

Conference Participants

from

North Carolina

Mercer M. Doty, North Carolina Center for Public Policy

Neil S. Grigg, Water Resources Research Institute of The University of North Carolina

Milton S. Heath, Jr., Institute of Government, University of North Carolina at Chapel Hill

David H. Howells, Water Resources Research Institute of The University of North Carolina

Maynard M. Hufschmidt, Department of City and Regional Planning, University of North Carolina at Chapel Hill

A. F. McRorie, Division of Environmental Management, North Carolina Department of Natural Resources and Community Development (NRCD)

John Morris, Office of Public Works, NRCD

John D. Wray, Division of Environmental Management, NRCD

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## FOREWORD

This paper is an excerpt from the Summary Report of the Southeast Conference on Legal and Administrative Systems for Water Allocation and Management held at Virginia Polytechnic Institute and State University at Blacksburg, Virginia, on April 19-20, 1978. A full Conference Proceedings has also been prepared for the professional interested in further detail. Copies of the Summary Report will be available in sufficient number for wide distribution. Publication is expected early in 1979. The Proceedings is being published in limited number. Copies can be obtained on loan from the Water Resources Research Institute. They should be available by November 1, 1978.

The objectives of the Conference were:

- (1) To identify present and anticipated water allocation, use, and management problems in the Southeast as related to the present riparian/reasonable use doctrine.
- (2) To analyze the adequacy of existing water law and administrative systems to cope with these problems.
- (3) To establish commonality of problems for sharing experiences, and for identifying promising new legal and administrative approaches and research needs.
- (4) To develop a responsive regional action program.

The purpose of this excerpt is to focus attention on allocation and management problems in North Carolina and recommended remedial steps involving legislation, administrative programs, and research.

## INTRODUCTION

Water law in the Southeast has not generally recognized the totality of the hydrologic system and the relationships between surface and groundwater. Separate bodies of law have been developed for flowing streams, diffused surface waters, and groundwater. This deficiency poses formidable obstacles to conjunctive water resources planning and management.

The two bodies of water rights law covering the use of watercourses are the Riparian and Prior Appropriation Rights Doctrines. They differ markedly in origin and content.

The eastern Riparian Rights Doctrine was adopted, through the cumulative process of court decisions, as part of the common law of England. Originally, the doctrine placed primary emphasis on the right of all owners of land bordered or crossed by a stream to have its waters flow to them in its normal channels, undiminished in quantity or quality. This is referred to as the Riparian Natural Flow Doctrine. Under this doctrine, the riparian owners were entitled to the full flow of the watercourse in which they had riparian rights. An upper riparian owner could not alter the natural flow except to make use of the water for purely domestic purposes.

As water uses increased with national growth, emphasis shifted from natural flow to reasonable use. Under reasonable use, a lower riparian owner is entitled to protection only when diversion by an upper riparian owner unreasonably interferes with his use of water. This permits full use of the available supply, allowing each riparian owner to make beneficial use of the water for any purpose to the extent that his use does not unreasonably interfere with the beneficial use of others. In riparian jurisdictions, the property interest of riparian owners is a right to make use of the water under a system of reciprocal rights. The system may change as long as the change is pursued in a reasonable and just manner, in the public interest, and does not inequitably disturb the reasonable expectations of those with the right to make use of water. Riparian rights is a court-made doctrine, expressed almost exclusively in judicial decisions and administered by the courts. The doctrine emphasizes the resolution of disputes after they have arisen, not before.

The Riparian Doctrine was an inadequate basis for water allocation in the arid West, and the Prior Appropriation Doctrine was developed to meet the competing needs of early mining and agricultural interests. Under this doctrine, riparian ownership is not a prerequisite to the right of water withdrawal. Any user can appropriate in perpetuity the right to use as much water as he can successfully divert and beneficially employ. The right is on a first-come and first-served basis and may extend to the complete appropriation of the available supply. Prior appropriation is codified to a significant degree in legislation and is interpreted and applied largely by administrative agencies. The dominant feature of the Prior Appropriation Doctrine is that riparian or other owners can appropriate in perpetuity the right to use as much water

as they can successfully divert and beneficially employ as long as they do so prior to other users. This right may be lost only through abandonment and forfeiture.

Diffused surface water is the runoff from precipitation before it reaches the channel of a discrete watercourse. As surface drainage, it moves across land surfaces from points of origin to the first elements of watercourses at lower elevations. Because of its association with property damage, diffused surface water has become the source of much litigation. Case law on damages has generally followed either the "civil law" rule or the "common enemy rule." The civil law rule gives an easement to higher land for natural drainage of surface waters over lowlands, while the common enemy rule regards diffused surface waters as a foe to be repelled by any landowner without liability in the absence of negligence. Of lesser application, is "reasonable use" of land as the key factor involved. Emphasis in diffused surface water law has been primarily on damages. In contrast, the right to use such water is one of the least litigated issues in water law. The historic interest has been on damages from excess water, and only recently have potential users begun to consider this as a supplemental source of supply. What case law there is indicates that in most jurisdictions, a landowner is the absolute owner of all diffused surface water on his premises. Riparian rights do not attach to these waters, and a lower landowner has no right to have them flow to his land from higher elevations.

The tendency of water law to treat the various elements of the hydrologic system in distinctly different ways is demonstrated in groundwater law. Here, a legal distinction has been made between waters of definite underground streams and percolating waters. The former have been viewed as having the characteristics of a watercourse on the surface, with percolating waters making up all groundwaters not conforming to the stream classification. It is consistent, therefore, that underground streams are generally governed by the prevailing doctrines for surface waters - Riparian or Prior Appropriation. Percolating waters generally belong to the owners of overlying lands in riparian states. Some courts, however, have imposed qualifications such as the water be used without malice, negligence, or unnecessary waste. In some states, the courts have limited use to the quantity of water necessary for some useful purpose of the overlying land. Waste of the water or export for distant use are not considered to be reasonable if this deprives overlying landowners of the opportunity of making reasonable use of the common supply on their lands.

Water law in the East was historically conditioned by a comparatively plentiful natural supply of surface and groundwaters. Shortages and conflicts over available supplies are a relatively recent phenomenon which accompanied the accelerated economic development and population growth following World War II. What appeared to be a generous supply in a largely agrarian economy began to show distinct signs of inadequacy in the face of post World War II development. Water law and administrative systems for the allocation of available surface and groundwaters have demonstrated many limitations under recent circumstances. Restrictions on the use of surface water to riparian lands and of groundwater to overlying land are no longer tenable. The uncertainty associated with determining the reasonableness of use is alleged to stifle economic development. This has been further complicated by the need to resort to litigation to determine the extent of the rights of reasonable use.

As a result of these criticisms, the Legislative Research Center at the University of Michigan Law School drafted a Model Water Use Act which was approved by the National Conference of Commissioners on Uniform State Laws in 1958. This Model Act contemplates the creation of a state water resources agency and the issuance of permits for withdrawals over a definite period of time. It exempted domestic uses and preserved other existing uses. The suggested legislation was adopted by Hawaii and contributed to a general rethinking of water use laws in the East. At that time, a number of southeastern states considered switching from riparianism to prior appropriation. Only Mississippi took this step, and it limited the Appropriation Doctrine to surface waters. In making the transition, Mississippi recognized existing rights and required permits for subsequent withdrawals. All water must be put to the designated beneficial use. Twenty years' experience has demonstrated the efficacy of the Prior Appropriation Doctrine in that State. Groundwater allocation has more recently been recognized as a growing problem and has been handled on an area-wide basis as with the "capacity use" or "management use" areas in North Carolina, South Carolina, and Virginia.

Other states in the Southeast modified their legal and administration systems to varying degrees according to their individual needs. Other than Mississippi, the most far-reaching steps were taken by Florida, which adopted legislation in 1972 which provided for the administrative regulation of surface and groundwater withdrawals within existing common law doctrines. Florida law and administration are innovative and unique in a number of respects. They recognize the integrity of the hydrologic system and provide the means for considering the interrelationships of all elements of the hydrologic cycle. There is a strong emphasis on long-range planning and comprehensive water management. The program is administered by a single agency through tax supported, regional water management districts. Permitted water uses must be both reasonable and beneficial. This multiple standard is an attempt to combine the best features of reasonable use under eastern riparian law and the beneficial use rule of western prior appropriation law.

While the remaining six states of the Southeast still basically adhere to common law doctrines, they vary widely in their response to water management problems through modifications in their administrative systems. Georgia has moved farthest in its regulation of water use with a single State agency administration of a system of permits for withdrawals, diversions, or impoundments from surface and groundwaters. This provides a basis for management along hydrologically sound lines. The exclusion of agricultural water users threatens to leave this sector with unprotected water rights in an era of increasing competition for water.

North Carolina, South Carolina, and Virginia have moved part way toward the regulation of withdrawals in specially designated geographical areas where they find that the aggregate use of waters has developed or threatened to develop to a degree which requires coordination and management to protect and allocate available supplies. While the North Carolina legislation applies to both ground and surface water withdrawals in excess of 100,000 gallons per day, it has been applied to only one area. Only a limited number of permits have been issued, and these pertain primarily to groundwater. The need for designation of another area is presently under study. No real water management measures have been implemented within the single designated area. A statement in the law that it does not replace the Riparian Rights Doctrine leaves some unresolved ambiguities. There are also other limitations that can only be handled through litigation or statutory revisions.

#### NORTH CAROLINA WATER LAW

North Carolina occupies a mid-position between the states of the Southeast in water law. The Riparian Rights Doctrine still persists in the form of a mixture of reasonable use and natural flow, with emphasis on the former.

The law on diffused surface water provides that the owner may dispose of surface drainage as he pleases, subject to liability for damage due to improper disposal and injury to others. Water rights for groundwater are determined by ownership of the overlying land and reasonable use of the land. Reasonableness in cases of both surface and groundwater use is determined on a case-by-case basis by the courts.

Most water resources legislation has been enacted in response to particular crises or federal initiatives. There is no comprehensive, internally consistent code of State water legislation.

#### Capacity Use Legislation

The major piece of legislation modifying the Riparian Rights Doctrine is the Water Use Act of 1967. This authorizes the Environmental Management Commission to declare "capacity use areas" where it finds that the aggregate uses of ground and surface water have developed or threaten to develop to a degree which requires coordination and management to protect and allocate the water supplies involved. The Act covers both ground and surface waters. It has been applied to a single area--the phosphate mining region of eastern North Carolina where pumping threatened the integrity of the region's principal water source.

The Water Use Act established a three-step process: the declaration of a capacity use area, development of regulations addressed to the needs of the area, and the imposition of a permit system to carry out the objectives of the legislation. Permits are required for all withdrawals in excess of 100,000 gallons per day. There is a savings clause which states that the law does not replace the Riparian Rights Doctrine. This leaves some unresolved ambiguities. The law is a general-purpose water management tool and also offers limited means to protect groundwater recharge areas, facilitate conjunctive management of ground and surface waters, and cope with saline water intrusion.

Several major inadequacies in the permit system became apparent in 1976 when a second major phosphate mining company applied for a competing permit. The State felt that total withdrawals, including the new request, would be deleterious to the aquifer. An attempt to reduce the withdrawal of the first mining company to accommodate the second resulted in litigation. In an out-of-court settlement, the State agreed to continue the first permit at its original level, with a reduction in the amount for the pending permit. The law may not adequately address the questions of due process or just compensation in a case where a user must reduce or discontinue withdrawals. This is considered to be a severe limitation. Another difficulty is that the law is written in terms of permitting uses that exist at the time of capacity use area declaration, and no guidance is provided for resolving conflicts that arise from future users. There are no standards in the law for priority among competing users or guidelines to follow in times of drought. These are serious limitations that can only be resolved through litigation or statutory revisions. An amendment in 1973 authorized the prohibition of new or increased water withdrawals or wastewater discharges in areas found to be facing a generalized condition of water depletion or pollution to provide temporary control pending establishment of capacity use areas.

There have been only two potential applications of the law to surface waters. One, associated with nuclear power development on the Yadkin River, was rejected by the Environmental Management Commission. This experience revealed technical weaknesses in the law that need more attention if it is to become a useful vehicle for water management. The other application relates to competing water supply interests in the sandhills area, and is still under study.

North Carolina's attempt to cope with its emerging water allocation problems through the capacity use area approach is fraught with problems. Misunderstandings as to what the law allows and inadequate clarification of the law in the regulations are important factors. Each capacity use situation is unique, and *ad hoc* treatment has been characterized by confusion and delay. The lack of standards and guidelines has caused concern that designation of a capacity use area subjects the allocation of water to severe interest group pressures and potential for litigation in case of conflicts. The law is not clear as to what types of water uses are applicable. The language is considered to be too broad to be a useful guide. Lastly, the law states that nothing contained therein shall change or modify existing common or statutory law with respect to the relative rights of riparian owners concerning the use of surface waters. Some believe that this will void the impact of the Act if it is applied to surface water and that it must be deleted.

The Water Use Act lacks controls to regulate streamflows, lake levels, and minimum releases from impoundments. While the Dam Safety Act requires maintenance of minimum streamflows for water quality control, it applies only to privately built dams and has many exceptions. Provisions for streamflow maintenance are included in the State's small watershed-enabling law applicable to P.L. 566 projects. Laws providing for lake level management, streamflow regulation, and watercourse modification are needed for an effective program of water resources management.

A related State statute provides authority for the Environmental Management Commission to allocate water supply storage in federal multi-purpose reservoirs. While this provision has not yet been exercised, the time for decisions is rapidly approaching. Three pending Corps of Engineers projects are urgently needed for public water supplies, and the State will be faced with the allocation of critically needed supplies between communities. The State's authority to reallocate water supplies from federal projects in response to future needs adds to the necessity of equitable procedures for this purpose.

#### Instream Uses

Instream uses are also not subject to any single law. They are protected to only a modest degree by the natural flow features of the Riparian Doctrine, fish and game laws and programs, federal and State natural and scenic river laws, the endangered species law, and legislation requiring a minimum release from impoundments. Further legislation to protect instream uses would be desirable.

#### Water Quality

Water quality legislation in recent years has been heavily influenced by federal water pollution control and drinking water acts. The State has acted to adjust its legislation to meet federal requirements and is accepting increasing delegations of responsibility for administration of important segments of the federal program on an orderly basis. There is no pressing need for changes in State water quality legislation with the exception of the handling of hazardous chemicals which has recently emerged as a serious problem.

#### Emergency Allocation

In the area of emergency use, the State has an old emergency water allocation statute that gives priority to public water supply and public health needs in times of water shortage. It has very limited applicability, and new legislation is needed in this area.

#### Non-Riparian Diversion and Interbasin Transfer

The diversion of water from one river basin to another is a lively topic in North Carolina at the present time. There are a large number of interbasin transfers underway. Yet, the law does not effectively address this issue. There seems to be an anti-diversion factor embedded in the Riparian Doctrine. The old cases generally held that one may not materially divert water in such a way as to cause unreasonable injury to a riparian owner. There is no discernible distinction between interbasin transfers and non-riparian diversions.

There are some modern cases involving public water supplies that raise some questions of the applicability of the materiality factor to public water supply situations. They suggest that a diversion for public water supply purposes is illegal--whether a material diversion or not. It is believed that a lawsuit would be required to set the issue of whether a diversion for public water supply purposes is automatically illegal with or without material injury. This has some practical significance today as engineers are beginning to design more sophisticated water supply arrangements involving limited diversions during high water use periods which may not amount to a material diversion in the common law sense.

A significant factor relative to diversion under common law is that damages are probably the only remedy available to a riparian owner against a diversion for public water supply. There have been no cases in which an injunction has been granted against a public water supply. This suggests that unless substantial damages are involved, the practical impact of the anti-diversion rule in North Carolina is limited to damages.

Four or five statutes have some bearing on the diversion subject. A Water and Sewer Authorities Law authorizes water to be diverted from one watershed to another on approval of the Environmental Management Commission after the Commission has considered a series of complicated factors designed to assure that it will balance the interests of taking and receiving areas. Although the statute was passed about 20 years ago, issues under it regarding diversions are only now being raised in a series of proceedings before the Commission. The statute speaks literally only of trans-watershed diversions, but there is reason to believe that it might be construed to include interbasin diversions as well. There is need for a more-or-less consistent policy dealing with the possible application of existing statutes where diversion questions might be raised.

Efforts were made twice in the early 1970's to enact legislation that would broaden the authority of the Environmental Management Commission to review, approve, or disapprove diversions for public water supplies presented by any city or county. All bills were opposed vigorously and died in committee.

In years past, the principal opponents of diversion were electric power companies with their large stakes in the maintenance of streamflows for hydroelectric power generation. As hydropower becomes a decreasing fraction of energy production, it would appear that this interest will become less significant. Paralleling this, however, has been the emergence of a coalition of interests made up of environmentalists, pro-local development groups, sportsmen, and others who also oppose diversion. Local governments responsible for public water supply systems--especially those located on upstream tributaries--will of necessity have to support some diversions. There will be a need for the law to balance the competing interests involved in questions of water diversion. More focused and more specific legal solutions will be called for in response to the continuing need for water resources development.

#### Flood Management

A Floodway Regulation Law was enacted in 1971 for delineation of floodways and regulation of floodway obstructions through the granting of permits for use of the floodway. It is an enabling act for administration by local government. The Environmental Management Commission may delineate floodways where they exceed the jurisdiction of a single community or when local government fails to act. The Commission may also adopt rules and regulations. It has taken neither of these actions up to the present time. Despite the law, there is no State floodplain management program. This situation inhibits local government from obtaining guidance on flood problems and floodway regulation, and there has been a lack of implementation at the local level. The need for a strong State flood management program became increasingly apparent as a result of extensive flood damage in 1977. North Carolina is actively considering the updating and revision of its floodplain management legislation.

#### Erosion and Sedimentation Control

Statewide concern over erosion and sedimentation led to enactment of the Sedimentation Control Act of 1973. This established a State program for the control of soil erosion and resulting stream sedimentation from land-disturbing activities. Agriculture and silviculture were excluded. Mining is handled in separate legislation. The law provides for a system of State standards, a model ordinance, and guidelines. Programs are administered at the local level except where no ordinances have been adopted, in which cases the State Sedimentation Control Commission assumes responsibility. An erosion and sedimentation control plan must be filed with local government or the State before land-disturbing activity may take place.

#### Reservoir Sites

North Carolina has no legislation dealing directly with the reservation of reservoir sites. There are two statutory mechanisms that might facilitate advanced reservoir site identification and protection. The

stream reclassification process under the Stream Classification Law gives a public water supply entity an opportunity to put upstream and downstream water users on notice of a city's intention to develop a public water supply. There is a State-level conservancy corporation that exists on paper--though not yet a reality. It is designed to provide a mechanism for advanced land acquisitions for natural area preservation and other purposes. When activated, the law may be broad enough to provide for reservoir site reservation.

#### Public Access

As to public access to beaches and waterways, it is fair to say that that law is in an embryonic stage. At least three significant things have been done. On the coast, a few exceptional beach towns have made a real effort to assure public access along their beaches. But they are exceptions. The Coastal Area Management Act gives authority to the Coastal Resources Commission to declare public access areas as "critical areas" with regard to areas of environmental concern and to impose conditions relating to public access. The Commission has not even seriously considered such action, but the potential is there. In the aggregate, however, North Carolina has about as large an area dedicated to national seashores, forests and parks, and State parks, where public access is assured, as any other state in the Southeast.

#### Wetland and Shoreland Protection

The strongest existing programs for wetland and shoreland protection are the Coastal Area Management Act and the earlier Dredge and Fill Act. The first of these covers 20 coastal counties. It has three phases: planning, identification of areas of environmental concern, and permits for development within such areas. The permit system went into effect in 1978 after four years of preparation. The elements of the program include the protection of coastal wetlands and ocean and estuarine shoreline, and the maintenance of a proper relationship between land, water, and other resource uses. Outside the coastal area, the main regulatory tool is probably the revised dredge and fill permit program under P.L. 92-500, combined with environmental impact statements. One other potential planning tool is the Land Classification System supervised by the State Land Policy Council. The protective features of the Coastal Area Management Act have not been extended to the rest of the State, though legislation has been under consideration by the General Assembly toward this end.

#### Interstate Water Management

Interstate problems of most current interest include proposed interbasin diversions from the Roanoke River system to serve the Norfolk metropolitan area and groundwater pumpage at Franklin, Virginia, just across the North Carolina border. An informal interstate committee was established to identify the issues and consider alternative ways of resolving current and emerging conflicts. Alternative approaches to resolving interstate problems would be through compact, interstate committees, federal legislation, and litigation before the Supreme Court. There has been negligible progress in developing interstate cooperation for water resources management in the Southeast region. The effectiveness of the interstate committee involving North Carolina and Virginia needs to be closely monitored to determine whether alternative steps should be taken.

### NORTH CAROLINA WATER ADMINISTRATION

Most water management functions are carried out in the Department of Natural Resources and Community Development (NRCD). The Department of Human Resources is concerned with the health aspects of water resources generally and with domestic water supply, septic tank, and solid waste regulation specifically. The Department of Administration shares responsibility in the formulation of overall land and water policy. The Department of Transportation has jurisdiction over many culverts and bridges and is thereby very concerned with flood control.

The Assistant Secretary for Natural Resources of NRCD has line responsibility for general supervision of water-related divisions with the Department. The largest of these is the Division of Environmental Management, which administers water quality management, comprehensive water resources planning, and water management. The Division of Land Resources has purview over sedimentation, P.L. 566 watershed planning, and dam safety. The Division of Marine Fisheries has management responsibilities for coastal and estuarine waters.

The Wildlife Resources Commission administers wildlife and freshwater fisheries programs. The Office of Coastal Management, under policy guidance of the Coastal Resources Commission, administers the Coastal Area Management Act. Certain policy and program functions related to federal and State water development projects and flood management are assigned to an Office of Public Works reporting to the Deputy Secretary. Water management policy is largely set by a series of commissions composed of citizens appointed by the

Governor. Foremost among these are the Environmental Management Commission, Coastal Resources Commission, Sedimentation Control Commission, Soil and Water Conservation Commission, Marine Fisheries Commission, and the Wildlife Resources Commission. The latter body is largely independent, with direct control over staff as well as policy. All of these commissions operate within the framework of the N.C. Department of Natural Resources and Community Development. Water resources planning is conducted through a branch of the Division of Environmental Management. A central activity of this office is development of a State Framework Plan for Water Management. This consists of a rather detailed water resources policy statement and the beginning stages of river-basin multi-objective planning. The policy section of the Plan can be used to introduce new water resources policies and resolve court decisions and executive actions. The multi-objective planning is patterned after the federal Principles and Standards. The three plans emphasize economic efficiency, environmental quality, and mixed objectives. At this stage of development, the river basin plans are more a means for sorting project proposals by objective than the product of detailed analysis. But even this is viewed as a major accomplishment in the face of the limited personnel, funds, and data available for the task. The planning process will become progressively more analytical in the future if the necessary resources can be made available.

The first Framework Plan has been presented to many public groups throughout the State and to the commissions and policy board of NRCDC. Their endorsement is expected to lead to its adoption as the major policy statement of State Government. It is viewed as a dynamic planning process with periodic updating and revision to provide decision makers maximum guidance for both short- and long-term water management.

A primary purpose of the State Framework Plan is to place the State in a position of dealing with federal water resources agencies on an equal basis. When fully developed, the Plan would identify State objectives and priorities of federal and State projects. The State would no longer merely react to federal initiatives, but would serve as a source of guidance for those initiatives. The federal agencies are increasingly sympathetic to this concept of the State role.

In the past, State cost-sharing policy was to pay 80% of the non-federal costs of water resource development. This is now under review by the Legislative Study Committee on Financing Water Projects. A variable formula is being sought wherein identifiable beneficiaries will bear a larger share of the burden.

Regulations for water allocation permits in the State's single capacity use area were adopted by the Environmental Management Commission in 1969. The area involved all or part of eight counties, covering a total land area of 2,500 square miles. The water source involved was a major artesian limestone aquifer which was being drawn down to permit open-pit mining of phosphate ore. Permits specified withdrawal limits and rates, maximum drawdown levels, monitoring, and so on. Twenty groundwater permits were issued and administered by the Groundwater Section of the Division of Environmental Management. Two permits also applied to surface water withdrawals. A report by that Section states that, despite the permitting, no real water management measures have been implemented to conserve and manage the resource. The only requirement imposed has been monitoring and reporting. There has been no actual limitation of water use and only token enforcement against non-reporting users. The reasons include a limited data base, insufficient staff with well-defined responsibilities for aggressive implementation, questions of water law, lack of recognition of the need for water management, and an unwillingness to confront the tough decisions involved.

A significant problem surfaced by litigation over permits issued to phosphate mining companies was the absence of known NRCDC policy, delineations of functional responsibility, or known administrative procedures. When a competing permit application was received, there was confusion over how it should be evaluated and who was responsible for doing it. The case emphasized NRCDC's need for the correction of these deficiencies. There is also need for adequate funds and staff to investigate water requirements of users and the effects of water use on water sources. The State has had to place too much reliance on company data and has not been in a position to prove that water use is unreasonable or to enforce water restrictions.

Water quality management in North Carolina, as in other states, has been closely patterned after the federal program laid down in P.L. 92-500 (as amended), administered by the U.S. Environmental Protection Agency. It includes facility, river basin, and areawide waste treatment planning. The river basin plans include stream classification, water quality criteria and conditions, pollution sources, and waste load allocations. Emphasis on areawide planning has been on non-point sources of pollution and best management practices. The regulatory programs include the federal-state NPDES permits for waste discharges and the control of septic tanks and other wastes not directly discharged to surface waters. Supplemental State grants are provided for the construction of publicly owned waste management systems. These amount to 12½ percent of cost in addition to the 75 percent provided by EPA.

The water quality program is administered by the Division of Environmental Management under the Secretary of NRC and the Environmental Management Commission. Jurisdiction over public water supplies and solid waste disposal is held by the Secretary of the Department of Human Resources. The departments share responsibility for septic tanks. Permits for units over 3,000 gallons per day are issued by the Division of Environmental Management. Smaller units are issued permits by county health departments under regulations approved by the Department of Human Resources. The division of responsibility between the two departments has led to a number of difficulties with water quality regulations. The unresolved problems surrounding the use of septic tanks in the coastal region is particularly important because of their impact on ground and surface water quality in that rapidly developing area.

The sheer magnitude of the federal water pollution control program has sharply unbalanced the State's overall water resources program in the direction of water quality. Flood management is a good example of this imbalance. Immediately after enactment of the Floodway Regulation Law in 1971, a modest State effort to advise and guide local government and coordinate federal programs was commenced. This was abandoned, and there has been no State program in recent years except for the processing of paper work for federal flood insurance. Severe flood damage in 1977 brought a resurgence of interest. The Appalachian Regional Commission recently made some funds available for assistance to local government in its area of jurisdiction. Responsibility for developing an operational State floodplain management program was given to the Public Works Office under the Deputy Secretary of NRC in late 1977. Administrative funds have been requested, but program development and implementation are in abeyance until the needed resources are made available.

The sedimentation control program is administered by a small staff in NRC's Division of Land Resources. Program effectiveness has been limited by inadequate funding and personnel. Slowness of some local governments to accept responsibility for program administration has left a heavy burden on the State staff. The program is currently under review by the "208" study effort. Nonetheless, vigorous leadership from the Sedimentation Control Commission and staff has resulted in notable accomplishments, and the program is firmly underway.

#### CONCLUSIONS

1. There are important gaps in current law with respect to water allocation, interbasin transfer, non-point source pollution control, control of hazardous chemicals, flood management, and State cost-sharing policy. Existing legislation has not been codified into an internally consistent body of law.
2. Administration of existing water management legislation is strongest in the area of water pollution control, which is strongly promoted by the federal government. There is a resulting imbalance in the overall water resources program.
3. The State's attempt to deal with water allocation problems through the capacity use designation approach is fraught with problems. The *ad hoc* approach has been characterized by confusion and delay.
4. The permit system under the State "Capacity Use Law" has several major inadequacies. It does not address the questions of due process or just compensation when users must reduce or discontinue withdrawals. The law is written to cope with current and emerging problems and provides little guidance for the prevention or resolution of future water use conflicts. Lastly, the law states that nothing therein shall change riparian rights. This may present difficulties when applied to surface waters. No standards are provided for determining priorities among competing users or guidelines to follow in time of emergency or drought.
5. Although the State's first "capacity use area" was established more than seven years ago, no real water management measures have been implemented. This is attributed to differing interpretations of the law, inadequate clarification in regulations, a limited data base, insufficient staff with well-defined responsibilities, lack of recognition of the need for water management, and an unwillingness to confront the tough decisions involved.
6. State legislation lacks controls to regulate streamflows, lake levels, minimum releases from impoundments, and to protect instream uses.
7. The diversion of water from one river basin to another is not effectively addressed by present law. The practice is increasing, and ambiguities must be resolved if related investments are to be protected and water resources development is to follow a predictable and orderly course.
8. Interstate water management problems are of rapidly increasing importance. Institutional means for the equitable settlement of conflicting interests are to be preferred to litigation and need further exploration and development.

9. The Floodway Regulation Act is not being administered because of lack of funds. Until recently, there was no clear-cut assignment of administrative responsibility. The Act is no longer consistent with federal flood management legislation. There is some question as to its intent and scope of authority. Urban and industrial growth are continuing at a rapid rate. Unless there is a strong flood damage reduction strategy, there is an increasing probability of rising loss of life and property in the future.

10. Administration of the North Carolina Sedimentation Control Act is proceeding vigorously, but there are severe limitations in staff resources and weak incentives to attain strong local administration.

11. There is a lack of emphasis in law and policy on conservation of surface and ground waters as a complementary management measure.

12. Accelerated urban growth is threatening the availability of future reservoir sites. Innovative means to preserve options for necessary storage at reasonable cost are needed.

13. The State Framework Study represents a good beginning toward a coherent and consistent State water policy and management plan. It is only an initial step, however, and much more work must be done to meet the needs of decision makers.

#### RECOMMENDATIONS

1. Restudy of existing legislation and programs for water allocation to correct demonstrated deficiencies and identify alternatives to better meet State needs. This should include the feasibility of a statewide permit system for major water withdrawals.

2. New legislation to provide controls over streamflows, lake levels, minimum releases from reservoirs, and to protect instream uses.

3. New legislation to clarify water rights associated with interbasin transfers and provide a suitable basis for this aspect of water resources management.

4. Sustain current efforts toward the resolution of interstate water problems and explore alternative institutional arrangements.

5. Amend the Floodway Regulation Act to make it consistent with more recent federal legislation.

6. Establish a State Flood Management Program with emphasis on assistance to local government and intergovernmental coordination.

7. New legislation to provide necessary controls over non-point source pollution and hazardous chemicals.

8. Provide additional resources for administration of the State Sedimentation Control Act and broaden the program to include stormwater management.

9. Continue and strengthen present efforts by State government to encourage water conservation as a water management tool.

10. Investigate alternative means for the preservation of reservoir sites needed for public water supplies.

11. Recognize the importance of comprehensive water resources planning to economic development and environmental quality and the need for suitable resources for this purpose. Full development of the State Framework Plan as a source of guidance for water resources decision making.

12. Clarification of State policy on cost sharing for water resources projects to provide for the equitable allocation of non-federal costs between the State and local governments or interests.

13. Initiate efforts to codify State water resources law into an internally consistent body of law.