

**WATER RESOURCES RESEARCH INSTITUTE****OF THE UNIVERSITY OF NORTH CAROLINA**

NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

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WATER RESOURCES RESEARCH - DEADLINE

Prospective applicants under the Institute's FY 1972-73 Matching Grants Program are reminded of the September 15 deadline for proposals to be submitted to the Institute.

Notices were distributed on April 30 to faculty members of all the state's senior colleges and universities with known interests in water resources research.

NEW MEMBERS APPOINTED TO INSTITUTE ADVISORY COMMITTEE

President Friday recently appointed the following North Carolinians to the Water Resources Research Institute Advisory Committee.

Mr. Thomas A. Alspaugh, Cone Mills Corporation  
 Mr. Turner W. Battle, Executive Director, N. C. Wildlife Federation  
 Mr. Wade Brown, Director, Durham Department of Water Resources  
 Mr. Jesse L. Hicks, State Conservationist, SCS-USDA  
 Mrs. S. Hodge O'Neal, Chairman, N. C. Environmental Study,  
 League of Women Voters  
 Dr. Michael v. E. Rulison, Research Triangle Institute  
 Mr. Raymond S. Talton, Vice President, Carolina Power & Light Co.  
 Mr. Henry M. von Oesen, Henry von Oesen and Associates

NEW INSTITUTE REPORTS

Report No. 51: Household Decision Process in the Purchase  
 and Use of Reservoir Recreation Land  
 by Raymond J. Burby, III  
 Center for Urban and Regional Studies  
 University of North Carolina at Chapel Hill

The effectiveness of public policy in guiding the residential development of reservoir shorelands is largely dependent on a basic understanding of underlying development processes. The conversion of rural reservoir land to recreational residential use emerges over time from a set of complex decisions by reservoir owners, public officials, landowners, residential developers, and

households. This report deals with the final stage of the land development process, the decisions of households to purchase and use shoreline land. Based on a random sample survey of 268 households who have acquired shoreline property adjacent to Lake Norman, North Carolina, and Lake Sidney Lanier, Georgia, it describes the key components of these decisions and identifies factors which influence household behavior. While the research focuses on decisions related to the acquisition of specific shoreline sites, attention is also devoted to the extent and manner in which shoreline property is utilized by households, their satisfaction with various types of property and preferences for future shoreline sites, and household perceptions of community problems in reservoir areas. The results of this study provide a research base for efforts to forecast reservoir shoreline development patterns and supply land use planners and policy makers with needed information on this important stage in the reservoir residential development process.

#### CHAPEL HILL RESEARCH TEAM RECEIVES COMMENDATION

Professor Shirley F. Weiss, Dr. Raymond J. Burby, III, and Dr. Thomas G. Donnelly, of the Center for Urban and Regional Studies, University of North Carolina at Chapel Hill, were commended by OWRR Director, Dr. H. Garland Hershey, in a letter on August 9, 1971, for their work on a recent study jointly sponsored by the Institute and the Office of Water Resources Research, U. S. Department of the Interior. He said:

"We in OWRR are very pleased with the outstanding research accomplishments by you and your co-investigators, Dr. Raymond J. Burby, III and Dr. Thomas G. Donnelly, pursuant to investigations under matching grant B-012-NC, 'Multipurpose Reservoirs and Urban Development.'

"Five excellent reports have resulted which have commanded wide attention throughout the United States and which have contributed materially to improve water management concepts where conflicts arise between uses of reservoirs and shoreline development.

"Your work has been productive and timely. I congratulate you, Dr. Burby and Dr. Donnelly for a job well done."

#### AMENDMENTS TO WATER RESOURCES RESEARCH ACT

The House Committee on Interior and Insular Affairs has favorably reported out a clean bill (H. R. 10203) to amend the Water Resources Research Act to provide for the following:

- (1) Increase of annual allotment to Water Resources Research Institutes from \$100,000 to \$250,000.
- (2) Authorize scientific and technical information dissemination activities.

- (3) Require annual allotment programs to be developed in close consultation with leading state water resource officials to promote research, training, and other work meeting the needs of the state.

The measure will come up for passage before the House of Representatives shortly after Congress returns from summer recess on September 8, 1971.

#### KEEPING NORTH CAROLINA LIVEABLE

A narrated slide set designed to give a balanced picture of the major causes and effects of pollution in North Carolina has been produced by the Agricultural Extension Service of North Carolina State University. Sponsored by the North Carolina County Agricultural Agents Association, the presentation includes practical examples of how Tar Heel citizens are working to reduce pollution and clean up their environment. Photography is by Ralph Mills, narration by Reese Edwards, and script by Fred Mangum and Tom Byrd. The slide set was produced with the assistance of the Water Resources Research Institute of The University of North Carolina, the North Carolina Wildlife Resources Commission, the North Carolina Department of Water and Air Resources, the National Air Pollution Control Administration, the North Carolina Board of Health, the Farmers Home Administration, and the North Carolina Agricultural Experiment Station. Running time is 22 minutes, 25 seconds. Copies are available on loan for 50¢ from Mrs. Isabelle N. Wilder, Visual Aids, Agricultural Information, 3 Ricks Hall, N. C. State University, Raleigh, N. C. 27607, (Tel. 755-2861). Purchase price is \$30/copy.

#### UNIVERSITIES COUNCIL ON WATER RESOURCES

The annual meeting of the Universities Council on Water Resources was held on the campus of Oregon State University August 2-4. The theme was the role and relevance of university water resources research and interrelationships with research in other phases of the environment.

Speakers included Economist Emery Castle, OSU; John Carlson, Deputy Director, Office Management and Budget; Dan Dreyfus, Senate Committee on Interior and Insular Affairs; Lt. General F. J. Clarke, Chief, Army Corps of Engineers, and other noted figures. Discussion groups produced some 26 resolutions initiating a wide variety of actions on behalf of UCOWR which ranged all the way from national policy to university research and education. All but 2 were adopted by the delegates at the business meeting on August 4.

Representatives from the Consolidated University of North Carolina (UCOWR member institution) included Dr. B. J. Copeland and Institute Director Howells. Copeland recently assumed chairmanship of the UCOWR Research and Education Committee on Ecology. Howells completed his second term as chairman of the UCOWR Executive Board. Dr. David Allee of Cornell University was elected chairman for 1971-72.

#### FEDERAL PROGRAM GETS ADVISORY COUNCIL

The Environmental Protection Agency has appointed a Standing Advisory Committee for Water Programs to provide for more state and interstate participation in the federal water pollution control program. Members are limited to the executive officers of the Association of State and Interstate Water Pollution Control Administrators, Conference of State Sanitary Engineers, and the Interstate Conference on Water Problems.

#### SENATE SUBCOMMITTEE APPROVES WATER POLLUTION CONTROL LEGISLATION

The Senate Subcommittee on Air and Water Pollution has approved new water pollution control legislation which is expected to receive full Public Works Committee action by mid-September. The principal points are:

Construction Grants - \$20 billion authorizations over a 5-year period

Water Quality Standards - W. Q. standards under 1965 Water Quality Act of 1965 to be implemented by Jan. 1, 1976. A national water quality standard to be achieved by 1980.

Industrial User Charges - Federal share of municipal sewage treatment works cost attributable to industrial users to be returned to Federal Treasury

Non-Point Sources of Pollution - Incentives to states for programs to control pollution from diffuse sources.

Regional Waste Management - Metropolitan area waste management plans to be developed by designated planning agencies

New Pollution Sources - Uniform national minimum performance standards for industrial waste control

Toxic and Pretreatment Standards - Toxic waste standards, prohibition, and pretreatment requirements

Hazardous Substances - Includes designated hazardous substances in oil pollution liability section of Act

Ocean Dumping - Federal permits to regulate discharges

1899 Refuse Act - Transfer of permit program from Corps of Engineers to EPA

Enforcement - Mandatory enforcement of standards, civil and criminal penalties up to \$50,000, citizen suits, and mandatory monitoring and record keeping.

### TOXIC METALS IN WATER

A capacity attendance at the August 17 Workshop on Toxic Metals in Water concluded that present surveillance programs and coordination of monitoring and data assessment activities among state and federal agencies are unsatisfactory and that prompt corrective action is needed.

Further information on the Workshop will be provided in the September News. A Proceedings is being prepared and copies will be available within 4-6 weeks.

### HEARING ON COLLIE SWAMP

The Wilmington District, Corps of Engineers, is beginning a study of the Collie Swamp Basin, Martin County, to determine flood and related water problems and to consider a plan for flood control.

A public hearing will be held at 7:30 P.M., EDT, on August 31, 1971, in the Court Room of the County Court House, Williamston, N. C. Oral statements will be heard, but these should be submitted in duplicate to assure accuracy of record.

### RUCKELSHAUS SAYS INDUSTRIES MUST FILE PERMIT APPLICATIONS OR FACE LEGAL ACTION

Environmental Protection Agency Administrator William D. Ruckelshaus has told his ten regional offices to begin working with the Corps of Engineers in notifying industries which have not filed applications for Refuse Act discharge permits that they face the possibility of legal action for failure to comply with the program. All industries that discharge material into navigable waters or their tributaries were required to apply to the Army Corps of Engineers for a permit by July 1.

In a letter to Regional Administrators, Ruckelshaus said: "The District Corps Offices have already been instructed by their headquarters to contact companies that have not filed applications. You should work with the District Engineers Offices to see that such companies apply for a permit within a specified time, not to exceed thirty (30) days, or provide in writing legitimate reasons for failure to comply with the requirements of the program. Companies which do not respond affirmatively to these instructions will be referred by this Agency to the Justice Department for appropriate action under the Refuse Act."

### ENVIRONMENTAL IMPACT STATEMENTS

The Council on Environmental Quality Monitor for July 1971 lists the following new environmental impact statements for North Carolina projects.

Corps of Engineers

Tranters Creek, Tar River Basin Flood Control Project:

Martin, Beaufort, and Pitt Counties clearing, snagging, and channel excavation. Includes wildlife areas for seasonal detention of water fowl.

Department of Transportation

Goldsboro-Wayne Municipal Airport

(Department of Transportation)

Apron expansion, taxiway construction and installation of VASI.

Highway Construction

- (1) Truck weight station-Lowell
- (2) Reconstruction and relocation-interchange at US-25-70 Marshall Bypass to Mars Hill
- (3) 4-lane freeway-Marshall to Weaverville
- (4) Relocation of US 64 from intersection with NC 231 to Nashville Bypass
- (5) Freeway-Fayetteville to Fort Bragg
- (6) Candor-Biscoe-Starr Bypass-Montgomery County
- (7) Widening Sugar Creek Road from I-85 interchange to Derita
- (8) Relocation of Kings Mtn. Bypass 1 mile west of Bethware School to I-85 interchange east of Kings Mtn.
- (9) Replacement of Secondary Road 1211 from US-129 in Robbinsville to NC-28 intersection

Federal Power Commission

Reopened proceeding on the Blue Ridge Project

(Appalachian Power Company)

Tennessee Valley Authority

Mills River Dam and Reservoir-Henderson County

Construction of dam as 1st unit of multipurpose water control system for the Upper French Broad River Basin. Will inundate 660 acres of pasture and woodland.

PROPOSED LEGISLATION ESTABLISHING NATIONAL LAND USE POLICY AND PLANNING

Hearings to consider views of representatives of Federal, state, and local governments on national land use policy and planning legislation have been scheduled September 13 and 14, it has been announced by Representative Wayne N. Aspinall (D-Colo.), Chairman of the Committee on Interior and Insular Affairs, House of Representatives.

The hearings will be held by the Subcommittee on the Environment, also chaired by Aspinall, on H.R. 2173 (and related bills which are cited as the "Land and Water Resources Planning Act"), and H.R. 4332 (and related bills which have been identified as the "National Land Use Policy Act of 1971").

Statements will be received during the scheduled hearings only from sponsors of the legislation and representatives of Federal, state, and local governments, the Chairman said, although additional hearings may be scheduled later to hear from members of the public.

Those desiring to present testimony should advise the Subcommittee immediately in writing. Committee rules require each witness to submit his prepared statement to the Committee at least 24 hours in advance of his appearance and limit oral presentation to a brief summary of his position. Eighty copies of the prepared statement should be furnished.

All communications should be directed to:

Honorable Wayne N. Aspinall  
Chairman, Committee on Interior  
and Insular Affairs  
House of Representatives  
Washington, D. C. 20515

#### FLOOD DAMAGE

A recent report, "Flood Damage Abatement Study for Virginia," by W. R. Walker, Director, Water Resources Research Center at VPI, will be of interest to North Carolinians concerned with the control of flood damage.

To the degree that state and local governments sanction unfettered flood plain development, Walker says, they share responsibility for excessive flood damages. Flood plain occupation in which benefits do not exceed the estimated total costs (direct, indirect, and social) is undesirable, because it causes an eventual net loss to society. Any public policy encouraging submarginal development adds to these losses.

Walker recommends a two-step state program including enactment of appropriate encroachment legislation and a state flood hazard area management act. A copy of Walker's report is available on loan from the Institute Office.

A degree of flood plain regulation is now authorized in North Carolina through 1971 legislation providing for floodway regulation. While this anticipates that all of the State's streams will be designated as floodways, no deadline for local action is given, nor is such action mandatory. This Act will be reviewed in the September issue of the WRRRI News.

Persons interested in flood damage prevention are reminded of the 1969 Quail Roost Workshop on Flood Plain Management. Copies of the Proceedings (WRRRI Report No. 28) are still available from the Institute.



STATUS OF STREAMS IN NORTH CAROLINA

Streamflow for July was normal in the Blue Ridge, Western Piedmont, and Coastal Plain Provinces, but considerably below normal in the Eastern Piedmont.

Groundwater levels declined seasonally and were near or above average levels for July. The exception is the well at Chapel Hill which continues much below average levels. Wells in heavily pumped areas (Hertford and Craven Counties) continued their steady decline.

— U. S. Geological Survey

WATER RESOURCES LEGISLATION OF THE 1971 GENERAL ASSEMBLY OF NORTH CAROLINA

by

Warren J. Wicker  
Assistant Director  
Institute of Government

A. Introduction

Concern for the environment and, especially, for water resources was most evident in the 1971 General Assembly of North Carolina and resulted in a flood of legislative proposals. This article reviews briefly the central proposals that were adopted and notes even more briefly a few of the major proposals that failed of passage.

A large quantity of legislation in some manner related to water resources is not covered. For example, local legislation is generally ignored. In a like fashion, much legislation relating to agriculture, wildlife, and fisheries is also not covered. Legislation relating to regulation of public utilities and governmental organization and structure is also largely omitted. While much of the legislation in these categories may affect to some degree water resources programs and agencies dealing with water resources, the relationship is not central and as a result the legislation is not reviewed here.

The legislation is reviewed under the following headings:

- B. Regional Water Supplies
- C. Regional Sewage Disposal Systems
- D. State Aid
- E. Local Organization and Service
- F. State Policy and Organization
- G. Beach and Coastal Protection
- H. Sediment and Soil Erosion
- I. Small Watersheds
- J. Other Legislation
- K. Some Bills That Failed to Pass

Citations to bills and acts are given in brief form, with the bill number (H for House and S for Senate) given first, followed by the Session Laws chapter number in the case of bills enacted.



## B. Regional Water Supplies

The Regional Water Supply Planning Act of 1971 (S168 - Ch. 892) gave expression to the widespread concern over the need to promote regional water supply planning. The 1969 General Assembly had directed the Legislative Research Commission to consider the need for legislation "concerning local and regional water supplies." As noted in the preamble of the Regional Water Supply Planning Act of 1971, the LRC found that water supply development in North Carolina was dominated by small systems serving only a few customers. Almost 1,800 systems were in use on July 1, 1970, and more than 80% of these served fewer than 1,000 people. Because of this condition and the shifts in population, the Commission found that county-wide or regional systems were probably needed in half of the State's counties at the present time and concluded that regional planning and development of water supplies would be essential if future needs of the State's citizens were to be met. The Commission further concluded that the State should "provide financial assistance to local governments and regional authorities in order to assist with the cost of developing comprehensive regional plans, and county-wide plans compatible with a regional system."

✓ The Regional Water Supply Planning Act of 1971 defines the State's role as follows:

It should be the role of State Government to provide a framework for comprehensive planning of regional water supply systems, and for the orderly coordination of local actions relating to water supply, so as to make possible the most efficient use of water resources and to help realize economies of scale in water supply systems. G. S. 162A-23.

In carrying out this role the State government is directed to:

- (1) identify major sources of raw water supply for regional systems
- (2) identify areas suitable for the development of regional systems
- (3) establish priorities for regionalization
- (4) develop plans for regional systems
- (5) review and approve plans of proposed regional systems
- (6) administer state programs of financial assistance to local governments for the planning and development of regional water systems
- (7) provide technical assistance to local and regional planning agencies.

The State's role is to be a shared function of "the Department of Water and Air Resources and the State Board of Health, with primary responsibilities with regard to sources of raw water supply and transbasin or trans-watershed diversions of water being allocated to the Department of Water and Air Resources, and with primary responsibility with regard to other aspects of regional water supply systems being allocated to the State Board of Health."

The Act establishes a Regional Water Supply Planning Revolving Fund in the Department of Administration. The Department is authorized to make "advances from the Fund to any county, municipality, sanitary district, or to counties and municipalities acting collectively or jointly as a regional water authority, for the purpose of meeting the cost of advanced planning and engineering work necessary or desirable for the development of a comprehensive plan for a regional water supply system ..." The Act establishes criteria for making loans and imposes on the State Board of Health,

with recommendations from the Department of Water and Air Resources responsibility for finding whether or not the criteria have been met and for making recommendations with respect to applications for loans from the Fund. The Act also contains procedures regulating repayment of loans by local units. A sum of \$100,000 was appropriated to the Department to be used for the 1971-1973 biennium in the Regional Water Supply Planning Revolving Fund. (H273 - Ch. 1024) Equally important were the appropriations to the State Board of Health and the Department of Water and Air Resources to support activities of these two departments in the promotion of regional water systems. For the biennium, the State Board of Health received \$82,000 and the Department of Water and Air Resources received \$51,000. (H274 - Ch. 1001)

### C. Regional Sewerage Disposal Systems

The Regional Sewage Disposal Planning Act of 1971 is to be codified as Article 3 of Chapter 162A of the General Statutes of North Carolina and has provisions parallel to those of the water act discussed above. The Act defines a regional sewage disposal system as "a public sewage disposal system of a municipality, county, sanitary district, or other political subdivision of the State, or combination thereof, which provides, is intended to provide, or is capable of providing adequate collection, treatment, purification and disposal of sewage to a substantial portion of the population within a county, or a region composed of all or parts of two or more counties, or to a metropolitan area in two or more counties." Responsibility for promoting and providing a framework for comprehensive planning of regional sewage disposal systems is vested in the Board of Water and Air Resources. In carrying out its responsibilities the Board is directed to perform the seven specific functions outlined above for water.

The Act also creates (G. S. 162A-29) a Regional Sewage Disposal Planning Revolving Fund in the Department of Administration which is authorized to make advances from the Fund to local units for "the purpose of meeting the cost of advance planning and engineering work necessary or desirable for the development of a comprehensive plan for a regional sewage disposal system. . ." As in the case of advances for water planning, those for sewage disposal planning must also be repaid. The Act describes criteria for making the loans and imposes on the Department of Water and Air Resources the responsibility for certifying to the Department of Administration that the criteria have been met. As in the case of loans for water, the criteria are concerned primarily with the suitability of the area for regional development and the feasibility of the project.

The Act requires that such loans be repaid in full "within one year of the start of construction on the projected system, or within six months after the issuance of bonds for the financing of construction of the system, or within six years from the date of the making of the advance, whichever comes first." This requirement is identical with that imposed in the case of advances for regional water systems.

To carry out the purposes of the act, the General Assembly appropriated \$40,000 per year to the Department of Water and Air Resources. (H1070 - Ch. 1044) To support advances to local units, the Regional Sewage Disposal Planning Revolving Fund received \$200,000 for the 1971-73 biennium. (H1071 - Ch. 1045)

### D. State Aid

Legislation that for the first time authorizes general State aid in the construction of water and sewer facilities is contained in the North Carolina Clean Water Bond Act of 1971 approved by the 1971 General Assembly. (S758 - Ch. 909) This Act authorized the issuance by the State of \$150,000,000 in bonds to provide funds for the State aid. Before the bonds may be issued

they must be approved by a vote of the people of the state at an election to be held on the date fixed by the Governor, but not later than May 6, 1972. Proceeds of the bonds, if approved, are to be dispensed through the Clean Water Fund, administered by the Department of Administration.

Half of the proceeds - \$75,000,000 - is allocated by the Act "to a Pollution Control Account, from which shall be made grants to units of government for the construction, improvement or expansion of wastewater treatment works and wastewater collection systems and, where authorized, for the acquisition of real property or interest in real property necessary for the construction, expansion or improvement of such works or systems."

Of the \$75,000,000 in the Pollution Control Account, \$50,000,000 is reserved for use exclusively by the State in providing the State's share of funds required if a wastewater works project is to qualify for a federal grant. Since the percent of the cost of a project eligible for federal funds increases if the State makes a contribution, providing for funds to meet the State's contribution was a major basis of interest in the Act by local units.

The remaining \$25,000,000 allocated to the Pollution Control Account is required by the Act to be allocated among the various counties of the State in proportion to their 1970 populations. These allocations are to the geographical area of the county and the actual distribution of funds may go to the county government or to any other local governmental unit within each county under the terms and conditions described below.

Of the bond proceeds, the Act requires that \$70,000,000 be set aside for the Water Supply Systems Account. Of this amount for water, \$50,000,000 is required to be allocated among the various counties in proportion to their 1970 populations, and to be available for distribution to the units within each county for water supply system purposes. The remaining \$20,000,000 of funds for water are to be used for "the purpose of providing grant funds for water supply systems projects generally and not upon a county allotment basis." The remaining \$5,000,000 is allocated to a Contingency Account and is reserved for meeting the administrative expenses of the Department of Administration, the State Board of Health and the Board of Water and Air Resources incurred in the administration of the Act and, when there are "compelling reasons", to honor applications that cannot be honored under the basic allocation system described above.

Thus, half of the proceeds - \$25,000,000 for sewer and \$50,000,000 for water - will be distributed throughout the State in proportion to the population of the various counties. The remaining half will be used for administrative expenses and for distribution as determined under the eligibility standards provided in Section 8 of the Act.

To be eligible for a grant the applicant must (1) be a unit of government, (2) have the financial capacity to provide its share of the project funds, (3) have complied with all applicable rules, laws and regulations, federal, state, and local, and (4) have adopted a schedule of fees and charges that "will be adequate to provide for proper future operation, maintenance and administration and for reasonable expansion of the project."

Applicants for grants for any project must prepare environmental impact statements. A hearing on the application and the proposed project must be held after notice to the general public and specifically to agencies and other units of government that might be concerned.

The Act establishes standards for priorities. It places on the Department of Water and Air Resources in the case of sewer grants and on the State Board of Health in the case of water grants the responsibility for receiving grant applications and applying standards. Disbursement by the Department of Administration may be made only following approval by the Board of Water and Air Resources or the State Board of Health as appropriate. The basic guiding principle in the use of the proceeds of the bonds, as stated in the statement of purpose, is to secure "the greatest benefit to the greatest number." Consistent with this the Act directs the Board of Water and Air Resources or the State Board of Health to "give primary consideration to the public necessity of the project in promoting the public health, safety and welfare." Consideration is also to be given to the eligibility of the proposed project for federal grants, the compatibility of the proposed projects with the State's general program of water supply and water pollution control, the fiscal responsibility of the applicant, and the need of the applicant for assistance.

Priorities are to be established quarterly on a state-wide basis for the funds that are allocated state-wide. For those that are allocated to each county on a population basis, priorities will be established annually.

Both the Board of Water and Air Resources and the State Board of Health are directed to adopt rules and regulations necessary to the administration of the Act, consistent with its provisions.

The maximum grant that may be made from funds provided by the Act is 25% of the total construction cost of any project unless it is determined by the State Board of Health or the Board of Water and Air Resources, as appropriate, that some higher percentage is necessary (a) to qualify for a federal loan or grant, (b) to meet an extreme public necessity, or (c) to provide funds for the purchase or acquisition of necessary real property in cases where federal grant or loan funds may not be used for such a purpose. In any of these special conditions, however, the total grant to the applicant may not exceed 30% of the total cost of any project.

At the time of the preparation of this report there was no indication as to when the Governor would call for the election. And there is, of course, no assurance of approval by the voters. At a minimum, however, there will be available \$750,000 for the purposes of the Act. This sum was appropriated by the General Assembly to meet debt service for the fiscal year beginning July 1, 1972, to pay accrued interest on bonds or bond anticipation notes issued pursuant to the Clean Water Bond Act of 1971 if the voters approve the bonds. If the bonds are approved and all of the \$750,000 is not needed to pay accrued interest, the remainder is to be made available to the Department of Water and Air Resources for "construction grants to units of State or local government for wastewater treatment works." If the bonds are not approved, the entire \$750,000 will be available for the same purpose. (H1430 - Ch. 1077)

NOTE: This is the first of four installments of a summary of water resources legislation of the 1971 General Assembly prepared by Professor Wicker. Remaining installments will be carried in subsequent issues of the News.

WATER RESOURCES LEGISLATION IN THE CONGRESS

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Bills Passed:

Senate - Agreed to the House amendments to S. 991, authorizing continuance of research and development in the process of saline water conversion.

Bills Introduced:

- H.R. 9727 To regulate the dumping of material in the oceans, coastal,  
H.R. 9818 and other waters and for other purposes.  
H.R. 9835  
H.R. 10052  
H.R. 10115
- H.R. 9803 To amend sec. 8 of the Federal Water Pollution Control Act,  
H.R. 9929 relating to grants for the construction of treatment works,  
H.R. 10048 in order to increase the Federal share of construction costs  
and to amend sec. 10 of the Act relating to water quality  
standards, and for other purposes.
- H.R. 9991 To promote the safety and protect the environmental quality  
of ports, waterfront areas, and the navigable waters of the  
U. S.
- H.R. 10051 To amend the Federal Water Pollution Control Act to increase  
the penalty for pollution of the water by oil.
- H.R. 10288 To amend the Water Resources Research Act of 1964, to in-  
crease the authorization for water resources research in-  
stitutes, and for other purposes.
- H.R. 10203 As above (clean bill from committee)

NEW PUBLICATIONS RECEIVED BY THE INSTITUTE

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(These may be borrowed from the Institute for a two-week period. Where individual copies are desired, readers are encouraged to request copies from the organization issuing the publication. The addresses are provided by the News for this purpose.)

Water Resources Planning

- "The Economics of Water Supply and Quality," by Harvard Water Program, EPA, USGPO, Wash., D. C. 20402, Price - \$.50, Feb. 1971.
- "Economic Development of Areas Contiguous to Multipurpose Reservoirs: The Kentucky-Tennessee Experience," by M. B. Hargrove, WRI, Univ. of Ky., Lexington, Ky., 1971. (Report No. 21)
- "Institutional Factors Influencing Water Development in Texas," by Dr. W. L. Trock, WRI, Texas A&M Univ., College Station, Texas 77943, Mar. 1971.
- "Institutional Patterns in Evolving Regional Programs for Water Resource Management," by I. Howards, et al, WRRC, Univ. of Mass., Amherst, Mass. 01002, 1971.
- "Measuring the Intangible Values of Natural Streams, Part I, Application of the Uniqueness Concept," by J. A. Dearing, et al, WRI, Univ. of Ky., Lexington, Ky., 1971. (Report No. 40)
- "Toward The North Carolina Water Plan," (An Administrative Estimate of the Situation), by DWAR, P. O. Box 27048, Raleigh, N. C. 27611, July 1971.
- "Length and Rate of Individual Participation in Various Activities on Recreation Sites and Areas," by G. L. Tyre, et al, USDA For. Ser. Res. Note SE-161, SEFES, Asheville, N. C., May 1971.



- "Estimating Recreation Use on Large Bodies of Water," by G. A. James, et al, USDA For. Ser. Res. Paper SE-79, SEFES, Asheville, N. C., April 1971.
- "Estimating Recreational Use of a Unique Trout Stream in the Coastal Plains of South Carolina," by G. A. James, et al, USDA For. Ser. Res. Note SE-159, SEFES, Asheville, N. C., May 1971.
- "Water Resource System Optimization by Geometric Programming," by W. L. Meier, Jr., et al, WRI Tech. Rpt. No. 34, Texas A&M Univ., Feb. 1971.
- "Report on Water Management Studies on Public Lands of Western United States," by USDI, GS, Wash., D. C. 20240, 1970.
- "The Stanford Watershed Model: The Correlation of Parameter Values Selected by A Computerized Procedure with Measurable Physical Characteristics of The Watershed," by G. A. Ross, Univ., of Ky., WRI, Lexington, Ky. 40507, 1970.
- "A Methodology Study to Develop Evaluation Criteria for Wild and Scenic Rivers, (Report of History Subproject) by J. J. Peebles, WRI, Univ. of Idaho, Moscow, Idaho, March, 1971.
- "A Methodology Study to Develop Evaluation Criteria for Wild and Scenic Rivers," (Report of Sport and Commercial Fisheries Subproject), by J. Mallet, et al, WRI, Univ. of Idaho, Moscow, Idaho, Nov. 1970.

#### Water Quality Management

- "Evaluation of a New Acid Mine Drainage Treatment Process," by Black, Sivalls & Bryson, Inc., EPA, USGPO, Wash., D. C. 20402, Price - \$1.50, Feb. 1971.
- "The Influence of Suspended Microscopic Substances on the Metabolic Activities of Microorganisms Responsible for Biological Enrichment of Water," by R. M. Pfister, WRC, Ohio State Univ., Columbus, Ohio 43210, 1971.
- "Construction of a Chemical-Microbial Pilot Plant for Production of Single-Cell Protein from Cellulosic Wastes," by C. D. Callihan, et al, EPA, Supt. of Doc., USGPO, Wash., D. C. 20402, Price - \$1.25, 1971.
- "Design of Non-Mechanical Chlorinator for Small Water Supplies," by R. P. Lalor, Sch. of Engr., Duke Univ., Durham, N. C. 27701, May 1971.
- "Light-Catalyzed Chlorine Oxidation for Treatment of Wastewater," by Midwest Res. Inst., EPA, USGPO, Wash., D. C. 20402, Price - \$1.00, Sept. 1970.
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