

A Water Code To Meet Virginia's Needs

by William R. Walker and Phyllis G. Bridgeman*

Water is becoming a scarce resource in some parts of Virginia, and managing the use of water for the fullest benefit of all our citizens will require changes in the State's legal and institutional structures. Our water resources are not limitless, and ever-increasing demands will compel us to provide a management framework that will ensure that water is used efficiently and distributed equitably.

Because water is an integral part of all our lives, any changes in water policy are sure to cause lively debate. It is desirable that we discuss the necessary changes in policy before our water problems reach a state of crisis and before emotions cloud our perception for rational action.

This special report summarizes Bulletin 147, A Water Code for Virginia. It describes the legal framework for ensuring the efficient and equitable use of water. The proposed legal mechanism facilitates the resolutions of conflicts among competing interests, taking into account the needs and concerns of all citizens. This bulletin provides a commentary for each provision in terms of why it is needed, its origin, its advantages and disadvantages, and, in some cases, its effectiveness based on the experience of other states. This report and Bulletin 147 are a valuable source of information for all citizens concerned with water resources in Virginia.

A Water Code for Virginia presents a series of alternatives for revising Virginia's water laws, especially its water quantity management framework, to ensure adequate water supplies for satisfying the Commonwealth's future social, economic, and environmental needs. Its premise is that the legal structure for managing water in Virginia has not kept pace with mounting concern over environmental problems and with rapid changes in population and technology.

Although Virginia's public officials have worked diligently to manage water-related problems as they have arisen, weaknesses in the existing law have undermined their efforts. One of the challenges of the 1980's is for the state to identify the legal and institutional changes that are needed to support the Commonwealth's existing socioeconomic and environmental condition and yet are flexible enough to meet future challenges associated with competition for water supplies and protection of water quality.

* Respectively, director and former information officer, Virginia Water Resources Research Center.

Recognizing that no one approach to change nec-

essarily is "correct," the act proposed by this water code offers a range of provisions for modifying administrative structure, managing water quantity, regulating the construction and operation of water wells, and protecting water quality. The ultimate goal of *A Water Code for Virginia* is to mark several alternative routes to meeting future needs, not to provide a single, detailed road map for change. If it increases awareness and discussion of options for change and their implications, this proposed Act will have attained a part of its goal.

TRENDS IN WATER MANAGEMENT PROBLEMS

The primary challenge facing Virginia's water resource managers is increased demand for water to meet industrial, agricultural, domestic, and energy needs. During the first 350 years of its history, Virginia experienced few problems in meeting the water needs of its citizens. With only minor exceptions, the supply of ground and surface waters exceeded demand in most sections of the state, and conflicts over water rights were rare. Because of this lack of conflict, water supply responsibilities remained with individuals and with units of local government. In cases where conflicts did arise, the courts provided an adequate forum for their resolution. The abundance of water combined with small population size and low population density meant that court decisions had little impact beyond the parties involved in the litigation and served only as precedents for future decisions of a similar nature. The general population never felt the effects of either the water problem or the judicial decision.

However, since 1950 the potential for conflict between large segments of the state's population has increased. Whereas the amount of water available for use has remained relatively constant, the demand for water since 1950 has risen at an ever increasing rate. This rise in demand has been difficult for some areas to meet because the amount of surface water available for withdrawals has decreased while there has been a growing awareness of the need to preserve instream flows for fish and wildlife, water-based recreation, navigation, and water quality purposes.

During this period, Virginia changed from a strictly agrarian society to a more industrial one. Many industrial operations consume large quantities of water; the new high-technology industries in particular strain both the quantity and quality of water supplies. In addition, energy production, which has been doubling about every 10 years, has increased

... Water management problems will grow in both number and severity if an appropriate legal and institutional structure is not developed to handle water conflicts in a rational and equitable manner.

the demand for cooling water. As a result demand has shifted from agricultural to industrial uses. The relative abundance of precipitation in most years has kept irrigation from becoming a major agricultural concern in the Commonwealth. However, recent technological advances that have rendered irrigation more economically feasible and greater drought frequencies have quickened interest in installing irrigation equipment. At the same time that agricultural and industrial uses have increased, domestic demand also has risen. Not only has the population grown, but improvements in the standard of living have led to increases in per-capita water use.

These trends suggest that water management problems will grow in both number and severity if an appropriate legal and institutional structure is not developed to handle water conflicts in a rational, timely, and equitable manner.

Changes in water use activities that create stress for water allocation mechanisms are not the only challenge water resource managers must face, however. Acts of nature, such as droughts, may escalate problems to crisis proportions. These acts of nature are cyclical, unpredictable, and usually do not last for long periods of time. Thus, they have not provided the driving force for change in the management of the state's water resources, and responses to them have taken the form of temporary accommodations rather than of permanent, long-term solutions.

It is only when the option of "doing nothing" has been removed from the decision-making process by crisis conditions that legislators can withstand the pressures of parochial constituency groups and implement reforms designed to prevent the crisis from turning into a catastrophe. Even under these conditions of stress there still remains a tendency to defer action on strategies designed to provide a more permanent solution. and to do the minimum

necessary to relieve the situation. Many states that have successfully adopted comprehensive water management systems were able to do so only after a water crisis lasted for so long that constituency groups acquiesced to the compromises necessary for significant and permanent change. Past water crises in Virginia have not persisted for sufficient lengths of time to make permanent change an absolute necessity.

METHODOLOGY

Five main ideas guided this research: (1) the need to be comprehensive, (2) the importance of examining the experiences of other states, (3) the importance of offering alternative provisions for various sections, (4) the decision to keep as much of existing state law as possible, and (5) the belief that additional background material would be helpful to decision makers.

First, it seemed important to formulate an overall management framework for Virginia's water resources, including incorporation of a use-permit system. The patchwork approach used in the past to resolve various state water problems has not produced a reliable framework for resolving future, and sometimes, present, problems. As each new problem appears, the process seems to be again at "square one." It thus seemed imperative to develop a legal structure which would not only assist with current water problems but would provide a framework for the orderly solution of future water conflicts.

Second, this need for a comprehensive approach led the researchers to study closely the water management frameworks of eastern and western permit states. Allocation has been handled in the western United States through permit systems based on seniority of use, perpetual water rights, and preferential use schemes. Eastern states that have abandoned the riparian doctrine, such as Florida and Iowa, also have adopted a permit concept, but these systems typically base water allocations on some use standard and grant time-limited permits subject to review. Through analysis of the various permit systems an attempt has been made to choose the best features of a number of systems and to fashion them into a framework relevant to Virginia. All proposed modifications of existing Virginia law have been tried in other states. This is important for provisions that might be subject to a constitutional attack. It was felt that any provision that had been upheld by one state supreme court would likely be sustained by the Virginia Supreme Court, although there is, of course, no absolute certainty as to what the

Virginia court might do when confronted with a specific statutory challenge. In some cases the provisions represent the best parts of several state laws.

Third, instead of offering one version of the proposed Act, alternative provisions for many sections were formulated. Few perfect solutions exist in this world. The research conducted in preparing this report made plain that several viable frameworks for meeting Virginia's water management needs are available. The intent here is to present those ideas, their advantages and disadvantages, recognizing that the final choice will be made in the political arena where social values can influence modifications to the legal structure.

Fourth, in selecting the various alternatives presented, every effort was made to use as much of Virginia's existing legal structure as possible. In some cases a complete rewrite of existing sections would have made the Act more concise, but the major concern was the substance of the law. If the existing statutory language is adequate to attain the overall policy and administrative goals of the Act, then the language is presented intact or with slight modifications even though it might be more cumbersome.

Finally, considerations of space and readability meant that the commentaries had to be brief, but the commentary following a provision explains its purpose and how it complements the other provisions of the Act. It also may identify the advantages and disadvantages associated with an alternative or discuss in what state, if any, it has been used and with what success.

ORGANIZATION

Article 1 is concerned with the adoption of a state water policy, the guiding theme for interpretation of the various sections directing administrative agencies to take actions pursuant to this Act. Article 1 also provides for the development of both a water use plan and a water quality plan, which are to be integrated into a State Water Plan. The administrative functions of the State Board are set out in detail, especially those concerned with coordination and planning.

The concern of Article 2 is the use of water. These uses are regulated by means of a permit system, which is modeled after systems used in several other states. An effort was made to combine the

best concepts of the several systems. The permits are limited to a specified term of years, are subject to renewal, and are used as a means of implementing the provisions of the State Water Use Plan. Provisions are made for competing applications and special powers of regulation in times of water shortages.

Article 3 is concerned with the construction and maintenance of wells, the mechanics of ground-water use permits having been included in Article 2. It also provides for the regulation of the well drilling industry, but not the drillers themselves, who are considered Class B contractors pursuant to sec. 54-113(2) of the *Code of Virginia*

Conclusions and Recommendation

The legislature must undertake significant changes in the legal and institutional structure of the state's water law if its water resources are to be managed efficiently and equitably for all citizens. Since water is an integral part of the lives of all citizens, any changes in the status quo will cause debate. It seems desirable to undertake changes before some aspect of our water problem meets crisis proportions. It is while cool heads prevail and before emotions cloud rational action that major revisions should be considered in Virginia's water law. The time for action would seem to be now.

Administrative Structure and Operation

POLICY OPTIONS

The first article of this Act establishes the policy criteria and administrative structure which will undergird the management framework described in the remaining sections. It presents a choice of three water policy options against which all administrative and court decisions would be tested. Well defined policies provide the cohesive criteria necessary for consistent decision making. The proposed criteria represent policies that have been established in other states, thus providing some opportunity to assess their effectiveness by examining the legal and institutional structures which have evolved to implement the policies and by interviewing state officials to determine how well they work in practice.

Public Trust Doctrine

The first policy alternative is the concept of a "public trust." It recognizes that all the waters of the state are the property of the state and are held in trust for all citizens, who have a right to the common use of a resource that can be used by all but owned by none. Thus, the decisions to be made with respect to these waters must balance the impacts that the decisions will have

on various groups affected by the decisions. All decision makers must act in a fiduciary capacity, which holds them to a high standard of impartiality and requires that both short- and long-range costs and benefits must be weighed very carefully in the decision-making process.

Declaration of Management Fundamentals

The second policy reviewed is one adopted by the state of Washington. Its declaration of basic fundamentals is a detailed listing of management guidelines, including a listing of specific uses declared to be beneficial. Allocation must be based on maximum net benefits for the state's citizens, which are "total benefits less costs, including opportunities lost." In addition, the policy requires the enhancement of state waters by establishment of base flows, preservation of natural lake levels, "all known available and reasonable methods" of wastewater treatment, and nondegradation of existing water quality, except where overriding considerations of the public interest would be served. Such technical guidance in a policy statement is a distinct departure from other alternatives, which require interpretation as various circumstances change.

Beneficial Use

The last alternative is one adopted by Iowa and is characterized as a beneficial use policy. In 1957 the formerly riparian jurisdiction of Iowa enacted a comprehensive permit system for both surface and ground waters that calls for the water to be put to beneficial use to the fullest extent possible. Its policy statement recognizes the importance of flood control and "orderly development, wise use, protection and conservation" of the state's water. In addition, conservation is encouraged for the reasonable and beneficial use of the water, and the policy endorses the investment of funding to promote and expand beneficial uses. Lastly, the policy reserves the control, development, and use of all waters for beneficial purposes for the state by the exercise of its police powers.

IMPLEMENTING A WATER POLICY

This Act proposes a revision of Virginia's water law to include an expanded regulatory scheme for managing water use. The water policy of the state should be so sound fundamentally that it provides management guidance for the future as well as the present even though the drafters are not able to identify all problems and situations that might arise. Each of the proposed policy options presents a slightly different role for state government in managing water resources. However, all the proposed policy criteria reflect greater state involvement in conservation and protection activities, because it is required by increasing competition for certain sources of

◆ — — — — — ◆

The water policy of the state should be so sound fundamentally that it provides management guidance for the future as well as the present even though the drafters are not able to identify all problems and situations that might arise.

◆ — — — — — ◆

supply and the need to manage the degradation and restoration of water quality in many surface and groundwater sources

An effective regulatory plan of use, conservation, and development can be unified at the state level by a designated statewide authority to administer the water management policy that is chosen. The courts under the riparian system are the administrators of the state's current water use management system. They only decide controversies and only intervene after damage has occurred. Thus, a new institution (or the modification of an existing one) is proposed to make this Act function. This State Board is authorized to regulate uses over a specified minimum and is held to a statutorily chosen use standard specifying that permits may only be issued for reasonable-beneficial uses.

The effective management of water resources requires a more detailed strategy of implementation than the general guidance provided by a policy statement. Supporting provisions in Article 1 outline the requirements for membership and appointment to the Board, and provide details about other powers and duties, such as integrating water use and water quality planning through the mandatory development of a State Water Plan that would be constructed from a state water use and a state water quality plan. The coordinated development of these two plans, along with periodic reviews and revisions, should keep the overall State Water Plan dynamic in nature, thus allowing for additions and modifications as circumstances change in the future.

Article 1 also recommends appropriate provisions for enforcement, penalties, and citizen complaints. Likewise, judicial review is included to ensure that there is not an abuse of discretion or the improper use of authority by decision makers. Since this Act has been proposed to benefit all citizens of the state, it is essential that they have easy access to the system.

Providing water supply traditionally has been the responsibility of an individual or local government. This Act will not change that responsibility, but one of its objectives is to provide coordination and management of basic water sources from the broad perspective of the state. Local government has no responsibility to weigh in its decision-making function the impacts of decisions beyond its borders. Since neither ground nor surface water respects political boundaries, it is essential that management decisions be made so that the overall effect of water management decisions will be to benefit the greatest number and cause inconvenience to the smallest number. Accordingly, Article 1 describes the role of the state administrative agency in managing Virginia's water resources so that there is no doubt that the ultimate authority rests with the designated agency and that local government cannot frustrate the administration of state law through zoning and land use ordinances.

Although an effective regulatory plan can be unified at the state level with a designated state authority such as the one described above, some states have benefited from delegating significant responsibilities to smaller geographic units, such as water management districts. The peculiarities of different regional characteristics can be accommodated by the creation of local districts which operate under general water management objectives set by a State Board. This "two-tier" management scheme assures local participation, but the State Board still has the ultimate authority. Modifications to the proposed Act for the purpose of creating water management districts and their governing boards are presented in Appendix A of Bulletin 147.

Regulation of Water Uses

Article 2 presents a management framework for ensuring the efficient and equitable allocation of state waters. The key to this management framework is the establishment of a permit system to regulate all water uses greater than a specified minimum. Article 2 describes permit application procedures and identifies options for the elements needed to implement the system, including permit conditions; permit duration; and criteria for choosing among competing permit applications. It also covers such special circumstances as interbasin transfers, the rights of uses already in existence when the permit system takes effect, and the declaration of water shortages.

HIGHLIGHTS OF THE PERMIT SYSTEM

Five elements of the permit system deserve special mention here because of their importance to the implementation of a management framework: (1) conditions for obtaining a permit, (2) competing applications, (3) interbasin transfers, (4) the permitting of existing uses, and (5) compensation for loss of an existing water right.

Permit Conditions

Standards for obtaining a water use permit are set out in two options that complement the reasonable beneficial use requirement described in Article 1. One alternative specifies that the contemplated use must be consistent with the public trust policy and the State Water Plan. The other alternative grants permits for reasonable-beneficial uses that do not "substantially or materially" interfere with non-regulated uses or existing uses. In addition, the second alternative empowers the State Board to grant permits allowing the use of water on nonriparian land, even if located outside the watershed of origin, and prohibits a choice between competing applicants based on the prior appropriation theory.

Competing Applications

When two or more parties file applications for the same source of supply, the Act provides that priority in time will only guide the State Board when the proposed uses are equal in every respect. Otherwise, three approaches are offered for choosing between competing applications: (1) approving the application that best serves the public interest, (2) approving permits according to a statutorily defined hierarchy of preferred uses, or (3) holding the State Board to

Effective management of Virginia's water cannot occur unless the amount and source of significant withdrawal uses are known. Accordingly, Article 3 requires the registration of all wells.

the standards of a fiduciary when granting permits.

Interbasin Transfers

Article 2 offers two alternatives for handling the interbasin transfer of water. One generally reflects common law restrictions on transfers except where authorized by specific legislation. The other allows permittees to transfer surface and/or ground water outside the area of origin or beyond overlying land upon approval by the State Board. Another provision detailing conditions for obtaining a permit authorizes the State Board to reserve water from use, subject to periodic review and the protection of existing uses, in order to implement the State Water Plan. Under this provision the State Board may choose to protect an area of origin when an interbasin transfer is proposed.

Existing Uses

Three alternatives for regulating existing uses are offered. One option merely requires an existing user to verify the claim to the State Board's satisfaction. On the other end of the spectrum, another approach allows an existing use to continue only upon compliance with the same requirements for new uses. In between is an option permitting existing uses to continue if users apply within three years and if they are reasonable-beneficial users.

Compensation for Forfeited Rights

When valid uses existing under the common law riparian doctrine are denied, the Act proposes two approaches to the troublesome issue of compensation. The State Board may deny the right of an existing use to continue, subject to an appeal procedure, and disallow compensation when the existing use fails to meet the use standard adopted. Such an approach protects the state from continuing wasteful uses of the past but still allows existing uses of reasonable amounts of water to obtain permits. On the other hand, the State Board may deny such applications but compensate existing users for the impairment of property rights by paying for damages and expenses related to the lessening of existing supply.

Regulation of Well Construction and Operation

There is general agreement that the costs associated with cleaning up a contaminated aquifer are probably beyond society's ability to pay because of the current state of the technology. It is therefore imperative that the emphasis be placed on preventing groundwater contamination. The provisions of Article 3 are for the express purpose of protecting groundwater quality and discouraging, if not preventing, a contractor from creating a situation in which the groundwater resource could become contaminated and a large social cost imposed on the general public. In addition to health implications, there are significant economic implications of groundwater contamination because it can necessitate the use of alternative water sources at a much greater expense.

The definition section of Article 3 sets forth two alternative definitions of "well." The first is comprehensive in nature and includes virtually every type of artificial excavation capable of withdrawing or injecting water into the ground. Under this definition any mining operation that breached a water-bearing formation would be subject to well regulations. The potential for contamination from mining and oil drilling activities is much larger than from an ordinary water well. The alternative definition comes from the current Groundwater Act of 1973, which is very restrictive and applicable only to water wells.

Effective management of Virginia's water cannot occur unless the amount and source of significant withdrawal uses are known. Accordingly, Article 3 requires the registration of all existing wells. Depending on the provisions adopted in Article 1 for regulating existing uses, a water use permit may not be required, but all existing well owners would be required to register their withdrawals.

Also included are provisions requiring contractors to file performance and compliance bonds. This requirement is very important because it makes funds available to correct situations in which significant pollution sources have been created from improper construction or abandonment of wells. To merely suspend a construction permit would not cure such a problem, and thus the

goal of these statutes is to protect underground aquifers or to correct problems as they are detected.

Article 3 requires that all well construction operations be performed under the direct and personal supervision of a Class B contractor who has received a permit for well construction. This makes one person accountable for the work being performed. The definition of "construction" includes alteration or repair, so a Class B contractor would be accountable for modifications and maintenance of existing wells. The same kind of general provisions would be required for those installing pumps and pump equipment. Also included are procedures to suspend or revoke a permit or to deny an application for a permit.

The well completion reports required by Article 3 should help the State Board to keep an accurate and up-to-date inventory of all wells, a necessary management tool for understanding the geology and hydrology of aquifers and aquicludes. In addition, in order to have meaningful enforcement of water use permits, all wells pumping above a certain level would be required to have measuring devices.

The state administrative agency is charged with adopting minimum standards for the construction of wells and the installation of pumps as an added protection for the groundwater resource. Caps and valves would be required on all wells to prevent waste and pollution. Abandoned wells can be significant sources of pollution if they are not filled and sealed properly, so land owners are responsible for meeting the State's standards and filing relevant information about procedures.

The requirements and standards developed pursuant to this Act need to be as functional as possible and be appropriate to real world situations. Thus, an advisory board from the well construction industry is authorized in Article 3 to assist the administrative agency in developing permit requirements, granting permits, and setting standards for wells and pump installations.

Lastly, as the demand for groundwater increases and pumping rates exceed recharge in some areas, the administrative agency may have to take responsibility for an artificial recharge program. This could become an important aspect of efficient management of the state's groundwater.