

SD 18

**REPORT OF THE
GOVERNOR'S SPECIAL COMMITTEE
ON WATER RESOURCES
VIRGINIA ADVISORY LEGISLATIVE COUNCIL
to
THE GOVERNOR

THE GENERAL ASSEMBLY OF VIRGINIA**



SD 18, 1966

COMMONWEALTH OF VIRGINIA
Department of Purchases and Supply
RICHMOND
1965

LETTER OF TRANSMITTAL

December 21, 1965.

The Honorable Albertis S. Harrison, Jr.
Governor of Virginia
Richmond, Virginia

Dear Governor Harrison :

I am pleased to hand you the Report of your Special Committee on Water Resources. I take the liberty of offering, for your convenience, the following summary of findings and recommendations :

Findings

1. Existing State legislation and governmental organization is *inadequate* to permit the State to act effectively and efficiently on rapidly growing problems of water resources, including both water quantity and quality. This means that the State *cannot* :
 - a. Develop its own water resource plans and programs.
 - b. Attend to its own interests in relation to Federal Government water resource plans and programs.
 - c. Provide reliable, comprehensive leadership and coordination for the benefit of its subdivisions and private interests, particularly in the much needed area of comprehensive river basin planning.

These deficiencies, unless corrected, are bound to produce at least two serious results.

- a. The State will have increasingly serious water problems which will have increasingly crippling effects on the Commonwealth.
 - b. The agencies of the Federal Government will tend to take over the responsibility not assumed by the State.
2. There is a need for action now. There is no need for further study on the obvious and essential first step. Studies in our own State and experience in other states show plainly that the State must begin by assembling its scattered water resource planning functions into a single unit, properly staffed and financed.

Questions of financing and operating major river basin developments cannot be discussed intelligently or productively until the State has :

- a. Created the appropriate governmental unit to develop fundamental policy and plans and to lead and coordinate.
 - b. Undertaken its own analysis of water supplies and demands.

Recommendations

1. The Department of Conservation and Economic Development should be given the clear legislative directive and responsibility to :
 - a. Formulate continually an overall State water resources policy.

- b. Make plans to encourage water and related land projects and uses for the optimum use of the State's water resources, including comprehensive river basin plans.
 - c. Provide expert advice on water resources to the other agencies and political subdivisions of the State and others.
 - d. Resolve any conflicts as to water resource policies among the various State agencies.
 - e. Represent the State in its relations with other States and the Federal Government in matters directly related to the conservation or use of the State's water resources.
 - f. Make annual reports to the Governor and General Assembly on the status of the State's water resources, together with recommendations for any legislation that it may deem necessary or desirable.
2. To accomplish these objectives the following steps should be taken:
- a. The enlargement of the Board from nine to twelve members. The three new positions would be occupied by persons particularly competent in areas of water resource planning.
 - b. The substantial strengthening and enlargement of the staff of the Division of Water Resources. (The Report includes a memorandum on staff and costs.)
 - c. Abolition of the existing Committee on Water Resources within the Department.

Appendix G of the Report is a bill to accomplish these recommendations. Appendix H is a memorandum on staff and costs. This will require an additional appropriation of approximately \$500,000 a year to the Division of Water Resources. Costs of individual river basin studies must be added to this base cost.

Throughout our study we have advised the heads of State water-related agencies of our work and have sought their advice. We also had the benefit of the advice of the Committee on Water Resources under the chairmanship of Mr. Martin Johnson.

We trust this Report will be useful.

Sincerely yours,

FitzGerald Bemiss, Chairman

Matthew G. Anderson

George M. Cochran

John H. Daniel

Walther B. Fidler

COMMONWEALTH OF VIRGINIA

REPORT OF

THE GOVERNOR'S SPECIAL COMMITTEE
ON WATER RESOURCES

1. The Assigned Task

Governor Harrison in his letter of September 23, 1965, appointing this Special Committee (Appendix A) entrusted it with the task of reviewing existing State legislation and organization related to conservation and use of the State's water resources to determine if they are adequate to permit the State to act effectively and efficiently in dealing with the rapidly growing problems in this field. The Governor further instructed that

"If additional legislation is desirable or necessary to enable the State to adequately cope with these problems that legislation should be prepared. Quite possibly, an additional State agency or other political entity may be required to study our water resources and problems, prepare plans and administer programs for optimum use of the water and related land resources in the several river basins of the State."

The Governor cited the increasing problems related to water use that are the direct outgrowth of the healthy and welcomed continuing growth of the State's population and of its expanding economic and commercial development. He pointed out that in the face of massive Federal action in

"It is essential that the State government retain a role of leadership in the development and use of the river basins within the State."

2. Earlier Experience and Available Data

In carrying out its mission, the Committee has had available to it the results of substantial efforts that have previously been made by others within Virginia and in other States in considering the problem of streamlining governmental procedure to permit optimum utilization of water resources.

A. *Virginia*—Virginia Advisory Counsel committees studied this subject in 1953, 1955 and 1957. Those studies recognized that the days in which adequate water was available throughout the Commonwealth were rapidly coming to a close and that a substantial overhaul of the State's governmental machinery was needed in order to cope with the growing problems in this field. As a result of those studies, the Committee on Water Resources under the chairmanship of W. Martin Johnson was appointed to recommend to the 1960 Session of the General Assembly legislation that would accomplish this purpose. On December 17, 1959, that Committee's recommendations (Appendix B) were presented to the Governor with the following observation:

"In its deliberations on water resources during the period 1953-1958, the Virginia Advisory Legislative Counsel recognized the advantages of initiating action toward the creation of a separate Department of Water Resources and the appointment of a Water Resources Commission. Rather than make the change in one step,

it recommended and the General Assembly enacted legislation under the provisions of which your Committee on Water Resources was appointed.

"During the ten meetings which we have held since our appointment the best organization for carrying out water resources policies and responsibilities of the Commonwealth have been discussed several times. At our invitation representatives from both Federal and State Agencies interested in water resources have informed us concerning their powers and responsibilities . . .

"Having considered the matter, the members of your Committee are convinced that a separate Department of Water Resources should be organized as soon as practical—preferably in 1960. Attached are proposed amendments to the Code to accomplish that end . . . It is very probable that, with the passage of time, additional powers and responsibilities will be assigned to the Water Resources Commission. This will be necessary due both to policy changes required to meet anticipated needs and to benefits incident to consolidating water resources matters under one agency. What is suggested in our proposal is a most logical first step in anticipation of the future needs for closer State supervision and protection of our water rights and responsibilities. It should not be postponed. The growing importance of this great natural resource and the universality of its use by all segments of our economy dictate the need for prevision." (italics added.)

No action however was taken during the 1960 Session of the General Assembly or in its subsequent sessions to enact the legislation proposed by that committee.

In August, 1963, the Committee on Water Resources again reported:

"The Committee's studies and activities have led it to the conclusion that the water resources program of the Commonwealth is ineffective and uncoordinated. This situation results primarily from the complicated organization which exists for the administration of water resources function . . . This is not a new discovery—it was recognized by the Water Resources Committee of the Advisory Counsel on the Virginia Economy in 1952, and, subsequently by various VALC water resource studies. . . . The passage of time has increased the seriousness of the deficiency and the Committee is of the opinion that proper coordination of water resource activities within the Commonwealth should no longer be deferred." (See Appendix C, italics added.)

Earlier this past year, attention of the Commonwealth was focused on the particular problems of the James River Basin by hearings held by the Corps of Engineers of the United States Army and by hearings before Committees of the United States Senate and House of Representatives. In those hearings, representatives of various state agencies presently dealing with different facets of water resource problems, spokesmen for cities, counties, industries and interested citizen groups appeared and testified at great length on the critical water needs of central Virginia.

Hearings have also been held in Northern Virginia and in Washington on the water problems confronting the Potomac-Shenandoah River Basin.

Numerous hearings in connection with the proposed Salem Church project and studies currently in progress by the Rappahannock Development Association have focused on the present and future water needs of that river basin.

These reports and studies are merely illustrative of recent studies. There are many more prepared by various state agencies and various groups in all of the regions of the State.

The reports, studies and data thus available present a clear picture of the rapidly developing crisis in Virginia's water resources that requires immediate action if it is to be avoided. The flow of the great rivers of this State, such as the James, the Rappahannock, the Potomac, etc., has been continually declining during the critical dry periods of summer and early fall. Already the critical line between salt and fresh water in our mighty tidal rivers is pushing further and further upstream with serious consequences to oystermen, municipalities and industries alike. The water supplies of cities and towns throughout the State are diminishing as demand for water grows at an ever accelerating pace. The lack of an assured adequate industrial water supply in many parts of our State limits further industrial or commercial expansion.

Our problems are not confined to low flow problems alone. Inadequate control of developments in many flood plains and deforestation have increased the damage caused by winter floods. Finally, the advantages of using the State's water resources as a principal focal point for the rapidly growing demand for outdoor recreational facilities for our own citizens and the ever growing tourist industry are manifest.

A recurring theme in these studies is the absence of a single state agency where the combined experience of the various state agencies dealing with particular phases of water conservation and use can be brought together and a single point of view formulated on what is in the best interest of the Commonwealth. The multiple state agencies dealing with various aspects of water resources are listed in Appendix D. It illustrates the potential for inter-agency conflict. The need for a coordinating and overall policy making agency is succinctly stated in the Report of the Virginia Outdoor Recreation Study Commission, published on November 1, 1965. (See Appendix E.)

B. Other States—The problem of obtaining optimum use of limited water resources in the face of an exploding demand is not unique to Virginia. In certain of the western states where water has historically been in short supply and in states to the northeast of us presently staggering under the accumulating problems of urbanization, the problems of protecting and preserving water resources are already presenting major challenges to state and local government. The Counsel of State Government, of which Virginia has long been a member, ten years ago initiated a major study of the role of state government in the optimum use and development of water resources. The report of that study, which fortunately has been kept up to date to reflect latest developments, was of great assistance to the Committee.

3. The Initial Conclusion

After reviewing previous studies and reports and other information available in this area and consulting with representatives of various agencies of the State government, the Committee initially concluded that it is imperative for the best interest of the Commonwealth that a single state agency be given uniform direction and control over all state activities directly related to the utilization and conservation of the State's water resources.

The Committee notes that although various State agencies entrusted with various facets of water resource problems are doing an excellent job in the individual areas to which they are limited, they are handicapped in

two principal ways. The first is in the difficulty, and sometimes the inability, of the agency to obtain qualified expert advice on technical questions. In many instances Virginia agencies have had no other choice but to rely on advice given by the Corps of Engineers. While that advice is competent and welcomed, in the areas where policy decisions inevitably effect the conclusion it is important that State officials receive competent advice oriented to point of view of state and local government. The second principal problem encountered by our existing state agencies, and indeed by the Governor's office and the General Assembly, is that at present there is no single body that has responsibility for (1) formulating an overall plan of water resource use and development for the State and (2) resolving conflicting priorities that may arise from time to time from different water uses.

In addition, the Governor's office and representatives of Virginia in the United States Congress have emphasized the importance of Virginia's being able to speak in a single voice, adequately advised by expert opinion, to the various Federal agencies that are assuming an increasing role in the management of the State's water resources. It is a fundamental premise of the Committee that maximum participation by State and local government in the control and management of water resources is in the long run in the best interest of all the citizens of Virginia.

4. The Committee's Program

The Committee on October 18, 1965, met in Richmond with the heads of the various State agencies dealing in one way or another with water problems, or their representatives. At that time your Committee informed them of its tentative conclusion that legislation should be enacted in the coming Session of the General Assembly to establish a water resources commission and invited their comments and suggestions. Significantly none of the department heads, or their representatives, opposed the recommended course of action. Indeed, many expressed the view that creation of such an agency to formulate overall State policy and to provide all existing State agencies with expert advice was long overdue. The Committee invited those present at this meeting to submit any recommendations, or reservations, that they thought necessary or desirable upon further reflection to the Committee.

Later the chairman met with the Committee on Water Resources to seek benefit of their long experience. This expert Committee already had decided that a single key coordinating and planning agency was crucial to effective state action in this field.

The Committee has had further discussions with the Governor, interested citizens, as well as various members of State agencies, in drafting legislation. In the course of these conversations, it became apparent that if a new state agency were created the Division of Water Resources of the Department of Conservation and Economic Development should be shifted to the new agency to provide the nucleus for an expanded expert staff on water problems and to avoid duplication. This led the Committee to conclude that rather than creating a new agency, it would be more efficient and economical to make the Board of Conservation and Economic Development the agency for coordinating and planning of State efforts for water resource use and conservation.

5. The Recommended Plan

The Board of Conservation and Economic Development would be given the basic responsibility for formulating an overall State water resources

utilization plan, including specifically plans for river basin development. In addition, it would establish priorities of water use and resolve any policy conflicts that might develop between State agencies. These added responsibilities would supplement rather than supersede tasks presently performed by other State agencies. The Board would be given the responsibility for representing the State of Virginia in all dealings with the Federal government in the water resources field, though state agencies presently contracting with the Federal government may be permitted to continue to do so.

The membership of the Board of Conservation and Economic Development would be enlarged from 9 to 12 members. The 3 vacancies created should be filled by persons with special qualifications in the water resource field. One should also be familiar with soil conservation and other land use techniques directly related to water use and conservation. The Staff of the Division of Water Resources would be expanded to additional engineers, ecologists, limnologists and other trained experts that might be needed. This expansion of the staff might be done in connection with the State supported colleges and universities. To facilitate this pooling of expert talent, the Code would be amended to permit faculty members and other employees of State institutions and agencies to be compensated for part-time work for the Board. This expert staff would also be available to advise other State agencies in carrying out the duties presently being performed by them.

The Board would not be given any authority to adjudicate property rights in water nor would Virginia's common law of riparian rights be modified in any way.

The Committee has confined itself to the questions put to it and has not attempted to inquire into the details of how the Staff of the Division of Water Resources should be expanded and improved. Clearly, however, the State should see that it is adequately staffed to perform the new tasks assigned to it. For the convenience of the Governor, however, a brief memorandum giving some indication as to the increases in staff of the division that might be necessary and giving some rough cost estimates based on comparable programs carried on in other states was prepared by the Director of the Department of Conservation and Economic Development at the request of the Chairman of the Committee. (Appendix F).

Since the new duties given the Board of Conservation and Economic Development would include that of advising the Governor and General Assembly as to any additional legislation which might be needed from time to time in regard to water resources conservation and use, the State Water Resources Committee which presently is assigned this task would be abolished.

A proposed bill to effect these recommendations is attached as Appendix G.

In its deliberations, the Committee noted that the Virginia Constitution presents formidable barriers to the financing of specific river basin projects by the State and its political sub-divisions. This subject, which is basically a question of the implementation of river basin plans, merits serious consideration in the near future. But the Committee viewed that issue as beyond the scope of its assignment, which was confined to examining the adequacy of existing State procedures for the formulation of an effective State policy on water resources. Questions relating to the details of that policy or to particular river basin plans and their implementation

are those that should be considered by the enlarged Board of Conservation and Economic Development and its expanded staff after the adoption of the legislation recommended in this Report.

7. The Importance of Immediate Action

The problems in this area are continuing to grow in number and complexity. The modernization of Virginia's governmental structure for dealing with these complex problems is overdue. Time has just about run out. The forthcoming session of the General Assembly is probably the last chance Virginia will have to prepare for decisive action in regard to three major water sheds of this state. The monumental study of the James River Basin by the Corps of Engineers will soon be completed. Plans for the Potomac Basin and the Shenandoah are already reaching the determinative stage in Washington. The need for an existing State agency with over all responsibility for water resource conservation and with adequate staff to deal with the complex technical problems involved has materially handicapped the State in its efforts to participate fully with Maryland and the Federal Government in formulating a comprehensive water and land use plan for that basin. Proposals will soon be made by the Corps of Engineers as to the Salem Church project that may shape the face of the Rappahannock basin for the next hundred years. And the pattern set on these basins will undoubtedly govern the State's remaining water sheds.

The basic need should not be viewed as a race for power over this key resource with the Federal Government. There is still opportunity for an effective State-Federal cooperative effort. But it is clear that in the face of growing public recognition of the need for effective governmental action now to protect this basic essential for life, action that is not undertaken by State government in the immediate future will most assuredly be performed by the Federal Government.

Virginia must be prepared to evaluate and act on the recommendations that will be made in the monumental studies currently underway if she is to have an effective voice in the preservation and use of these great resources of the Commonwealth.

MATTHEW G. ANDERSON
FITZGERALD BEMISS
GEORGE M. COCHRAN
JOHN H. DANIEL
WALTER B. FIDLER

December 20, 1965.

APPENDIX A
COMMONWEALTH OF VIRGINIA
GOVERNOR'S OFFICE
RICHMOND

September 23, 1965.

The Honorable Matthew G. Anderson
The Honorable FitzGerald Bemiss
The Honorable George M. Cochran
The Honorable John H. Daniel
The Honorable Walther B. Fidler

Gentlemen:

As you well know, the subject of water resources is currently among those demanding nationwide attention. Water quality, flood control, sedimentation, pollution and adequate supply for the achievement of programs for development of agricultural, urban, energy, industrial, recreational, fish and wildlife needs are among those problems we must face in Virginia. Already there are areas of the Commonwealth in which the need for solutions is more real than imagined.

The federal government is moving rapidly in this direction. Through legislation already enacted, or presently pending, in Congress, the federal government could likely preempt the field of water resource planning and development unless the state is prepared to deal with these problems itself. I think you will agree it is essential that the state government retain a role of leadership in the development and use of the river basins within the State.

Undoubtedly, several legislative measures will be introduced in the next session of the General Assembly for the purpose of alleviating some of the problem areas. In order intelligently to deal with that legislation, I believe it would be sound planning to have available a compilation of existing legislation on the subject of water resources, together with an appraisal of the adequacy of that legislation to meet the present situation. If additional legislation is desirable or necessary to enable the State to adequately cope with these problems that legislation should be prepared. Quite possibly, an additional State agency or other political entity may be required to study our water resources and problems, prepare plans and administer programs for optimum use of the water and related land resources in the several river basins of the State.

Unhappily, little time remains for a Committee to undertake extensive studies and hearings prior to the convening of the next regular session of the General Assembly. I believe, however, that a small constituency of the Legislature already knowledgeable on the subject could very likely complete the study necessary for suggesting a course of action to the General Assembly if that study is expedited. Existing studies and the full resources of all State agencies will, of course, be available for such a Study Committee.

I ask that you meet with me in the Governor's Conference Room, on Tuesday, October fifth, at 11:30 a.m., for the purpose of discussing this matter. I would be most pleased if you will have lunch with me after our meeting.

Sincerely yours,

A. S. HARRISON, JR.

APPENDIX B

Commonwealth of Virginia

W. Martin Johnson, Lynchburg
Chairman

Barron F. Black, Norfolk
Vice-Chairman

George S. Aldhizer, II, Broadway

J. C. Biggins, Newport News



James J. Corbalis, Jr., Annandale

John H. Daniel, Charlotte Court House

T. B. Noland, Pulaski

H. B. Holmes, Jr., Richmond
Secretary

COMMITTEE ON WATER RESOURCES

Room 613, 10 South 10th Street

RICHMOND

Richmond 19, Virginia, December 17, 1959.

Honorable J. Lindsay Almond, Jr.
Governor of Virginia
The Capitol
Richmond, Virginia

Dear Governor Almond:

The first Virginia bulletin on the water resources of the Commonwealth was one of the Geological Series. It was published in 1906 and submitted by the Geologist in Charge to the members of "The Boards of Control of the Survey"—Virginia State Board of Agriculture and Immigration and Board of Visitors, Virginia Polytechnic Institute.

Later a State Geological Commission, with the Governor as its Chairman, came into being.

It was not until 1924 that there was appointed a separate water resources agency (Water Power and Development Commission) charged with gathering and disseminating information relative to water power and the industrial advantages thereof. In 1926, the State Commission on Conservation and Development was created. In the water resources field, it was vested with the powers and duties of the Water Power and Development Commission, the State Geological Commission, the State Geological Survey, and the State Geologist.

The latest general legislation on the subject appears in the Reorganization Provisions of the Code of Virginia, 1948. These have been incorporated in the Code and retain language of the 1908 Acts which was appropriate when all water resources responsibilities were under the State Geological Survey. Apparently the need for amending these was overlooked either in 1924 or in 1948. However, the fact that there is some duplication in the Code concerning the water resources responsibilities of the heads of two divisions is not particularly material from a legislative point of view. Undoubtedly it is the intent of the General Assembly to place the responsibility on the Director of the Department of Conservation and Economic Development and allow him to assign all or parts of it to one or more division heads. In Section 10-8.1 it is provided that the Director "may delegate to the head of any such division the powers and duties relating to the work of the division that may be conferred or

imposed by law upon the Director * *." Presently the water resources responsibilities of the Director are divided so that "Ground Water Investigations" are under the Commissioner of Mineral Resources and the remainder are under the Commissioner of Water Resources.

In its deliberations on water resources during the period 1953-1958, the Virginia Advisory Legislative Council recognized the advantages of initiating action toward the creation of a separate Department of Water Resources and the appointment of a Water Resources Commission. Rather than make the change in one step, it recommended and the General Assembly enacted legislation under the provisions of which your Committee on Water Resources was appointed.

During the ten meetings which we have held since our appointment the best organization for carrying out the water resources policies and responsibilities of the Commonwealth have been discussed several times. At our invitation representatives from both federal and state agencies interested in water resources have informed us concerning their powers and responsibilities. These frank discussions have emphasized the fact that, in some of the aspects of its water resources organization, Virginia has made changes to meet conditions which had already arisen.

Having considered the matter, the members of your Committee are convinced that a separate Department of Water Resources should be organized as soon as practicable—preferably in 1960. Attached are proposed amendments to the Code to accomplish that end. Attention is invited to the fact that similar action has been taken recently by other southeastern states. However, in those cases, greater organizational changes were involved than will be the case if the proposed amendments are enacted. It is very probable that, with the passage of time, additional powers and responsibilities will be assigned to the Water Resources Commission. This will be necessary due both to policy changes required to meet anticipated needs and to the benefits incident to consolidating water resources matters under one agency. What is suggested in our proposal is a most logical first step in anticipation of the future need for closer state supervision and protection of our water rights and responsibilities. It should not be postponed. The growing importance of this great natural resource and the universality of its use by all segments of our economy dictate the need for provision.

If the proposed legislation is passed by the General Assembly, appropriate changes should be made in the Appropriations Bill to transfer to the Department of Water Resources the funds for water resources now in the budget under the Division of Water Resources and the Division of Mineral Resources. No increase in appropriations will be necessary.

Inclosed for your information is a copy of "Notes on Code Provisions Pertaining to Water Resources Activities of State Agencies" which will give you an idea of the wide distribution of water resources responsibilities.

We are convinced that you will look back on favorable consideration of this proposal with much satisfaction.

With kind regards, I am

Sincerely,

W. MARTIN JOHNSON, *Chairman*

PROPOSED AMENDMENTS TO THE CODE OF VIRGINIA
FOR THE CREATION OF A DEPARTMENT OF WATER
RESOURCES AND THE APPOINTMENT OF A STATE
WATER RESOURCES COMMISSION

1. Amend Section 2.1 by adding thereto:
 (21) Department of Water Resources
2. Amend Section 10-8.1 as follows:
 Delete "Division of Water Resources."
3. Amend Section 10-93 as follows:
 Repeal (4) and (5) and change (10) by deleting the word
 "hydrographic".
4. Change Chapter 7 of Title 62 as follows:
 Delete Sections 10-113 to 10-117 inclusive and amend Section
 10-117.1 by substituting "Commissioner of Water Resources" for
 "Director of Conservation and Development."
5. Amend Title 62 by adding thereto the following:

Chapter 1.2

State Water Resources Commission

§ 62-9.11. *State Water Resources Commission; number and terms of members.*—The State Water Resources Commission, hereinafter in this chapter sometimes called "the Commission", shall consist of seven members, who shall be appointed by the Governor subject to confirmation by the General Assembly, and who shall be removable from office during their respective terms by the Governor at his pleasure. Appointments shall be for terms of four years commencing on July first except that, in the original appointments, two shall be for periods of four years, two for a period of three years, two for a period of two years, and one for a period of one year. No person shall be eligible to serve more than two successive terms of four years, other than as State Commissioner of Water Resources; provided that a person appointed to fill a vacancy caused by an unexpired term may serve two additional successive terms.

§ 62-9.12. *Residence and professional requirements.*—Of such Commission, one member shall be a resident of the James River Basin, one a resident of the Virginia portion of the Roanoke or Chowan River Basins, one a resident of the Virginia portion of the New, Tennessee, or Big Sandy River Basins, one a resident of the Rappahannock or York River Basins or of the Virginia portion of the Potomac River Basin, and one a resident of the areas adjacent to Chesapeake Bay and the Atlantic Ocean which are not included in any of the river basins referred to in this section. One member shall be qualified in matters pertaining to agriculture, one in matters pertaining to industry, one in matters pertaining to municipalities, one in matters pertaining to water transportation, one in matters pertaining to civil engineering, and one in matters pertaining to law.

§ 62-9.13. *Chairman; State Commissioner of Water Resources.*—The Chairman, whose official title shall be State Commissioner of Water Resources, and who may, at the time of his appointment, be a nonresident of Virginia, shall be a qualified person appointed at large. The State

Commissioner of Water Resources, hereinafter in this chapter sometimes called "the Commissioner," shall devote his entire time and attention to his duties and shall receive such compensation as shall be fixed by the Governor, subject to the approval of the Commission, unless such salary be fixed by the General Assembly in the appropriation act. He shall also be reimbursed for his actual traveling expenses while engaged in the discharge of his duties.

§ 62-9.14. *Oaths of members of Commission.*—Before entering on the discharge of his duties, each member of the State Water Resources Commission shall take an oath that he will faithfully and honestly execute the duties of his office during his continuance therein.

§ 62-9.15. *Pay and allowances of other members.*—The members of the Commission, other than the chairman thereof, shall receive twenty dollars per diem and their actual expenses while engaged in the work of the Commission; but no such members of the Commission shall receive in excess of fifteen hundred dollars and actual expenses in any one year.

§ 62-9.16. *Meetings.*—The Commission shall meet at least once in every four months and at such times, on the call of the chairman or of a majority of the members, as may be deemed necessary to transact such business as may properly be brought before it. Four members shall constitute a quorum of the Commission for all purposes. It shall be the duty of the Commission to keep accurate minutes of all meetings of the Commission, in which shall be set forth all acts and proceedings of the Commission in carrying out the provisions of this chapter.

§ 62-9.17. *Offices.*—The main office of the Commission shall be located in the City of Richmond. In the discretion of the Commissioner, other offices may be established at other locations in Virginia as may be necessary or needful to carry out the provisions of this chapter.

§ 62-9.18. *Chief engineer and other employees; deputy commissioner.*—The State Commissioner of Water Resources shall employ a chief engineer and such other engineers, geologists, chemists, specialists, technicians, aides, clerks, assistants, and other employees as may be needed, and shall prescribe and fix their duties. They shall receive such salaries and expenses as may be fixed in accordance with the provisions of law. The chief engineer will also act as deputy commissioner and perform such of the Commissioner's duties as may be delegated to him by the Commissioner.

§ 62-9.19. *Salaries and expenses; how paid.*—All salaries and expenses shall be paid from the State Treasury out of the annual appropriation for the State Water Resources Commission. Warrants for such salaries and expenses shall be issued by the Comptroller on certificates of the Commissioner to the parties entitled thereto, and shall be paid by the State Treasurer out of the funds appropriated for that purpose.

§ 62-9.20. *Defense of employees.*—If any person employed by the State Water Resources Commission shall be made defendant in any civil action for damages arising out of any matter connected with his official duties, he may, in the discretion of the Attorney General, be represented in such action by the Attorney General or one of his assistants. If, in the opinion of the Attorney General, it is impracticable or uneconomical for such legal service to be rendered by him or one of his assistants, he may

employ special counsel for such purpose, whose compensation shall be fixed by the Attorney General. If any such employee shall be arrested or indicted or otherwise prosecuted on any charge arising out of any act committed in the discharge of his official duties, the Commissioner may with the approval of the Governor employ special counsel to defend such employee. The compensation for special counsel employed, pursuant to this section, shall be paid out of the funds appropriated for the administration of the State Water Resources Commission.

§ 62-9.21. *General powers and duties of Commission.*—The State Water Resources Commission shall be vested with the following powers and shall have the following duties:

- (1) *Investigatory programs.*—To conduct, either alone or in cooperation with other governmental agencies, programs for the investigation and study of surface and ground waters and the chemical quality thereof and to publish the results of such studies in useable form.
- (2) *Promotion.*—To promote and encourage the wise use and intelligent development of the water resources of the Commonwealth.
- (3) *Coordination.*—To coordinate water resources developments.
- (4) *Assistance.*—In keeping with its responsibilities and capabilities, to render advisory and consultative assistance concerning water resources.
- (5) *Federal-State and interstate relations.*—To insure coordination, proper state representation, and protection of the interests of the Commonwealth in those water resources relations with the federal government and other states which are not specifically assigned to other agencies of Virginia, and to participate in appropriate national and sectional organizations.
- (6) *General.*—To exercise all water resources functions formerly assigned to the Department of Conservation and Economic Development or any of its divisions and, in general, to exercise all water resources functions which may be assigned by proper authority or by law or which are not assigned specifically to other agencies of the State Government or its political subdivisions.

§ 62-9.22. *General powers of the Commissioner.*—As executive head of the Commission, the Commissioner is specifically charged with the duty of executing all orders and decisions of the Commission and he may require that all employees perform their duties under this chapter.

§ 62-9.23. *Reports.*—In addition to such special reports as may be required by the Governor or the General Assembly, the Commission shall submit to the Governor in writing on or before the first day of December preceding each regular session of the General Assembly a report of its acts and doings for the preceding two years. Such report may also include the recommendations of the Commission as to changes in the State policies, laws, or organization pertaining to water resources. There shall be appended to every such report a copy of each of the two appropriate annual reports of the Commissioner, which he is hereby directed to make to the Commission, and which shall include a detailed statement of the work done by him each year. The reports required by this section shall be transmitted by the Governor to each house of the General Assembly as soon as possible after the opening of the regular session thereof.

APPENDIX C

Commonwealth of Virginia

George C. Garriss, Norfolk
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C. N. Robertson, Richmond

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J. M. Alexander, Richmond
Secretary

COMMITTEE ON WATER RESOURCES

Room 613, 10 South 10th Street
RICHMOND

Richmond 19, Virginia, August 15, 1963.

Honorable A. S. Harrison, Jr.
Governor of Virginia
The Capitol
Richmond, Virginia

Dear Governor Harrison :

Organized under the provisions of Section 10-114 of the Code, your Committee on Water Resources is composed of representatives of industry, agriculture, shipping, engineering, the legal profession, municipal water supply, and a county-wide water authority. The Commissioner of Water Resources is also a member. Since its organization on July 1, 1958, it has met twenty-six times. At twelve of these meetings it has been addressed by sixteen different individuals representing three federal agencies (Soil Conservation Service and the Norfolk and Washington Districts of the U. S. Army Corps of Engineers), nine Virginia agencies (Agricultural Experiment Station, Soil Conservation Committee, Water Control Board, Department of Health, State Corporation Commission, State Ports Authority, Commission of Game and Inland Fisheries, Fisheries Laboratory, and Fisheries Commission), three agencies of other states (North Carolina Board of Water Resources, North Carolina Department of Water Resources, and Massachusetts Water Resources Commission), and the paper industry.

Letters from the Committee have been addressed to the Governor on

Gathright Project (9-11-58 and 5-11-61)
James River Channel (11-20-58, 1-8-59 and 5-11-61)
Interim Potomac River Basin Report (11-20-58)
Repeal of Sections 15-740 to 15-746 of the Code (1-8-59)
Oyster Leases (3-5-59)
Commendation of Appalachian Power Company (3-5-59)
Membership of Potomac River Basin Commission of Virginia (11-25-59)
Improvement of facilities in the Hampton Roads ports (12-17-59)
Organization of a Department of Water Resources (12-17-59)
Standing Natural Resources Committees (1-12-61)
House Bill No. 15 (2-8-62)
The appointment of a Virginia Potomac Committee (2-8-62)
VALC Study of the withdrawal of materials (5-10-62)

In addition, letters have been written to the Chairman of the U. S. Senate Select Committee on National Water Resources, the James River Channel Commission, and members of the Congressional delegation from Virginia on matters of interest to the Commonwealth.

The Committee's studies and activities have led it to the conclusion that the water resources program of the Commonwealth is ineffective and uncoordinated. This situation results primarily from the complicated organization which exists for the administration of water resources functions. Some appreciation of this may be obtained from the widespread distribution of authorities and responsibilities among numerous state agencies as shown in the attached notes on Code provisions prepared in 1959. This is not a new discovery—it was recognized by the Water Resources Committee of the Advisory Council on the Virginia Economy in 1952, and, subsequently, by various VALC water resources studies. The General Assembly recognized it when it directed the establishment of the Committee as an aid toward its solution. The passage of time has increased the seriousness of the deficiency and the Committee is of the opinion that proper coordination of water resources activities within the Commonwealth should no longer be deferred. The industrial development program of the Commonwealth, as one example, would benefit immeasurably by a properly coordinated water resources program. The vital part which water resources plays in other aspects of the social and economic life of the Commonwealth and which would also be beneficiaries are too well known to elaborate upon herein.

Many other states have found that the centralization of most of their water resource functions and responsibilities has proven to be advantageous. Others, like Virginia, have the matter under consideration and are seeking solutions which will serve best the individual needs of each state.

Several possible organizations have been discussed in our meetings. Outlines of two are attached as illustrations of some which have been considered.

Before proceeding further in our investigations and considerations, it is our hope that it will be possible for representatives of the Committee to discuss the subject with you at your convenience.

Kindest regards from all of the members.

Sincerely,

W. MARTIN JOHNSON, *Chairman*

Attachments

GOVERNOR
DEPARTMENT OF CONSERVATION AND ECONOMIC
DEVELOPMENT

PARKS
RECREATION

TOURIST

GEOLOGY

FORESTS

DIVISION OF WATER RESOURCES

STAFF	SURFACE WATER	GROUND WATER	LABORATORY	STREAM QUALITY	PLANS PROJECTS
Administration	Gagings	Investigations	Analysis	Classification	Storage
Fiscal	Flood Studies	Wells	Chemical	Capacity for Pollution	Release
Files	Droughts	Logs	Bacteriological	Tolerance	Control
Personnel	Uses	Artesian	Thermal	Dissolved Oxygen	Hydropower projects
Reports	Irrigation	Other	Radiological	Biochemical Oxygen	Navigation
Publications	Flood Storage	Mine Water		Demand	Cooling Water
Advisory	Impoundments			Fish Kills	Watershed Improvements
Studies					Conservation
					Surveys
					Canals
					Liaison
					U.S. Engineers Districts
					Navy
					Colleges
					Soil Conservation Serv.
					Agriculture
					Encroachments
					State Corporation
					Commission Liaison
					Health Liaison
					Fisheries Liaison
					Highways Liaison
					Ports Authority Liaison

GOVERNOR

WATER RESOURCES COMMISSION- - - WATER QUALITY HEARING COMMITTEE
(3 Members of Commission)

	SECRETARY	COMMISSIONER			
STAFF DIVISION	PLANS AND PROJECTS DIVISION	SURFACE WATER INVESTIGATORY DIVISION	GROUND WATER INVESTIGATORY DIVISION	LABORATORY DIVISION	WATER QUALITY DIVISION
Administration. Fiscal. Files. Personnel. Publications.	Consultation and services. State plans. Assist in planning water projects. Review of and comments on federal programs and projects. Liaison with federal agencies and water agencies of other states.	Determination and interpretation of basic data for surface waters. Delineation of flood plains and other special studies.	Determination and interpretation of basic data for ground waters. Special studies.	Determination of quality of surface and ground waters. Special analyses.	Duties of the present Water (Pollution) Control Board staff less administrative and laboratory functions.

Appendix D

Departments, Agencies, Commissions and Public Service Corporations
Concerned with Water Resources Conservation and Use in Virginia

WATER USE AND CONTROL FUNCTIONS													
Departments, Agencies Commissions	Supply	Pollu- tion Abate- ment	Flood Con- trol	Irri- gat.& Drain- age	Pow- er	Navi- ga- tion	Water shed Mng.	Fish& Wild Life	Port Devel- op- ment	River Bed Use	Rec- rea- tion	Basic Data Collec- tion	Ad- vice
FEDERAL													
Dept.of Army-Corp.of Eng.		X	X			X			X	X	X	X	X
Dept.of Trea.-Coast Gd.		X											
Dept.of Helth.Ed.Welf.Sv.		X											
Dept.of Int.-Geo.Survey	X											X	
Nat'l. Park Service							X	X			X		
Fish & Wildlife Service								X			X		
Dept.of Agri.-Erosion Cnt.			X				X						
Soil Conservation Service	X		X	X			X						
Agri.Conservation Pro.				X			X						
Forest Service							X	X			X		
Farmers Home Admn.				X									
Dept.of Comm.-Weather Bu.	X		X										
Federal Power Comm.			X		X	X		X			X		
STATE*													
Governor										X			
Dept.of Conservation & Economic Development													
Div. of Forestry							X	X			X		
Div. of Geology	X											X	
Div. of Parks								X			X		
Div. of Water Resources	X										X	X	X
Soil Conservation Com.ofVa.				X			X					X	
Water Control Board	X	X											
Dept. of Health													
Bureau of Sanitary Eng.	X	X											
Bureau of Shellfish San.	X	X						X		X			
Comm. of Fisheries		X						X		X		X	

Comm.of Game &Inland Fish		X						X					
State Corp. Commission	X		X		X								
Va. State Port Authority									X				
Highway Dept.						X			X	X			
Water Resources Committee													X
Insti. Marine Sci.		X											X
Circuit Courts			X		X								
LOCAL													
Dept.of Public Utilities	X						X		X				
Dept. of Public Works		X	X	X		X							
Dept. of Public Health	X	X											
Dept. of Recrea. & Parks											X		
Sanitation District		X											
Drainage District			X	X									
Local Planning Commission							X						X
Regional Planning Comm.				X									X
PUB, SERV, CORP.													
Water	X												
Electric					X								
Railroad									X				

*For summary of applicable provisions of the Virginia Code, see Notes on Virginia Water Laws and Agencies (1964 Rev.) published by the Division of Water Resources of the Department of Conservation and Economic Development.

APPENDIX E

EXCERPT FROM THE REPORT OF THE VIRGINIA OUTDOOR RECREATION STUDY COMMISSION DATED NOVEMBER 1, 1965

15 WATER RESOURCE AND RIVER BASIN STUDIES

Virginia's rivers have been a prime source of pleasure and profit since the days of John Smith. So bountiful have they been that we have assumed them capable of taking all manner of abuse and neglect and of still meeting all demands upon them.

With population and economic growth, the demands are many and conflicting. They include:

- Water for metropolitan populations
- The vast requirements of industry
- Sewage and industrial waste disposal
- Recreation—boating, fishing, swimming
- Commercial fisheries
- Agricultural irrigation
- Power dams and navigation projects
- Transportation lanes

As these demands have created problems, a great variety of State and Federal agencies have been directed to deal with each as if it were separate and independent from other water problems. As previous studies and experience in this and other states have shown, this proliferation of agencies treating fragments of a deeply interrelated complex is inefficient and ineffective.

A river basin, from mountain spring to delta, is a highly sensitive system which under the stress of large and conflicting demands can be effectively studied, planned, conserved, and developed only as a whole.

A striking example of conflicting demands on a single basin is seen on the James between Richmond and Newport News. They include carrying off industrial, human, and agricultural waste while thousands seek water-based recreation; increasing industrial water needs while commercial and housing developments lower surrounding water tables; historic preservation while speculators buy colonial plantations expecting an improved shipping channel to attract heavy industry. Clearly the development of one potential threatens another.

As major engineering projects are undertaken for flood control, water supplies, and recreation, it will be important for the State to have the governmental machinery to bring together all of the arguments for and against a proposed treatment of a major river basin and to consider alternate proposals in the light of the long-range common benefit to Virginia. These are Virginia rivers, and whatever we do or fail to do about them will affect all Virginia for generations to come.

There is, however, no State long-range planning agency to consider the pros and cons of these projects and to relate them to all aspects of the development of a major river basin and to other major concerns of the State.

The Commission recommends that consideration be given to the creation of a Water Resource or River Basin Commission for these basic purposes:

1. To provide a single State office through which all studies, plans, proposals, and programs must be cleared.
2. To assist the Governor and the General Assembly in comprehending all the values involved for effective long-range attention to water resources.

The anti-pollution activities of the State Water Control Board have produced good results. But there are still many streams in Virginia which are unfit for recreation use because of various types of pollution. It is recommended that the State Water Control Board be given funds to employ the personnel, purchase laboratory equipment, and do the research necessary to accelerate its Clean Stream Program.

APPENDIX F

AN OUTLINE FOR THE PREPARATION OF A COMPREHENSIVE PLAN FOR THE DEVELOPMENT OF VIRGINIA'S WATER AND RELATED LAND RESOURCES

The following may serve as a guide for use in the study of Virginia's water and related land resources and in the formulation of a comprehensive plan for their development. The objective of such a study and plan is to provide an inventory and appraisal of needs and to suggest, if appropriate, means by which those needs may be met.

Then, collection of information, analysis, and planning at the state level are desirable to determine specific measures which should be taken in order to alleviate or forestall potential difficulties and to expand opportunities in the areas of domestic and industrial water needs, water quality control, flood prevention, land stabilization and soil improvement, agricultural irrigation, fish and wildlife, and recreation.

An important role in the planning process includes the coordination of planning and development at the various echelons of government.

A program for water and related land resource analysis and planning should be of such scope and detail as to clearly define short term needs and to place in proper perspective rational estimates of needs spanning a period of a score or more of years. Such a planning program will not be inexpensive both in time and in material resources. An estimate of the required investment is in the order of \$5,500,000 to be expended over a period of a decade.

Need for the formulation of a plan for water resources development becomes more clearly evident upon realization of the rate at which population additions are being made and upon notation of the commensurate expanding rate at which material goods are being produced to support those added numbers. Near exponential increase in numbers associated with the foregoing will impose demands for water in quantity as well as to provide increasing opportunities for maintenance of water in suitable quality, without which the consideration of quantity becomes meaningless.

Planning may receive its impetus from the existence of a critical need or from the existence of an opportunity. The latter case most probably will furnish the impetus in accordance with conditions as currently obtained in Virginia. Utilization of the second situation obviously will obviate the first. Thus, planning is fundamental and should be continuing. A scheme developed today for implementation during an interim of 15 years or more will in all chance require reevaluation long before the plan has been completely executed. Reevaluations notwithstanding, the short-term, stopgap approach most assuredly results in development short of the desirable.

Essential to the analysis and planning process is an array of data which must be available for examination to include, but perhaps not limited to, the following:

- a. A knowledge of the occurrence and distribution, in time and in space, of surface water and ground water.
- b. Insight as to the current uses and probable future uses of water to include existing and potential quality deterioration loads.

c. A determination of the present level of development and plans for development by various echelons of government and of the private sector.

d. A knowledge of soil cover conditions to include natural and cultural features.

e. An understanding of existing water-based and other recreational facilities with estimates of probable future requirements.

f. The legal framework within which water affairs are managed.

g. Projections of the level of economic activity likely to obtain in the future to include estimates of population and requirements in terms of material goods and services to support that population.

h. Enlightenment as to the aspirations of those who would be affected by water and related land resources development works.

i. A knowledge of trends as viewed by the private sector or in industry.

The desirability of and necessity for water resource planning at the state level has long been recognized as is evidenced by the existence of those agencies having such assigned responsibilities. The collection, analysis and planning course requires professional genius much of which is now available in state government. Significantly accelerated activity however demands that such be supplemented. Federal funds for water resources planning may be available on a cost-sharing basis should the principals involved find such arrangements appropriate.

Water and related land use planning can be logically accomplished using the major river basins as the planning unit. Such is convenient since each such basin can be conveniently treated as a hydrological unit. The statewide task would be such a vast undertaking that it would appear desirable to progressively treat portions of the whole. Studies, planning, and reports of studies then would be forthcoming at certain intervals for each river basin. An order of treatment by river basins might be as follows:

- a. New
- b. Potomac
- c. Tennessee and Big Sandy
- d. Roanoke
- e. Rappahannock and York
- f. James
- g. Chowan and Dismal Swamp
- h. Small Coastal Basins and Chesapeake Bay

The final statewide plan then would be composed of the individual river basin reports with possible alternative proposals for future developments to meet the requirement.

A work schedule is outlined by river basins on attachments 1 through 8. The various tasks required are enumerated with estimates of time and of funds required for each task. Estimates were determined based on the experience of costs involved in similar studies that have been made by agencies of the federal government. Admittedly the estimates are not de-

tailed nor refined to such a degree as to eliminate the possibility of a need for considerable adjustment. A sequence of events involved in the suggested program is shown on attachment 9. The sequence diagram indicates the course of studies progressing in such a manner as to utilize effectively a growing staff and to meet the need for action in an order that may be logically expected to occur. It is realized that the schedule must be flexible both in the sequence of events and in time involved since the availability of funds and the availability of professional skills will determine in large measure the accomplishments that can be made. Changing needs and wants will have due influence.

The task of bringing the basin studies and plans into a unified plan for the state as a whole, during the last two years of the study period will, in all probability, require advanced and complex methods of appraisal relative to the matching of resources and evaluation of costs and alternatives. Means must be explored as to methods of financing schemes that may be determined to be desirable and necessary. Such exploration might well be required of financial institutions on a contract basis. Consulting engineer services undoubtedly will be required to provide assistance in advanced waste treatment techniques and desalting processes.

Consideration will have to be given to the determination of the role to be played by various echelons of government. In all probability implementing legislation will be required. A review of experience in other areas leads to an estimate of about \$2,000,000 as the requirement for analyzing the eight basin reports of study, unifying the material and for formulating a state plan. The estimate may appear to be inflated and no concrete evidence is given to unquestionably support it. It is realized that here we are discussing unknown, untried areas.

A suggested staff for the Division of Water Resources is shown on attachment 10. Such a staff is thought to have the capabilities required to perform the necessary work. Salaries involved have been estimated to require about \$480,000 per year with an additional amount of approximately \$190,000 needed for office space, publications, capital outlay, travel, and contingencies. The total estimated annual requirement for funds needed to administer the suggested program of the Division of Water Resources would approximate \$670,000 or about \$550,000 per annum in excess of the current budget for the Division. Note is made of the fact that additional funds in an amount unspecified would be required for administration, funding and execution of any development works that might result from interim study reports and recommendations.

A review of The Council of State Governments publication titled "Agencies Administering Water Resources in the Southern States," July 1965, indicates that the following southern states expended funds for water resources activities during fiscal year 1964-65 in amounts as indicated:

North Carolina	\$ 770,000
Tennessee	200,000
Texas	2,010,000
Virginia (1963-64)	185,760*

* Includes \$80,000 estimated expenditure for ground water activities in the Division of Mineral Resources.

ATTACHMENT 1

TASK TIME COST TABLE VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN NEW RIVER BASIN (Area 3,044 square miles)

Item	Task	Time	Estimated Cost
I	General Supervision	1 to 2 years	\$ 20,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	1 year	30,000
III	Review of existing plans	1 year	16,000
IV	Expansion and updating of basic data	1½ years	15,000
V	Economic base study	1 year	20,000
VI	Hearings	period of 90 days	500
	(a) Collection and review of legal problems	1 year	2,500
VII	Establishment of projections of future water and related land resource needs	1 year	20,000
VIII	Engineering plans and associated cost for determining three levels of development	1½ years	55,000
IX	Preparation and publication of interim basin reports	6 months	13,000
	(a) Feedback of data on development of basin plans	approximately 8 years starting at the publication of interim report	8,000
TOTAL			\$200,000

ATTACHMENT 2

TASK TIME COST TABLE VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN POTOMAC RIVER BASIN

Item	Task	Time	Estimated Cost
I	General Supervision	2 years	\$ 55,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	1½ years	100,000
III	Review of existing plans	1 year	45,000
IV	Expansion and updating of basic data	1 year	46,000
V	Economic base study	1½ years	45,000
VI	Hearings		
	(a) Collection and review of legal problems		9,000
VII	Establishment of projections of future water and related land resource needs	2 years	100,000
VIII	Engineering plans and associated cost for determining three levels of development	2 years	170,000
IX	Preparation and publication of interim basin reports	6 months	22,000
	(a) Feedback of data on development of basin plans	last 8 years	8,000
TOTAL			\$600,000

ATTACHMENT 3

TASK TIME COST TABLE VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN TENNESSEE—BIG SANDY RIVER BASINS (Area 4159 square miles)

Item	Task	Time	Estimated Cost
I	General Supervision	3 years	\$ 37,500
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	2 years	48,000
III	Review of existing plans	2 years	20,000
IV	Expansion and updating of basic data	2 years	20,000
V	Economic base study	2 years	20,000
VI	Hearings	2 years	4,500
	(a) Collection and review of legal problems		
VII	Establishment of projections of future water and related land resource needs	3 years	48,000
VIII	Engineering plans and associated cost for determining three levels of development	2 years	80,000
IX	Preparation and publication of interim basin reports	1 year	15,000
	(a) Feedback of data on development of basin plans	last 7 years	7,000
TOTAL			\$300,000

ATTACHMENT 4

TASK TIME COST TABLE VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN ROANOKE RIVER BASIN (Area 6295 square miles)

Item	Task	Time	Estimated Cost
I	General Supervision	4 years	60,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	2 years	80,000
III	Review of existing plans	2 years	40,000
IV	Expansion and updating of basic data	2½ years	45,000
V	Economic base study	2 years	45,000
VI	Hearings	2 years	10,000
	(a) Collection and review of legal problems		
VII	Establishment of projections of future water and related land resource needs		100,000
	(a) Low flow and power regulation	1 year	10,000
VIII	Engineering plans and associated cost for determining three levels of development	2 years	180,000
IX	Preparation and publication of interim basin reports	1 year	25,000
	(a) Feedback of data on development of basin plans	last years	5,000
TOTAL			\$600,000

ATTACHMENT 5

TASK TIME COST TABLE
 VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN
 RAPPAHANNOCK AND YORK RIVER BASINS (Area 2718 and 2663 square miles)

Item	Task	Time	Estimated Cost
I	General Supervision	3 years	\$ 40,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	2 years	60,000
III	Review of existing plans	2 years	30,000
IV	Expansion and updating of basic data	2 years	30,000
V	Economic base study	2 years	40,000
VI	Hearings	2 years	10,000
	(a) Collection and review of legal problems		
VII	Establishment of projections of future water and related land resource needs	2 years	40,000
	(a) Power		10,000
	(b) Pleasure craft harbors		10,000
VIII	Engineering plans and associated cost for determining three levels of development	2½ years	110,000
IX	Preparation and publication of interim basin reports	1 year	25,000
	(a) Feedback of data on development of basin plans	last 5 years	5,000
TOTAL			\$410,000

ATTACHMENT 6

TASK TIME COST TABLE
 VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN
 JAMES RIVER BASIN

Item	Task	Time	Estimated Cost
I	General Supervision	5 years	\$100,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	3 years	130,000
III	Review of existing plans	3 years	85,000
IV	Expansion and updating of basic data	3 years	90,000
V	Economic base study	3 years	105,000
VI	Hearings	3 years	25,000
	(a) Collection and review of legal problems		
VII	Establishment of projections of future water and related land resource needs	3 years	150,000
VIII	Engineering plans and associated cost for determining three levels of development	3 years	250,000
IX	Preparation and publication of interim basin reports	1 year	52,000
	(a) Feedback of data on development of basin plans	4 years	8,000
TOTAL			\$950,000

ATTACHMENT 7

TASK TIME COST TABLE

VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN
CHOWAN—DISMAL SWAMP RIVER BASINS

Item	Task	Time	Estimated Cost
I	General Supervision	3 years	\$ 45,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	3 years	55,000
III	Review of existing plans	3 years	30,000
IV	Expansion and updating of basic data	3 years	20,000
V	Economic base study	3 years	25,000
VI	Hearings	3 years	5,000
	(a) Collection and review of legal problems		
VII	Establishment of projections of future water and related land resource needs	3 years	55,000
VIII	Engineering plans and associated cost for determining three levels of development	3 years	90,000
IX	Preparation and publication of interim basin reports	1 year	20,000
	(a) Feedback of data on development of basin plans	2½ years	5,000
TOTAL			\$350,000

ATTACHMENT 8

TASK TIME COST TABLE

VIRGINIA COMPREHENSIVE WATER AND RELATED LAND RESOURCE PLAN
SMALL COASTAL RIVER BASINS

Item	Task	Time	Estimated Cost
I	General Supervision	3 years	\$ 20,000
	(a) Establishing staff and assigning tasks		
	(b) Supervision and control plan progress		
II	Inventories	2 years	30,000
III	Review of existing plans	2 years	16,000
IV	Expansion and updating of basic data	2 years	15,000
V	Economic base study	3 years	20,000
VI	Hearings	3 years	3,000
	(a) Collection and review of legal problems		
VII	Establishment of projections of future water and related land resource needs	3 years	20,000
VIII	Engineering plans and associated cost for determining three levels of development	3 years	55,000
IX	Preparation and publication of interim basin reports	1 year	19,000
	(a) Feedback of data on development of basin plans	2 years	2,000
TOTAL			\$200,000

ATTACHMENT 9

SEQUENCE OF EVENTS—COMPREHENSIVE WATER RESOURCES STUDY

BASIN STUDIES

Item	New	Potomac	Tenn.— Big Sandy	Roanoke	Rappa- Hannock- York	James	Chowan Dismal Swamp	Coastal Basins	
II	INVENTORIES AND SURVEY								→ FOR MULATION OF THE STATE WIDE PLAN.
III	REVIEW OF EXISTING STUDIES, PLANS, AND PROJECT								→ FINANCING AND IMPLEMENTATION.
IV	BASIC DATA COMPLICATION NOT IN II AND III								→ PUBLICATION AND DISTRIBUTION.
V	ECONOMIC BASE STUDIES—BASIN, STATE,								→ EDUCATION.
VI	PUBLIC HEARING								→
VII	PROJECTION OF NEED								→
VIII	ENGINEERING PLANS—COST ESTIMATE								→
IX	INTERIM BASIN REPORTS TO INCLUDE DEVELOPMENT RECOMMENDATIONS								→

YEAR

SUGGESTED STAFF FOR THE DIVISION OF WATER RESOURCES
NEEDED TO ACCOMPLISH COMPREHENSIVE STUDIES AND
PLANNING OF WATER AND RELATED LAND RESOURCES

1. *Office of the Commissioner*

- 1 Commissioner and Chief Engineer
- 1 Assistant Commissioner and Principal Engineer
- 1 Administrative Supervisor (Personnel and Public Relations)
- 1 Fiscal Officer
- 1 Legal Officer
- 3 Clerk-Stenographers

2. *Planning Section*

- 1 Section Chief
- 2 Economists
- 1 Engineering Geologist
- 1 Hydraulic Engineer
- 1 Hydrologist
- 1 Hydro-Power Engineer
- 1 Sanitary Engineer
- 2 Field Engineers
- 4 Engineering Aides
- 1 Outdoor Recreation Specialist
- 1 Waterways Engineer
- 1 Computer Programmer
- 4 Clerk-Stenographers

Attachment 10

3. *Surface Water Section*

- 1 Section Chief
- 6 Hydraulic Engineers
- 6 Hydraulic Technicians
- 6 Hydraulic Engineering Aides
- 1 Sediment Engineer
- 2 Flood Plain Engineers
- 1 Clerk-Stenographer

4. *Ground Water Section*

- 1 Section Chief
- 3 Geologists

5. *Laboratory Section*

- 1 Laboratory Chief
- 1 Laboratory Chemist
- 1 Field Technician
- 1 Laboratory Technician
- 1 Clerk-Stenographer

6. *Drafting and Reproduction Section*

- 1 Section Chief
- 1 Illustrator
- 1 Draftsman

A BILL to amend and reenact §§ 10-3, 10-5 and 10-11 of the Code of Virginia, relating to the membership of the Board of Conservation and Economic Development, its quorum and the compensation of certain employees of the Department; to amend the Code of Virginia by adding sections numbered 10-12.4 through 10-12.11 prescribing additional powers and duties to the Board of Conservation and Economic Development relating to the conservation and use of the State's water resources and requiring departments, commissions, boards, agencies, offices, institutions and political subdivisions of the State to cooperate with the Board in certain respects; and to repeal § 10-114 of the Code of Virginia and abolish the Committee on Water Resources.

Be it enacted by the General Assembly of Virginia :

I. § 1. The General Assembly recognizes the crucial importance of the State's water resources to the well being of its people. The General Assembly also recognizes that the growth of the State's population and the continuing development of its economy are imposing ever increasing demands on the State's water resources and that, at the same time, these water resources are limited. For these reasons, a concerted, coordinated effort must be undertaken in the immediate future to conserve these water resources and to provide for the optimum use of the water and related land resources of this State. The General Assembly declares that it is in the best interest of the people of Virginia that such an effort be undertaken immediately under the leadership of the State Government. To enable the State to act effectively and efficiently in providing for the optimum use of its water resources in the public interest, the General Assembly by this act increases the membership of the Board of the Department of Conservation and Economic Development from nine to twelve and gives it authority (1) to formulate continually an overall state water resources policy, (2) to make plans to encourage water and related land projects and uses for the optimum use of the State's water resources, including comprehensive river basin plans, (3) to provide expert advice on water resources to the other agencies and political subdivisions of the State and others, (4) to resolve any conflicts as to water resource policies among the various State agencies, (5) to represent the state in its relations with other States and the Federal Government in matters directly related to the conservation or use of the State's water resources, and (6) to make annual reports to the Governor and General Assembly on the status of the State's water resources, together with recommendations for any legislation that it may deem necessary or desirable to carry out the purposes of this act.

§ 2. That § 10-3 of the Code of Virginia, be amended and reenacted as follows :

§ 10-3. * *The Board of Conservation and Economic Development shall consist of twelve members appointed by the Governor subject to confirmation by the General Assembly, if in session when such appointments are made, at that session, or if not in session, at the next succeeding session. The terms of the nine members of the Board holding office on the effective date of this amendment, all for 4 years and expiring 3 in 1966, 2 in 1967, 2 in 1968 and 2 in 1969, shall continue unimpaired until their respective expiration dates. The three additional members shall be appointed by the Governor for terms as follows: one shall be for one year, one for two years and one for three years. All appointments for succeeding terms shall be for four years each. No person shall be eligible to succeed himself*

as a member of the Board for more than one term, *provided, however, that terms of three years or less shall not be considered for purpose of this limitation.* Any vacancy shall be filled by the Governor for the unexpired term. In making appointments, the Governor shall endeavor to select appointees of such qualifications and experience that the membership of the Board shall include persons suitably qualified to consider and act upon the various special interests and problems of importance, which, under the laws of the Commonwealth, the Board may be required to consider and act upon. The Board may appoint subcommittees of not less than three, its members to consider and deal with such special interests and problems, and may delegate to such subcommittees any powers and duties which may be conferred by law upon the Board in relation to such special interests and problems.

§ 3. That § 10-5 of the Code of Virginia be amended and reenacted as follows:

§ 10-5. The Board shall meet at least once in every sixty days, and on the call of the chairman, when in his opinion additional meetings are expedient or necessary. * *Seven* members shall constitute a quorum of the Board for all purposes.

§ 4. That §10-11 of the Code of Virginia be amended and reenacted as follows:

§ 10-11. The Director in the appointment of officers, agents and employees may, with the approval of the Governor, designate such other State officers, or officers in State-supported institutions as may indicate their willingness to accept such appointment; * *unless otherwise specifically provided in such appointment* such officers, agents and employees shall serve without additional compensation, other than actual expense incurred in the performance of their duties.

§ 5. That Code of Virginia be amended by adding sections numbered 10-12.4, 10-12.5, 10-12.6, 10-12.7- 10-12.8, 10-12.9, 10-12.10 and 10-12.11 as follows:

§ 10-12.4. The Board shall proceed as rapidly as possible to study the existing water resources of this State, means and methods of conserving and augmenting such water resources, and existing and contemplated uses and needs of water for all purposes. Based upon such studies and after an opportunity has been given to all other State agencies and subdivisions which may be concerned to be heard, the Board shall formulate a coordinated policy for the use and control of all the water resources of the State and issue a statement thereof. In formulating the State's water resources policy the Board shall, among other things, take into consideration the following declarations and policies:

(1) Existing water rights are to be protected and preserved subject to the principle that all of the waters within this State belong to the public for use by the people for beneficial purposes without waste;

(2) Adequate and safe supplies should be preserved and protected for human consumption, while conserving maximum supplies for other beneficial uses. But when proposed uses of water are in mutually exclusive conflict or when available sup-

plies of water are insufficient for all who desire to use them, preference shall be given to human consumption purposes over all other uses;

(3) It is in the public interest that integration and coordination of uses of water and augmentation of existing supplies for all beneficial purposes be achieved for the maximum economic development thereof for the benefit of the State as a whole and in formulating its policies the Board shall be cognizant of the fact that Virginia's industrial growth has, in large part, been due to this State's favorable attitude towards the private enterprise system;

(4) In considering the benefits to be derived from drainage, consideration shall also be given to possible harmful effects upon ground water supplies and protection of wildlife;

(5) The maintenance of stream flows sufficient to support aquatic life and to minimize pollution shall be fostered and encouraged if existing rights and priorities under existing laws will permit;

(6) Watershed development policies shall be favored, whenever possible, for the preservation of balanced multiple uses, and project construction and planning with those ends in view shall be encouraged;

(7) Due regard shall be given in the planning and development of water recreation facilities to safeguard against pollution;

(8) Local development of watershed conservation, when consistent with sound engineering and economic principles, is to be promoted and encouraged; and

(9) It is of paramount importance in all cooperative programs that the principle of the sovereignty of this State over all the waters within the State be protected and preserved, and such cooperation by the Commission shall be designed so as to reinforce and strengthen State control.

The statement of water resource policy shall be revised from time to time whenever the Board shall determine it to be in the public interest.

The initial statement of State water resource policy and any subsequent revisions thereof shall be furnished by the Board to all State agencies and to all political subdivisions of the State. Such statement shall serve as a guide to such agencies and such subdivisions in actions related to or affecting the State's water resources.

§ 10-12.5. The Board shall upon application of any State agency or political subdivision, and may upon its own motion, resolve any conflict as to actual or proposed water use or other practice directly affecting water use that involves a potential or existing conflict between water use functions under the jurisdiction of different State agencies. If requested by any State agency or political subdivision directly affected, or at the Board's discretion, the Board shall hold public hearings on such question at which all persons concerned shall be heard. If the Board finds that an actual or potential conflict exists, or would exist because of the action taken or contemplated it shall resolve such conflict in the light of the best interest of the Common-

wealth and in conformity with any statement of State water resource policy by the Board that may then be in effect. The Board shall deliver a copy of its order to the State agencies involved and to each person intervening in such proceedings. Thereafter the State agency or agencies shall carry out the policy, and honor the priorities as to use, if any, found by the Board to be in the best interests of the Commonwealth. The Board may apply to the Circuit Court of the City of Richmond or to the Circuit Court having jurisdiction over the district in which a violation of its order may be alleged to exist for appropriate process to enjoin any continuing violation of State water resource policy as set forth in the Board's order or for the enforcement of such policy by affirmative action.

§ 10-12.6. The Board shall also have the responsibility for devising plans and programs for the development of the water resources of this State in such a manner to encourage, promote and secure the maximum beneficial use and control thereof. These plans may include comprehensive water and related land resource plans for each major river basin of this State, including specifically the Potomac-Shenandoah River Basin, the Rappahannock River Basin, the York River Basin, the James River Basin, the Chowan River Basin, the Roanoke River Basin, the New River Basin, the Holton River Basin, the Clinch River Basin, the Big Sandy River Basin, and for those areas in the Tidewater and elsewhere in the State not within these major River Basins, or for portions of such basins or areas. The Board may, and upon the written request of a political subdivision of the State located in whole or in part in any such basin or area as to such basin or area shall, establish advisory committees for various river basins or other areas to assist it in formulation of such plans or programs. In this connection, the Board may cooperate with all branches or agencies of the Federal Government, with all branches or agencies of the government of any state in a river basin located within that state and Virginia, with the political subdivisions of the State, and with all persons and corporations interested in or directly affected by any proposed or existing plan or program. The Board may also recommend to the General Assembly any further legislation that the Board may deem necessary or desirable for the accomplishment of such plans.

§ 10-12.7. The Board may make available technical advice and information on water resources to any agency or political subdivision of this State, any committee, association or person interested in the conservation or use of water resources, any interstate agency or any agency of the Federal Government, all for the purpose of assisting in the preparation or effectuation of any plan, program or project concerning the use or control of the water resources of this State in harmony with the State water resources policy or otherwise with the public interest in encouraging, promoting and securing the maximum beneficial use and control of the water resources of this State.

§ 10-12.8. The Commission shall advise the Governor and the General Assembly as to all matters relating to the State's water resource policy and shall report annually to them on the status of the State's water resources.

§ 10-12.9. (1) In all matters directly related to conservation or use of the State's water resources, the Board is authorized to speak and act for the State in all relations with the Federal Government

or with the government of other states or with interstate agencies or authorities directly concerning conservation or use of the State's water resources.

(2) In regard to such matters, the Board, or such person or state agency designated by it, may appear and testify for the State before any committee of the United States Congress or the legislature or any court or commission of any state.

(3) The Board, or such person or other State agency designated by it, shall be a party on behalf of and represent the State in the formulation, entering into and carrying out of any formal or informal compact or other agreement concerning the use and control of the water resources of this State, between this State, or any State agency or public corporation thereof, and any other state, any state agency or public corporation thereof, or the Federal Government or any agency thereof.

(4) As such party on behalf of and representative of the State, the Board, or such person or other State agency designated by it, shall make every effort practicable to insure that the compact or other agreement, as formulated, entered into and carried out, is in harmony with the State water resources policy and otherwise with the public interest in encouraging, promoting and securing the maximum beneficial use and control of the water resources of this State.

(5) Any State agency or person required or permitted by law to formulate, enter into or carry out any compact or other agreement of the type referred to in subsection (3) of this section shall give timely and adequate notice to the Board before it undertakes any action under such requirement or permission.

§ 10-12.10. (1) In order to assist the Board in carrying out its functions as provided by law, the Board may:

(a) Call upon the other agencies and political subdivisions of this State to furnish or make available to the Board information concerning the water resources of this State which such State agencies or political subdivisions have acquired or may acquire in the performance of their functions.

(b) Have access to the records, facilities or projects of the other agencies or political subdivisions of this State, in so far as such records, facilities or projects may concern the water resources of this State or the functions of the Board with regard thereto.

(c) Otherwise utilize the services, records and other facilities of the other agencies or political subdivisions of this State to the maximum extent practicable.

(2) Upon request by the Board, all officers and employees of State or the political subdivisions of the State shall cooperate with the Board.

(3) Upon receipt and approval by the Board of a claim therefor, any special or extraordinary expense incurred by any other agency or political subdivision of this State in cooperating with the Board under subsections (1) and (2) of this section shall be paid to such other agency or political subdivision of the State.

§ 10-12.11. In addition to other powers conferred by this act, the Board shall have the following powers:

(a) To administer all funds available to the Board for carrying out the purposes of this act;

(b) To disburse funds to any department, commission, board, agency, officer or institution of the State, or any political subdivision thereof for carrying out the purposes of this act;

(c) To apply to any appropriate agency or officer of the United States for participation in or the receipt of aid from any Federal program respecting or related to conservation or development of the State's water and related land resources;

(d) To act either independently or jointly with any department, commission, board, agency, officer or institution of the State or any political subdivision thereof in order to carry out the Board's powers and duties;

(e) To accept gifts, bequests and any other things to be used for carrying out the purposes of this act.

§ 6. That §10-114 of the Code of Virginia is hereby repealed and the Committee on Water Resources provided for therein is hereby abolished.

§ 7. Nothing in this act shall be construed as altering, or as authorizing any alteration of, any existing riparian rights or other vested rights in water or water use.

