used to carry out the purposes and requirements of this act.

(b) Criminal penalties.--Any person who knowingly or willfully violates any provision of this act or any ordinance, rule, regulation, or order duly adopted or issued by the Secretary or a local government, or who knowingly or willfully initiates or continues a land disturbing activity for which an erosion control plan is required, except in accordance with the terms, conditions, and provisions of an approved plan, shall be guilty of a misdemeanor punishable by imprisonment not to exceed 90 days, or by a fine not to exceed \$5,000.00, or by both, in the discretion of the court.

Sec. 13. Injunctive relief.--(a) Violation of State program.--Whenever the Secretary has reasonable cause to believe that any person is violating or is threatening to violate any rule, regulation, or order

adopted or issued pursuant to this act, or any term, condition or provision of an erosion control plan, he may, either before or after the institution of any other action or proceeding authorized by this act, institute a civil action for injunctive relief to restrain the violation or threatened violation. The action shall be brought in the superior court of the county in which the violation or threatened violation is occurring or about to occur, and shall be in the name of the state upon the relation of the Secretary.

(b) Violation of local program.--Whenever the governing body of a local government having jurisdiction has reasonable cause to believe that any person is violating or is threatening to violate any ordinance, rule, regulation, or order adopted or issued by the local government pursuant to this act, or any term, condition or provision of an erosion control plan over which it has jurisdiction, may, either before or after the institution of any other action or proceeding authorized by this act, institute a civil action in the name of the local government for injunctive relief to restrain the violation or threatened violation. The action shall be brought in the superior court of the county in which the violation is occurring or is threatened.

(c) Upon determination by a court that an alleged violation is occurring or is threatened, it shall enter such orders or judgments as are necessary to abate the violation or to prevent the threatened violation. The institution of an action for injunctive relief under subdivisions (a) or (b) of this section 13 shall not relieve any party to such proceeding from any civil or criminal penalty prescribed for violations of this act.

Sec. 14. Citizen suits.--(a) Any person injured by a violation of this act or any ordinance, rule, regulation, or order duly adopted by the Secretary or a local government, or by the initiation or continuation of a land disturbing activity for which an erosion control plan is required other than in accordance with the terms, conditions, and provisions of an approved plan, may bring a civil action against the person alleged to be in violation (including the State and any local government). The action may seek:

1. injunctive relief;
2. an order enforcing the rule, regulation, ordinance, order or erosion control plan violated; or
3. damages caused by the violation; or
4. both damages and injunctive relief; or
5. both damages and an enforcement order.

Any award of damages under this subdivision 14 (a) shall be in an amount that is three times the actual damages as found by the court or jury.

(b) Any person may bring a civil action in his own behalf against the Secretary or a local government where there is alleged a failure to perform any action required by this act for an order directing the appropriate agency to bring an enforcement or other action.

(c) Civil actions under this section 14 shall be brought in the superior court of the county in which the alleged violations occurred.

(d) The court, in issuing any final order in any action brought pursuant to this section 14, may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever it determines that such an award is appropriate. The court may, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in an amount not to exceed \$5,000.00.

(e) Nothing in this section 14 shall restrict any right which any person (or class of persons) may have under any statute or common law to seek injunctive or other relief.

Sec. 15. If any provision of this act or the application thereof to any person or circumstance is declared invalid, such invalidity shall not effect other provisions or applications of the act which can be given effect without the invalid provision or application, and to this end the provisions of this act are declared to be severable.

Sec. 16. This act shall become effective July 1, 1973.

Appendix B

Section-by-Section Analysis
of Proposed Bill
to Implement Study Recommendations

SECTION-BY-SECTION ANALYSIS OF
PROPOSED BILL ESTABLISHING PROGRAM FOR
CONTROL OF SEDIMENTATION POLLUTION

Sections 1 and 2.

Section one states the title of the act and section two is the preamble or statement of purpose. The major points made in the preamble are that pollution from sedimentation is a serious problem in North Carolina and is likely to grow more serious, that control of sedimentation pollution is deemed essential to the public health and welfare, and that the object of the act is the control of sedimentation pollution.

Section 3.

Section three contains the definitions of special terms used in the act. The definition of "land disturbing activity" is of special importance. It is designed to cover only certain uses of land that may cause or contribute to erosion and sedimentation. Those uses are construction activities and road building and maintenance. Thus, agricultural and silvicultural activities are excluded from the coverage of the act. Definitions of "erosion" and "sediment" are included because they are used generally throughout the act and are, after all, what the act is attempting to control; they are not, however, operative words in the sense of having any enforcement authority depend upon them.

Section 4.

Section four is divided into five subdivisions. Subdivision (a) sets forth the broad grant of authority to the Secretary of the Department of

Natural and Economic Resources to develop and administer a comprehensive program for erosion and sediment control. The Department of Natural and Economic Resources was selected for this role because most of the sub-agencies with existing authority and experience in erosion control are within the Department. It is therefore believed that the Secretary is in the best position to take advantage of existing knowledge and experience in erosion control and to coordinate existing and future erosion control activities in a comprehensive program. The Secretary is specifically directed to cooperate with the Secretary of the Department of Transportation and Highway Safety and other appropriate agencies; presumably these would include the Department of Administration and the Federal Environmental Protection Agency.

Subdivision (b) deals with the procedures for adopting regulations to implement the program. At least one hearing is required at which all interested persons may express their views on any proposed action.

Subdivision (c) contains the standards that are to control the substance of any implementing regulations. These standards have been drawn with as much specificity as the circumstances permit and should provide adequate guidance to the Secretary. This subdivision contemplates that erosion from certain land disturbing activities will be controlled through the use of general regulations. Erosion from other land disturbing activities, those that are more severe in their impact on the land, will be controlled by the use of erosion control plans that must be submitted and approved before the land disturbing activity may be initiated. The construction of shopping centers, subdivisions, and industrial plants will most likely fall into this second category.

Subdivision (d) sets forth certain specific duties of the Secretary with regard to assisting local governments in developing local erosion and sediment control programs and other state agencies in developing programs to be administered in their jurisdictions. The Secretary is also charged with the duty of preparing and distributing instructional publications dealing with soil erosion, sedimentation, and control techniques therefor.

Subdivision (e) requires the printing and codification of regulations adopted pursuant to the act.

Section 5.

Section five sets forth the land disturbing activities over which the Secretary has exclusive authority or jurisdiction and those over which he has concurrent authority with local governments. In general, the Secretary has exclusive authority over activities conducted or financed by a government agency. This authority may be delegated to other state agencies that have developed erosion and sediment control programs that have been approved by the Secretary. The Secretary has concurrent authority with local governments over all other land disturbing activities.

Section 6.

Section six gives to the Secretary the same enforcement powers that are given to local governments by sections eight and nine, namely the powers to require the submission and approval of erosion control plans, to make inspections, and to recommend prosecutions.

Section 7.

Section seven directs the Secretary, in conjunction with other appropriate agencies, to conduct educational activities and programs on erosion and sediment control. The responsibility for conducting educational programs is set out in a separate section for emphasis because of the critical importance to the control program of the development of information and control techniques and their effective dissemination to affected parties.

Section 8.

Section 8 deals with local erosion and sediment control programs. Local governments are encouraged to establish their own programs but they are not required to do so. A local government desiring to conduct its own program must obtain approval thereof from the Secretary, and to be approved the program must meet the guidelines laid down by the Secretary. Authority is provided for two or more local governments to establish a joint program, and it is expected that many of the smaller towns will join the county program, and that several counties will join together in regional programs. If after having a program approved, a local government fails to adequately enforce it, the Secretary is directed to take action to assume enforcement for the local government until such time as the local unit is willing and able to resume enforcement.

Section 9.

Section nine provides in detail for the approval of erosion control

plans for those land disturbing activities for which plans are required. For activities within the authority of a local government, plans must be submitted to the local Soil and Water Conservation District for comment at the same time that they are submitted to the local government for approval. The Districts do not have veto authority over the plans, but it is expected that local governments will attach substantial weight to the views of the Districts. Judicial review is provided for any person whose plan is disapproved or approved as modified. Subdivision (e) grants authority to the Secretary and to local governments to inspect projects for which erosion control plans have been approved to determine whether the plan is being complied with and whether it is adequate.

Section 10.

Section ten authorizes the Secretary to cooperate with any federal agency in connection with erosion control plans for land disturbing activities conducted on lands under that agency's jurisdiction.

Section 11.

Section eleven authorizes the Secretary and local governments to receive financial assistance for the implementation of the act. This section is intended to provide the enabling mechanism whereby the Secretary or federal agencies, as funds become available, may make grants of funds to local governments to assist them in the development and enforcement of erosion and sediment control programs.

Section 12.

Section twelve establishes the civil and criminal penalties for violations of the act. Subdivision (a) sets the maximum civil penalty at \$100 per each day of violation. The total penalty may be compromised by the Secretary or local government having jurisdiction. If not paid, it may be sued for in an appropriate court.

Subdivision (b) sets the maximum criminal penalties at imprisonment for 90 days, or a fine of \$5,000, or both, in the discretion of the court.

Section 13.

Section thirteen empowers the Secretary and local governments to seek injunctive relief against persons violating any regulations or ordinances adopted pursuant to the act or engaging in land disturbing activities except in compliance with an approved erosion control plan.

Section 14.

Section fourteen brings a new concept to environmental legislation in North Carolina, although it is contained in legislation of other states and the federal government. This concept is that of conferring standing to sue to enforce the act upon private citizens. Subdivision (a) permits an injured private citizen to sue any person who violates any ordinance or regulation adopted pursuant to the act, or who is not in compliance with a required erosion control plan. A suit under this subdivision may seek either an order enforcing the regulation or plan that is alleged to have been violated or money damages caused by the violations or an injunction

halting the project. If damages are sought and awarded, the award must be in an amount triple the actual damages found. The provision for treble damages is included because in many instances the actual damages from sedimentation pollution are small, and the treble damages award is necessary if the threat of private suit is to be an effective deterrent.

Subdivision (b) confers standing upon any person to bring an action against the Secretary or local governments to enforce any duty imposed by the act.

Subdivision (d) provides that in any citizen suit, the court may award the costs of litigation, including attorney's fees, to either party. This should be of assistance to persons of moderate means and to modestly endowed conservation groups in bringing suits, but it should also act as a deterrence against unfounded or frivolous actions. The court may require a bond of up to \$5,000 in any action in which a temporary restraining order or temporary injunction is requested. This is for the protection of developers and builders.

Subdivision (d) provides that nothing in the citizen suit provisions is to restrict or abrogate any common law or statutory rights that any person may have against persons engaged in land disturbing activities. For example, the traditional tort action in nuisance for damages caused by sedimentation remains available.

Section 15.

Section fifteen contains a standard severability clause.

Section 16.

Section sixteen sets the effective date of the act on July 1, 1973.

Appendix C

Senate Resolution 961 of the 1971 General Assembly,
Which Directed the Legislative Research Commission
to Study the Need for Legislation Concerning Preven-
tion and Abatement of Pollution of the State's Waters
by Sedimentation and Siltation

A RESOLUTION AUTHORIZING THE LEGISLATIVE RESEARCH COMMISSION TO STUDY THE
NEED FOR LEGISLATION CONCERNING CERTAIN ENVIRONMENTAL PROBLEMS.

Be it resolved by the Senate:

Section 1. The Legislative Research Commission is hereby authorized and directed to study the need for legislation concerning the following subjects:

- (1) Regulation of septic tank wastes;
- (2) Prevention and abatement of oil pollution, including measures for prevention or cleanup of oil spills;
- (3) Regulation and management of animal and poultry wastes;
- (4) Prevention and abatement of pollution of the State's waters by nutrient waste, particularly compounds of phosphorus and nitrogen;
- (5) Prevention and abatement of pollution of the State's waters by sedimentation and siltation, particularly that occurring from runoff of surface waters and from erosion;
- (6) Recovery by agencies providing water services of damages from persons polluting the water supply;
- (7) The reporting of industrial wastes and other wastes containing toxic materials to public waste disposal systems.
- (8) Such other environmental protection or natural resource management subjects not specifically assigned by law or resolution to another Legislative Study Commission as the Commission may deem appropriate.

Sec. 2. With respect to the subjects enumerated in Section 1, the Commission shall examine and evaluate previous relevant experience in North Carolina, legislation and proposals in other jurisdictions, and the experience

of other jurisdictions in applying such legislation. In connection with the studies directed by Section 1, the Commission, where desirable and feasible in its judgment, may include non-legislator members on the study subcommittees assigned these studies.

Sec. 3. The Commission shall report its findings and recommendations to the 1973 General Assembly.

Sec. 4. This resolution shall become effective upon its adoption.

Appendix D

List of Witnesses Who Appeared at Hearings Held by
Sediment Control Subcommittee

Witnesses Who Appeared at Hearings
Held by Sediment Control Subcommittee

- Mr. Tom Anderson, Chairman, Land Use and Environmental Design Committee,
North Carolina Home Builders Association
- Professor Carlos G. Bell, University of North Carolina at Charlotte
- Mr. Chester F. Bellard, Deputy State Conservationist, U.S. Soil Conservation
Service
- Mr. Paul W. Brooks, Division of State Planning, Department of Administration
- Dr. Arthur W. Cooper, Assistant Secretary for Resource Management, Department
of Natural and Economic Resources
- Mr. Fred J. Herndon, Chairman, Legislative Committee, North Carolina Home
Builders Association
- Mr. Earl C. Hubbard, Assistant Director, Office of Water and Air Resources,
Department of Natural and Economic Resources
- Mr. Ray Lester, Research Triangle Regional Planning Commission
- Mr. W.E. Mangum, President and General Manager, C. C. Mangum, Inc.
- Dr. Ralph J. McCracken, Assistant Director, Agricultural Experiment Station,
North Carolina State University
- Mr. Craig McKenzie, State Mining Engineer, Office of Earth Resources,
Department of Natural and Economic Resources
- Mr. Charles C. McLaurin, President, North Carolina Home Builders Association
- Dr. Joseph A. Phillips, Department of Soil Science, North Carolina State
University
- Mr. Travis Porter, Counsel, North Carolina Home Builders Association
- Mr. Ben Rouzie, Planning Department, City of Winston-Salem
- Mr. J.A. Saunders, Landscape Engineer, State Highway Commission

Mr. H. A. Smith, Director, State Soil and Water Conservation Committee,
Office of Earth Resources, Department of Natural and Economic Resources
Mr. Pearson Stewart, Research Triangle Regional Planning Commission

In addition to these witnesses, the subcommittee used as a resource material Proceedings, Workshop on Sediment Control, a compilation of statements, comments, and recommendations made at a workshop held February 10, 1972, and published by the Water Resources Research Institute of the University of North Carolina.

