Introduction

Water law in the Commonwealth of Virginia has become a subject of increasing concern during the last decade. The basic common law doctrines and concepts that traditionally have governed activities affecting water have been supplemented in several areas by statutory enactments and new administrative management programs. The two primary forces responsible for this development have been the desire for more efficient utilization of what has become a scarce resource in some areas and concern over destruction of natural environmental values associated with the water resource. These forces are still at work, and additional changes in the legal framework are likely in the near future.

Modifications in water law generally have consisted of supplemental controls over specific types of water and water-related land use rather than a comprehensive revision of applicable law. The traditional common law control measures have been substantially superseded in certain limited areas, but previously existing law generally remains in force. Thus the body of law currently applicable to water spans a broad range of relatively independent common law doctrines and legislative enactments. These various components of the legal framework can best be analyzed within the context of individual water resource management issues.

Basic Allocation Mechanisms

Virginia law for allocation of water among withdrawal uses is based on the common practice of classifying water as to its location within the hydrologic cycle, with separate allocation principles applied to different sources of water. The primary legal classifications consist of natural watercourses, groundwater, and diffused surface water.

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Natural Watercourses

Allocation of streamflow continues to be accomplished through application of the riparian doctrine, the common law doctrine of water rights traditionally accepted in the eastern United States. This doctrine is simply a collection of principles for resolving water use conflicts that have been established in the accumulated decisions of the courts. Water allocation under the doctrine is a function of the courts of the state, and the primary mechanism of enforcement is the private lawsuit between parties to a specific controversy over water use.

The basic premise of the riparian doctrine is that water rights arise as an incidence to the ownership of land bordering or traversed by a natural watercourse. Under the current Virginia interpretation of the doctrine, each riparian landowner has the right to make a reasonable use of the water in connection with the use and enjoyment of the riparian property. The Virginia Supreme Court has described the right of the riparian owner as follows:

A proprietor may make any use of the water of the stream in connection with his riparian estate and for lawful purposes within the watershed, provided he leaves the current diminished by no more than is reasonable, having regard for the like right to enjoy the common property by other riparian owners.1

This statement of the riparian right establishes two fundamental limitations on water use: (1) the use must be on riparian land, and (2) the use must be reasonable.

Due to the restriction of use to riparian land, the definition of such land establishes limits for the transport of water. The basic requirement for land to be considered riparian is physical contact with the stream in question. The maximum extent of riparian land generally is considered to consist of the boundary of a stream’s watershed. Of course, subdivision of land within the watershed into multiple ownership destroys the riparian status of those tracts no longer in contact with the stream. In some jurisdictions, riparian status cannot be restored to once-separated tracts even by merger under common ownership with land that remained riparian.

The Virginia Supreme Court has never decided this particular issue,2 but the following statutory definition from a Virginia statute providing for impoundment of flood water indicates that all land under common ownership within a particular watershed is riparian at least for purposes of that act:

“Riparian land” is land which is contiguous to and touches a watercourse. It does not include land outside the watershed of the watercourse. Real property under common ownership and which is not separated from riparian land by land of any other ownership shall likewise be deemed riparian land, notwithstanding that such real property is divided into tracts and parcels which may not bound upon the watercourse.3

The concept of reasonableness is the central element in quantifying the extent of a water right under the riparian doctrine. Reasonableness is relative, depending on the individual circumstances of the particular case.4 A fundamental guideline is that a given water use must be compatible with other uses relying on the same source. Thus, a concept of sharing the available supply is a basic aspect of the riparian doctrine. However, not all uses are of equal standing in the sharing process. Domestic use is granted a higher priority than other uses. Satisfaction of domestic needs appears to be the sole purpose for which the entire flow of a stream may be taken.5

Although the reasonableness concept establishes a limit on the amount of adverse impact one water user can inflict on others, it does not necessarily prohibit all adverse effects—only those exceeding some reasonable level. This factor is the primary distinction between the reasonable use and natural flow theories of the riparian doctrine. Under the natural flow theory, a reduction in streamflow constitutes infringement of a property right; legal action can be initiated at the time of streamflow reduction and is not dependent on the existence of actual injury arising from a reduced water supply. Conversely, the right of action under the reasonable use theory does not arise until actual injury occurs; therefore, the riparian owner not using water or one whose use is not adversely affected by a reduction in streamflow has no basis for a legal action.

The courts sometimes fail to distinguish between the theories, with the result that certain decisions may contain language indicating acceptance of both theories. In Virginia, certain court decisions appear to endorse the natural flow theory,6 and the Virginia Supreme Court apparently has never expressly repudiated this concept in favor of reasonable use. However, statements of the court such as the previous quotation from Virginia Hot Springs Co. v. Hoover7 and pronouncements regarding the necessity for actual physical injury as a prerequisite for legal action8 suggest acceptance of the reasonable use concept.
Water rights under the riparian doctrine normally are not fixed in magnitude but may vary over time due to changes in water availability or other conditions. One potentially significant source of changed conditions is the initiation of new water uses based on previously unused riparian rights. Such rights generally are not lost because of non-use but continue to attach to riparian property. These unused rights constitute a major source of uncertainty for water users in riparian jurisdictions since no record of such rights exists.

Although riparian rights are not lost by simple non-use, they can be lost through the process of prescription. The basic requirement for the acquisition of a prescriptive right is adverse use for a certain period of time, which in Virginia is 20 years. Under the reasonable use theory, a prescriptive right cannot be established against an unexercised riparian right since the injury requirement cannot be satisfied. Neither can a prescriptive right be obtained against an upstream riparian since such owners cannot be adversely affected by a downstream water diversion.

The Virginia court follows the majority view that municipal withdrawal is not a riparian right on non-navigable streams; however, certain mechanisms exist by which such withdrawal may be permitted in spite of the lack of recognition as a riparian right. The availability of the powers of eminent domain condemnation to many public water suppliers is one important factor since it establishes a procedure for acquisition of the water rights of parties who would be injured and therefore have recourse to legal action. The availability of the powers of eminent domain, coupled with the reluctance of the courts to grant injunctions against municipal withdrawals, creates the option for the municipality to construct water works and initiate withdrawals prior to resolution of the water rights issues. If such withdrawal is later found to violate the water rights of others, condemnation proceedings can generally be instituted at that time. For example, the municipality involved in *Town of Purcellville v. Potts* was held to be in violation of the water rights of others, but the Virginia Supreme Court delayed application of the requested injunction to allow initiation of condemnation proceedings to acquire the rights in question.

Another mechanism by which a public water supply can achieve legal recognition is the process of prescription; however, a basic uncertainty regarding the establishment of a prescriptive right concerns the beginning of the prescriptive period. The question is whether the reasonable use theory’s requirement of injury will be imposed with regard to all other water users. This approach limits the value of the prescriptive right since unused rights would be excluded from its application. Where the riparian doctrine in a particular state still contains elements of the natural flow concept, it is possible that the physical injury requirement may not be strictly imposed. In *Town of Gordonsville v. Zinn*, for example, the Virginia court indicated the existence of the municipality’s prescriptive right against lower riparian owners in general without reference to specific injury in particular situations, at least suggesting that the interruption of natural flow for the prescribed period was in itself sufficient to establish the right.

A third manner in which public suppliers may circumvent legal problems arising from the lack of recognition of public supply as a riparian right is the use of surplus water not being used by riparian landowners. This approach is possible because of the requirement of the doctrine that injury occur before the right of legal action arises. Therefore, withdrawal of surplus water may be allowed for public supply or other purposes not recognized by the riparian doctrine.

However, such use is subject to several limitations. Without the sanctity of legal recognition, withdrawal would be limited to a magnitude that caused no adverse effects on other users. This standard is stricter than the normal limitation of withdrawal which allows some adverse impact, provided the effect is not unreasonable. A use dependent on surplus water has an inherent uncertainty with regard to its continuance due to the possible future exercise of previously unused riparian rights or an increase in existing uses. A further limitation of use without an established legal right is the lack of enforceable protection against excessive or otherwise unlawful water use by others.

A special category of surplus flow that has considerable potential for exploitation by public supplies without established water rights consists of flood waters. As in the case of the use of other surplus water, the right to use flood waters may be limited where such flows confer some benefit on riparian owners. The right to continuance of seasonal overflows has been recognized in a number of western cases because of irrigation benefits and sediment enrichment of land bordering streams. Overflow irrigation was recognized by the U.S. Supreme Court in the case of *United States v. Gerlach Live Stock Co.* Most of the situations where rights to contin-
uance of floods have been recognized are more likely to occur in the West, but some possibility exists that such rights could be recognized in an eastern state such as Virginia.

Water rights in a particular natural watercourse may be affected by the stream’s capacity for navigation. The primary distinction in water rights that exist in navigable waters as compared to those in non-navigable waters is that such rights are held subject to the power of governmental authorities to exercise control over the navigable water. All other uses are subordinate to the exercise of public rights and may be destroyed without compensation. Public control generally has been limited to such purposes as navigation, flood control, and power production. However, a few states have included public water supply in this superior class of uses.

In the State of Virginia, municipal water uses have not been determined to be encompassed by the “navigation servitude,” but special cases have been developed wherein municipal water rights may exist independently of the ripariandoctrine. A primary example consists of the water rights of the City of Richmond in the James River. The initial action by the state legislature leading to the development of Richmond’s current rights occurred in 1784 when the James River Company was created. The primary purpose of the action was construction of a canal along the James to improve navigation, but substantial water rights for other purposes were conveyed, including provision of water supply.

Although Virginia has not established direct administrative controls for allocation of streamflow, several administrative programs have an impact on use and development of watercourses. These programs can be classified into three general categories: (1) water resources policy formulation, (2) water resources planning, and (3) regulation affecting water use and development.

With regard to water policy, the State Water Control Board (SWCB) is under legislative mandate to “…formulate a coordinated policy for the use and control of all the water resources of the State…” Legislative guidelines for the formulation process include protection of existing water rights, provision for protecting and giving preference to adequate supplies for human consumption, maximization of economic development through water use and development, consideration of the harmful effects of drainage projects, maintenance of low flows to protect instream uses, watershed development for balanced multiple uses, and provision of adequate protection of water recreation facilities against pollution.

The policy statement subsequently developed by SWCB is a broad formulation encompassing all aspects of water resource management; however, the enabling legislation does not convey authority for effecting the resulting policy provisions, and implementation must be accomplished within the scope of existing agency authority. Consequently, the resulting policy statement adopted by the Board encompasses programs that are under the jurisdiction of a number of agencies. The Board’s direct implementation powers are limited to areas within its jurisdiction pursuant to other legislation. The agency has stated that the policy will also be utilized “…in the preparation of Water Resource Management Plans, advising on the adequacy/desirability of water resource projects, and authorizing specific water resource projects or in commenting on projects which affect water resources.”

Authority for water resource planning is also vested in SWCB as a result of a transfer of agency functions in 1972. Comprehensive basin plans have essentially been completed. SWCB planning traditionally has placed emphasis on water quality rather than quantity. This focus has been due to the existence of extensive federal regulatory requirements and funding programs relating to water quality and also to the historical water quality mission of SWCB. It is significant that planning authority does not vest implementation power in SWCB or any other agency; thus, implementation must be achieved through existing agency authorities.

Several regulatory measures exist in Virginia law that constrain certain types of water use and development. Included in this category are such programs as controls over public water supplies, construction of certain dams, and controls over fishing and hunting. These controls generally impose additional constraints on the potential water user but do not modify basic water rights defined by the common law.

Groundwater
Allocation of groundwater among competing users is an administrative function of state government in specially designated geographic areas and a function of the courts under common law groundwater doctrines in non-designated areas.

Designated Areas: The Groundwater Act of 1973 declares that control of groundwater resources is essential to ensure the preservation of the public
welfare, safety, and health and constitutes an application of the police power of the state for regulation of groundwater use. A fundamental aspect of the Act is that its principal regulatory measures do not apply statewide but are intended to be restricted geographically to those areas having identified groundwater management problems. Implementing the regulatory provisions of the Act in such an area requires that it first be designated as a "groundwater management area" by the State Water Control Board according to procedures in the Act.

The Act specifies four conditions which, individually or in combination, justify the initiation of groundwater management area proceedings. These include:

1. Excessive decline in groundwater levels or artesian pressures;
2. Interference between the wells of two or more groundwater users;
3. Actual or imminent overdrawing of the available groundwater supply; and
4. Actual or expected pollution of groundwater.

Two groundwater management areas have been designated to date. At its meeting in January 1975, SWCB designated a major portion of the state's southeastern corner as a groundwater management area. The designated area is that section of the coastal plain lying south of the James River and east of the fall line; it includes the counties of Prince George, Southampton, Surry, Sussex, and Isle of Wight and the cities of Chesapeake, Franklin, Hopewell, Norfolk, Portsmouth, Suffolk, and Virginia Beach. A second management area was established by an order adopted September 27, 1976. This area consists of the Eastern Shore of Virginia, including the counties of Northampton and Accomack and all towns within these counties.

The primary effect of designating a groundwater management area is to implement a special management program which includes regulation of new groundwater uses in the area. The principal control provision in the Groundwater Act is the requirement that certain uses within designated areas cannot be initiated without a permit from SWCB.

One category of exemptions from the permit requirement includes uses in existence on the date an area is designated, intended uses where wells are under construction, or any use in existence within two years prior to the date of area designation.

Existing uses must be registered with SWCB and are acknowledged by issuance of a certificate of groundwater right. Such rights are limited by the extent of application to beneficial use. This provision theoretically gives SWCB authority to review existing uses to some extent rather than to issue requested certificates automatically. Full utilization of this provision has the potential to overcome the weakness in the management program created by exempting existing uses from the permit requirement. Since existing uses may constitute the principal source of the groundwater problems in a given area, some control over such uses appears essential to effective groundwater management.

Another group of special uses will remain exempt even if not in existence at the time of area designation. This group includes "the use or supplying of groundwater for agricultural and livestock watering purposes, for human consumption or domestic purposes, or for any single industrial or commercial purpose in an amount not exceeding fifty thousand gallons a day." Although the exemption provisions do not make specific reference to municipal use or public water supply, the Virginia Attorney General has determined that municipal withdrawal for human consumption and other domestic purposes is exempt without regard to quantity as in the case of individual use for these purposes. Municipal withdrawals for single industrial and commercial purposes exceeding the 50,000-gallon-per-day limitation theoretically are subject to the permitting requirement. However, regulation of municipal withdrawals on a selective basis poses problems of administrative feasibility since individual withdrawals are likely to serve a variety of types and sizes of users. Thus it is doubtful as to whether municipal withdrawal of groundwater can be effectively regulated under the existing Groundwater Act.

For new or enlarged groundwater uses within a designated area not exempt because of their special nature, no inherent right of the landowner is recognized. The right to initiate a new use must be acquired from SWCB. SWCB may grant the right as requested, but it is authorized to impose conditions and limitations in the permit, approve the permit for less water than requested, or reject the application. The basic legislative criteria to guide SWCB's decisions with regard to a proposed well are that new uses are to be limited by the requirement of beneficial use and that undue interference with existing wells will not be allowed. The Act provides that "[n]o application shall be approved when the same
will deprive those having prior rights of beneficial use of the amount of groundwater to which they are lawfully entitled. This statutory provision introduces the concept of priority in time as a basic element of water rights and expresses the fundamental concept of the doctrine of prior appropriation, a doctrine that has not been applied previously in Virginia.

Non-Designated Areas: The Virginia Supreme Court has decided a limited number of cases arising out of disputes between different groundwater users and between water users and other resource developers, but common law groundwater rights have been incompletely defined. In fact, the Virginia court has never explicitly accepted any particular groundwater doctrine because of its position that its decisions to date would have been the same under either of the two doctrines generally accepted in the eastern United States—absolute ownership and reasonable use.

Although the position taken by the court indicates a similarity between the absolute ownership doctrine and the reasonable use doctrine, certain distinguishing characteristics do exist. The underlying concept of the absolute ownership doctrine is that each landowner has complete ownership and control over water underneath his land. Therefore, each landowner has an unlimited right to use groundwater or to interfere with its movement through land development, subject only to the qualification that waste and malicious injury to others generally is unlawful. Thus, the doctrine constitutes a rule of capture and creates essentially no enforceable water rights since no right of legal action exists for injury produced by the activities of others.

In the case of the reasonable use doctrine, the landowner is viewed as having the right to make any reasonable use of groundwater on the overlying land, or the right to reasonably develop property, although interference with the water supplies of others may result. Although use of the term “reasonable use” to identify this doctrine of groundwater law suggests similarity with the riparian doctrine, a fundamental distinction can be made between the two doctrines. In the case of the riparian doctrine, reasonableness is a relative concept and the rights of each party are determined with regard to the needs of the other users. The determination of reasonableness under the groundwater doctrine as developed in the decisions of several states does not depend on comparison with other uses of the source of supply. A landowner engaged in a “reasonable use,” generally interpreted to mean any traditional water or land use, is under essentially no constraints with regard to the impact of his use on others and can legally destroy his neighbor’s supply.

Although the reasonable use doctrine is similar to the absolute ownership doctrine with regard to groundwater use on the overlying land, the doctrines do produce different results with regard to export of groundwater for use on other land from which the water is pumped. The absolute ownership doctrine places no restriction on place of water use, but one of the general principles of the reasonable use doctrine as it has been developed in other jurisdictions is that use is limited to the land from which the water is taken. This principle has been the greatest application in situations where municipal water supplies are pumped from parcels of outlying land and piped into urbanized areas.

Most of the groundwater decisions of the Virginia Supreme Court have involved coal mining operations that interfere with groundwater supplies available to other parties, either on overlying or adjacent land. The principle has been well-established that such interference does not produce liability where the mining is accomplished by traditional, non-negligent methods. The primary exception to this position of no liability consists of the situation where injury to a water supply is associated with the collapse of the land surface as a result of inadequate subsurface support.

The Virginia court has never decided a case involving interference between wells, but the issue has been discussed in cases involving mining interference with groundwater supplies. These cases indicate that the landowner is free to pump water for use on his own land without regard to the impact on others and that the injured groundwater user has no recourse but to sink his own well deeper. Should the pumping involve export of water for use at another location, it appears probable that the prohibition of the reasonable use rule would be imposed. The language in Clinchfield Coal Corp. v. Compton suggests that the Virginia court views this widely accepted qualification of the groundwater right as a basic feature of the reasonable use doctrine. The Virginia court has not explicitly accepted the reasonable use doctrine, but the court has indicated that the trend of modern opinion is in favor of this rule.

Although pumping of groundwater for export and use at another location has never been considered by the Virginia court, the issue was the subject of a suit in the Circuit Court of Nansemond County (now the City of Suffolk) in 1966. The suit was brought
by the Board of Supervisors of Nansemond County for the purpose of obtaining an injunction to prohibit construction and use of municipal water supply wells by the City of Norfolk on property located within the county. The circuit court declined to enjoin construction of the wells but did temporarily enjoin Norfolk from pumping water from the wells for the purpose of using it in the water supply system of the city. Prior to the expiration of the injunction in 1967, the county and city resolved the issue by means of mutual agreement.35

Diffused Surface Water
Diffused surface water law traditionally has focused on rights of disposal and prevention of property damage. It places considerable emphasis on defining liability for injury associated with modifications of natural drainage patterns. Virginia purports to follow the common enemy doctrine in determining such liability.36 This doctrine theoretically allows each landowner to protect his property without liability for adverse impact on others, but the doctrine has been modified in Virginia and most other states where it is given nominal acceptance to substantially limit the right to interfere with runoff.

With regard to allocation, the following statutory provision is applicable:

Diffused surface waters may be captured and impounded by the owner of the land on which they are present and, when so impounded, [they] become the property of that owner. Such impoundment shall not cause damage to others. . . .37

Such impounding structures are subject to rules and regulations pertaining to safety developed by SWCB.

Management Issues Related to Withdrawal

Conjunctive Management of Surface and Groundwater
Virginia water law traditionally has not recognized the interrelationships among the various phases of the hydrologic cycle but instead has consisted of separate legal theories based on a categorization of water as to source. Thus, common law allocation doctrines for surface and groundwater are substantially independent.

The fact that the leading theory for both stream and groundwater allocation is identified as the “reasonable use” concept suggests similarity in water rights in the two sources. However, this similarity is more apparent than real. While the riparian concept of reasonable use restricts the amount of permissible water use on the basis of adverse impact on others sharing a common source of supply, the groundwater concept of reasonable use contains no such restrictions for traditional on-site uses. This fundamental difference in surface and groundwater rights poses a substantial impediment to conjunctive management.

The obstacles to joint management have been compounded by a perpetuation of separate legal treatment in statutory enactments. The only water allocation statute enacted in Virginia to date applies solely to groundwater38 and makes no provisions for possible interrelationships with surface waters. Thus, the existing institutional framework does not appear conducive to conjunctive management.

Interbasin Transfer
Although Virginia generally is considered to be a water-abundant state, disparities in geographic patterns of water availability and population distribution have created water supply shortages, especially in the populous northern and southeastern sections of the state. These shortages have given rise to proposals for major transfers of water from areas of relative surplus to areas of projected deficit.

Consideration of interbasin water transfers gives rise to several unresolved institutional issues. The absence of an administrative water allocation program in Virginia means that no agency has authority to determine the legal status of a proposed diversion. Several federal, state, and local governmental entities exercise controls over various aspects of such a diversion project, but none of these required approvals constitute final authorization for a transfer. Nevertheless, several approvals are mandatory, creating the potential for prohibition of project construction. In addition to traditional federal and state controls relative to structural aspects of water transfer projects, local controls may apply. The principal local constraint is the requirement for consent of the political subdivision in which extra-territorial water supply projects owned by other political subdivisions are to be located.39 The potential impact of this requirement is tempered by a provision for appeals where consent is denied to a special three-judge court.

Of course, the ultimate determination of the legality of interbasin transfer in Virginia must be determined by application of the riparian doctrine. Of primary interest with regard to the validity of interbasin transfer is the requirement of the doctrine that the water be used on riparian land. Since riparian land
in the broadest sense does not extend beyond the watershed of the stream in question.40 Interbasin transfers in general are not given legal recognition under the riparian doctrine. The Attorney General of the Commonwealth has recognized this conflict with the doctrine and has indicated the possible unlawful nature of interbasin transfers.41

The riparian doctrine has been pragmatically applied, however, and the principle that water must be used on riparian land has been modified to allow use on non-riparian land in the absence of injury to riparian owners.42 The question of injury, therefore, becomes a key issue in considering the legal status of any interbasin water transfer proposal. Such injuries could include the impact of the proposed diversion on lake drawdowns or on the availability of water for other uses, such as power generation or downstream use. The legal right of riparian owners to have natural lake levels maintained above some established minimum has been recognized, and diversions that substantially reduce levels so that property values are adversely affected have been held to be unlawful.43 However, this right may not be equally recognized with respect to artificial impoundments. In some states, the courts have given reservoir owners considerable freedom to fluctuate water levels.44 The Virginia court has never considered this issue.

The legal determination of whether the detrimental effects associated with any proposed diversion constitute injury in a legal sense may be influenced by the fact that the proposed use is non-riparian. In the case of riparian use, determinations of legal injury are guided by the flexible concept of "reasonableness," and a certain amount of detrimental impact may be recognized as lawful. In the case of non-riparian use, there must be no injury in order for the use to be lawful. This two-measure standard may serve as a significant constraint on non-riparian water use.

**Interstate Effects**

Interstate effects of water use and development have increasingly played an important role in water resources management in Virginia. Interstate problems primarily have involved the states of Maryland and North Carolina and the District of Columbia.

Apportionment of low flows in the Potomac River has constituted a major interstate issue. An agreement45 establishing a procedure for apportionment was signed in early 1978 by the U.S. Army Corps of Engineers, the states of Maryland and Virginia, the District of Columbia, the Washington Suburban Sanitary Commission, and the Fairfax County Water Authority. The formula for dividing the flow is based on the ratio of the average daily winter use of each user to the average daily winter use of all users. This ratio is applied to the amount of water available in the Potomac (after deduction of a minimum flow requirement). This calculated value, less the amount available to each user by use of the maximum capacity practicable from all other sources, represents the allocated share of Potomac water for such user.46

With regard to Virginia’s capability to enforce the provisions of the agreement against users of water from the Potomac, the State Attorney General has indicated a potential problem due to the lack of state controls over withdrawals.47 To make the agreement enforceable, new legislation may be required.

Several water management issues have involved Virginia and North Carolina jointly. Prominent examples have included groundwater withdrawals from common coastal plain aquifers; the now-defunct Blue Ridge project on the New River; and more recently, proposals developed by the Corps of Engineers for increasing the water supply of Virginia’s Tidewater area that originally included alternatives involving interstate diversions from North Carolina. Due to North Carolina objections, two alternatives involving diversions from within North Carolina boundaries have been dropped from further consideration by the Corps.48 One of these alternatives, the proposed Chowan River withdrawal, represented the least cost solution in terms of needed investment in facilities.49 Most of the alternatives remaining under consideration, although consisting of proposed diversions from inside Virginia, involve streams that flow into North Carolina, creating the potential for additional conflict.

The existence of common water resource problems led the governors of Virginia and North Carolina to enter into a cooperative agreement40 in 1974. Activities encompassed in the agreement include water resource planning, reservoir development in river basins common to both states, and groundwater withdrawal in adjoining coastal areas. Provision is made for formulation of "... suitable institutional arrangements for interstate and federal cooperation on water resources matters that are of mutual interest to the two states."51 Although the committee formed to implement the agreement has been relatively inactive in recent years, new bi-state activity was initiated in 1978.

**Saline Water Intrusion**

Intrusion of saline water is a potential problem both
with regard to coastal streams and coastal plain aquifers. In the case of streams, interbasin transfers or other large-scale modification of flow conceivably could result in increased salinity in lower reaches of the stream with reduced flow. With regard to groundwater, concern exists that pumping will induce saline water into fresh water portions of coastal plain aquifers.

Since movement of saline water is the result of modification of natural hydrologic systems, control consists of application of allocation measures. Thus, protection of natural salinity patterns in streams is primarily a function of the riparian doctrine and other controls on development such as specification of flow releases from reservoirs. Control of subsurface saline intrusion is within the scope of the Groundwater Act of 1973. Both designated management areas are in regions of potential intrusion problems. Effective utilization of existing controls is restricted, however, by data limitations.

**Emergency Use**

Virginia has limited formal mechanisms specifically designed for emergency allocation of water. In the case of streamflow, this situation arises from the lack of allocation controls beyond the riparian doctrine. Groundwater allocation controls applicable in designated management areas do not contain provisions applicable to emergency situations.

The Virginia Emergency Services and Disaster Law of 1973 includes general provisions applicable to resource shortages. The governor is authorized to declare a "local emergency" as the result of a resource shortage upon petition of the local governing body when a sufficient threat of disaster exists. Once such a declaration is made, local governing bodies assume special powers to combat the disaster and to protect health and safety. A recent enactment authorizes restrictive ordinances during water supply emergencies and establishes a procedure for interjurisdictional allocation of water during emergencies in cases where system interconnections already exist.

**Instream Management Issues**

**Scenic River Protection**

A primary manifestation of concern for instream water use in Virginia's institutional structure for water management consists of the Scenic Rivers Act (SRA), which declares that preservation of certain rivers or sections of rivers for their scenic values is a beneficial purpose of water resource policy. The Act provides mechanisms for identification of these streams.

SRA provides for identification of potential scenic rivers by the Virginia Commission of Outdoor Recreation (COR). COR is responsible for making studies of streams and recommending to the governor and the General Assembly those which qualify for designation. The original scenic rivers study was accomplished with the aid of a consultant. From the more than 70 streams given consideration, 26 were recommended by the consultant for inclusion in the system. Subsequent review by the Commission increased the number to 29. The streams included in the original study were compared and evaluated through consideration of six factors: canoeing, fishing, notable natural features, notable historical and archaeological features, water quality, and natural conditions of banks and shoreland.

The primary effect of scenic river designation for a particular stream is that future project planning in connection with the stream must give full consideration to scenic resources before a plan for use and development is approved. One general prohibition applies to the construction of dams or other structures which impede the natural flow, unless the obstruction is specifically authorized by the General Assembly. This provision does not affect the sovereign power of the federal government to exercise control over navigable waters of the United States.

To date, COR has conducted detailed studies and recommended designation of several potential scenic rivers, but reaction to COR proposals has been mixed. Legislative approval has been given to sections of five streams: a 26-mile segment of the Rivanna River in Fluvanna County; a 27.5-mile section of Goose Creek and a 16-mile section of Catoctin Creek, both in Loudoun County; a 5-mile segment of the Appomattox River in Dinwiddie and Chesterfield counties and the City of Petersburg; and a 10.8-mile reach of the Staunton River in Campbell and Halifax counties. Some of the COR proposals were never officially considered by the legislature due to lack of formal introduction as proposed legislation.

Implementation of the scenic rivers program has proven to be controversial due to the basic confrontation between preservation and development interests. Opposition to scenic river proposals has often been voiced within the area of the stream under consideration due to concern over possible economic loss resulting from constraints on property development. Local support has been greatest in those situations where scenic river designation has been cast in the role of the lesser of two evils, for example, where an impoundment project has been proposed.
Maintenance of Low Flows
Another fundamental aspect of water law relative to instream use is the maintenance of minimum flows. Concern for protection of low flows is expressed in previously discussed legislative guidelines for development of state water policy.

One mechanism for implementation of these policy provisions consists of state control over reservoir operation. Two independent provisions for approval of reservoir releases exist:

1. State Water Control Board authority to certify that discharges will comply with water quality requirements;\(^59\) and
2. State Corporation Commission authority to regulate hydroelectric dams and other dams in certain types of waters.\(^60\)

The potential for conflict between these provisions was realized when the two agencies attempted to prescribe different minimum releases from a proposed Virginia Electric and Power Company reservoir on the North Anna River. The Attorney General of the Commonwealth resolved the conflict by determining that SCC authority is superior to that of SWCB in situations of concurrent jurisdiction.\(^51\)

With the exception of control over reservoir releases, there is no direct administrative mechanism for preservation of minimum flows due to the non-existence in Virginia of an administrative program for streamflow allocation. Of course, the riparian doctrine does provide a degree of protection through its requirement for sharing of available water among riparian landowners.

Public Access
Interest in the legal aspects of the public access question in Virginia has increased substantially in recent years. One significant reason for greater interest is the establishment of the previously discussed state scenic rivers system intended to protect certain streams from development, particularly dam construction. Implementation of this program has been controversial with riparian landowners concerned with restrictions on property use.

A second development responsible for increased interest in the issue of public versus private rights is the construction on the Jackson River of the Gathright Dam, a Corps of Engineers project that is expected to create a downstream cold water fishery in a stream traditionally considered to be private in nature. The downstream fisheries effect is an interesting aspect of the project since it has been viewed as mitigating the loss of upstream fisheries and wildlife values due to construction of the reservoir. The losses from reservoir construction have been considered particularly severe by fishermen and hunters due to the fact that most of the area to be inundated consists of a state wildlife management area noted for its exceptional trout fishery and population of deer and turkey. Therefore, the public access conflict with regard to the downstream fisheries enhancement aspects of the Gathright project promises to become a highly controversial issue.

It is an interesting coincidence that the Jackson River is also the subject of the only Virginia court case to date concerning public recreation rights in streams. This 1955 case, Boerner v. McCallister,\(^62\) arose as a suit by a landowner to enjoin another party from fishing in the portion of the Jackson River flowing through his property. The fisherman had fished in the stream at the location in question on numerous occasions and maintained that the public possessed this right of use. On the basis of its analysis of the stream’s navigability and the ownership of the streambed, the court disagreed with this position and prohibited further fishing expeditions.

With regard to the navigability issue, an important question in need of consideration is the matter of what criteria to use for classifying a given stream as navigable or non-navigable. An additional concern is whether recreational pursuits such as canoeing and fishing come within the accepted meaning of the term “navigation.” This latter concern is of primary significance in any situation where the bed of a navigable stream is privately owned.

The question of what constitutes a navigable stream has been subjected to two different developments—one for the purpose of defining the extent of federal jurisdiction and another primarily at the state level of government for purposes of determining public rights and questions of bed ownership. Some of the states have accepted a very broad definition of navigability that includes all streams that are susceptible to recreational boating such as canoeing.\(^63\) By defining navigability itself in terms of potential for recreational use, these states have removed many of the restraints on public access. However, the Virginia Supreme Court has not adopted this position, but to date has defined navigability solely in terms of a stream’s capacity for commercial use.\(^64\) Application of this criterion obviously results in fewer streams being declared navigable than would application of the recreation standard.

In addition to this narrow view of what constitutes...
a navigable stream, the Virginia court in the Boerner case leaned toward acceptance of the position that navigation itself is limited to commercial activity, at least where the bed of a stream is in private ownership. It should be emphasized that the Virginia court has never specifically held that navigation does not include recreation, and it therefore could adopt at some future date the position that recreation is included without having to overturn established precedent. But to date, the decisions of the court have not used the navigability issue in support of public access for recreation. Therefore, the question of bed ownership takes on added significance.

Evaluation of the bed ownership issue requires consideration of legislative pronouncements on the subject, the system of land grants in effect during colonial times and after independence, and judicial interpretations of these grants. With regard to legislative provisions, of primary interest is a statute adopted in 1780 with respect to the eastern part of the state and extended to the western portion in 1802 providing that all ungranted streambeds would remain the property of the Commonwealth to be used by the public. Thus, the beds of both navigable and non-navigable streams on lands transferred from public to private ownership after these dates would not have been transferred but would have remained public.

Under the English common law, the Crown held title to the beds of all tidal waters while the beds of all non-tidal waters were owned by adjoining landowners. The English common law in large part was adopted in Virginia upon independence and continues to apply in a variety of areas. With regard to ownership of land under water, the English rule is still in effect where tidal waters and non-navigable freshwater streams are involved.

It is well-established in the law of the state that riparian property includes the beds of non-navigable streams, provided, of course, that the land was granted prior to the 1780 and 1802 statutory dates. Where the stream forms a property boundary, each owner takes to the center of the stream. If one owner holds title to land on both sides of a non-navigable stream, he owns the entire streambed at that point. In the case of tidal waters, it is well-established that subaqueous lands are publicly owned with the limits of riparian property established by statute at low water mark.

However, ownership of the beds of non-tidal navigable streams is not as well-defined. Upon independence from England, the law in some of the colonies underwent modification that changed the English rule of private ownership of all beds of non-tidal waters. Due to the greater occurrence and significance of non-tidal navigable rivers in the colonies, their beds came to be viewed as public in nature, as were the beds of tidal waters.

The ownership of the beds of navigable streams that are non-tidal is an important issue regarding public recreation rights in Virginia. One reason for this significance is the existence of a substantial number of such streams. Secondly, the Virginia court has indicated that the right of navigation may not include the right of fishing where beds are privately owned. The possibility of this position's being adopted has increased the potential importance of the ownership issue.

In spite of this significance, however, Virginia does not appear to have established a well-defined position with regard to the ownership of the beds of non-navigable streams. Several Virginia decisions indicate that the beds of non-tidal navigable waters are publicly owned, but the issue has not been definitively resolved. This aspect of the public rights issue is one of the most troublesome.

Land-Use Management Issues

Land-Use Constraints
Authority for land-use planning and control in Virginia traditionally has been delegated to local political subdivisions. Prior to 1975, state law authorized the governing body of each county and municipality to create a planning commission, but creation of such commissions was not specifically required. The 1975 session of the General Assembly amended the existing legislation to require their creation by July 1, 1976. A local planning commission is to consist of at least five but not more than 15 members appointed by the governing body of the county or municipality.

The principal duty of each local planning commission is the preparation of a comprehensive plan for the physical development of land within its jurisdiction. Statutory guidelines for such plans provide for a survey of natural resources during plan preparation and specify that the plan may include the "... designation of areas for various types of public and private development and use, such as different kinds of residential, business, industrial, agricultural, conservation, recreation, public service, flood plain and drainage, and other areas..." This provision appears to authorize incorporation of water and other natural resource considerations into the planning
process but leaves such matters largely to the discretion of the local commissions.

Land-use planning and implementation of controls has been delegated to counties and municipalities, creating a significant role for local government with respect to water resource management. Regulation of land use is an essential element of management since effective alternative mechanisms to accomplish certain program objectives do not exist.

Belated recognition has been given to the fact that flood damage abatement programs must encompass controls over floodplain utilization as well as structural measures to control stream flow. Current interest in non-point sources of water pollution attests to the importance of land-use practices to water quality protection. These and other relationships between water and land management indicate the potential significance of local authority concerning land use.

**Protection of Recharge Areas**

Specific legal mechanisms for protection of groundwater recharge areas do not exist. It would appear that such control measures could be incorporated into local land-use measures, but state government has no direct authority in this area. Problems indicating the need for increased protection of recharge areas have not arisen in Virginia.

**Reservation of Reservoir Sites**

As in the case of protection of groundwater recharge areas, reservation of reservoir sites must be accomplished within the general legal framework of local land-use controls as supplemented by land acquisition as needed. Acquisition of land for future use as a reservoir site would generally not be undertaken by state government under existing institutional arrangements since the state is not involved in the direct ownership and management of major reservoir facilities.

**Property Damage**

Several elements of Virginia's water law reflect concern for reduction in property damages from flood waters and surface runoff. The state legislature has declared a policy to reduce flood damage through management of floodplain use. Authority for implementing controls applicable to floodplain use is vested in local government, but the state provides coordination and assistance through SWCB to encourage appropriate local action. A goal of this effort is to enable all local governmental units subject to recurrent flooding to qualify for participation in the National Flood Insurance Program.

Legal controls over individual activities increasing damage from floodwater or surface runoff have been developed in the common law. In the case of streams, structures that impede the flow and result in flooding generally are unlawful, except where damage results from unprecedented floods that could not reasonably have been anticipated. This restriction on obstructing stream flow applies to flood protection works, and the landowner who constructs such works may be liable for resulting injury to others. Common law doctrines applicable to surface water injury have been discussed previously.

**Shoreline Protection**

The General Assembly has recognized shore erosion as a problem that affects all the citizens of the state and has declared a state policy of effecting solutions to the problem. Property encompassed within the policy declaration includes all land bordering a large body of water, with specific application to “... all tidal rivers in Virginia, the Virginia portion of the Chesapeake Bay shoreline, and the Virginia portion of the Atlantic Ocean shoreline.”

In addition to this specific program, other general erosion control programs have potential application to shoreline protection. Of primary interest in this regard are the soil and water conservation district programs and the erosion and sediment control programs of local government.

**Wetlands Protection**

Noting the consequences of continuing wetlands destruction, the Virginia General Assembly in the 1972 Wetlands Act declared their preservation to be the public policy of the Commonwealth, with provision for accommodation of necessary economic development in a manner consistent with such preservation. The Wetlands Act specifies that development in “Tidewater Virginia,” defined to include 31 counties and 16 cities, “... shall be concentrated in wetlands of lesser ecological significance, in wetlands which have been irreversibly disturbed before July 1, 1972, and in areas of Tidewater Virginia apart from wetlands.” As used in the act, the term “wetlands” generally includes all land contiguous to mean low water and bounded by an upper elevation 1.5 times the applicable mean tide range above mean low water and upon which certain specified vegetation is growing on or after July 1, 1972. In the case of Back Bay, the North Landing River, and their tributaries, the definition applies to all marshes subject to regular or occasional tidal flooding and upon which certain vegetation is growing.

Control over wetlands has been formulated as a zon-
ing ordinance because the land involved lies above mean low water and therefore is in private ownership. Any attempt to regulate use must give consideration to property rights as protected by the Constitution. Zoning responsibilities have traditionally been delegated to the localities in the Commonwealth, and this trend has been followed in this situation. However, provision is made for state administration of the wetlands zoning ordinance in the event that a particular political subdivision does not assume this responsibility.

Guidelines have been developed by the Commission on the basis of studies conducted by the Virginia Institute of Marine Science to assist localities in regulation of wetlands use. In addition to continuing responsibilities with regard to guidelines for wetlands use, a principal role of the Marine Resources Commission involves review of decisions by the wetlands board in the situation where the wetlands zoning ordinance is adopted by a county, city, or town. The Commission may affirm, modify, or reverse the decision of the wetlands board, with an appeal to the courts available.

Parties who are authorized to request review of the actions of a local wetlands board are limited to applicants, governing bodies of political subdivisions where the wetlands are located, and property owners within the governmental subdivision where the wetlands are located. No provision is made for the intervention of interested individuals or organizations from the state as a whole.

The Commission is directly responsible for the administration of wetlands zoning ordinances in any county, city, or town until the ordinance is adopted. A person who proposes to conduct an activity requiring a permit must make application directly to the Commission in this situation.

**Conclusion**

The foregoing analysis has identified several areas of deficiency in the institutional framework for water resources management in Virginia. These deficiencies vary in form and significance. Some of the more urgent areas in need of attention include:

1. Basic water allocation mechanisms;
2. Conjunctive management of surface and ground water;
3. Interstate water management;
4. Protection of instream values;
5. Interrelationships between water and land management; and

6. Public access.

With regard to water allocation mechanisms, creation of an administrative program for analysis and evaluation of proposals for major water resource developments is an urgent need. At present, there is no effective mechanism for review of such proposals from a statewide perspective. The absence of this machinery makes rational evaluation prior to decisions on water projects impossible and creates much confusion on the part of both proponents and opponents of proposals.

Integration of the law of watercourses with that applicable to ground water is essential to comprehensive management of the resource. Although separate treatment may be feasible and even desirable under certain conditions, the absence of mechanisms for coordination ignores basic physical relationships and constitutes a serious flaw in the legal framework. The trend to apply separate law that was initiated in the common law and perpetuated in statutory enactments should be reversed and conjunctive management established.

Recent events with regard to water resource development proposals within Virginia emphasize the need for institutional mechanisms for consideration of water management issues having interstate aspects. Several sources of both surface and ground water are of mutual concern to Virginia and a neighboring state. North Carolina has been involved in the greatest number of recent interstate management questions. Since one state should not expect to exercise total control over the water of an interstate source, institutional mechanisms for evaluation of alternatives and resolution of conflicts are essential. A first step should consist of re-activation of the Virginia-North Carolina water management agreement.

Protection of instream values must be a fundamental component of the state’s water management program. The existing scenic rivers program is an appropriate first step, but the policy enunciated by the enabling legislation that streams possessing exceptional natural values constitute a statewide value has not been fully recognized in the implementation of the program to date. In addition, there is need for protection of minimum flows adequate to preserve instream values. Such protection must be an element of the state’s water allocation program and should be based on a thorough assessment of minimum flow requirements for biological resources and other instream uses.

Closely related to the need for protecting instream
values and water use is the need for better definition of the rights of public access. The interests of a substantial segment of society indicate a need for greater rights of access than have been given recognition by the Virginia Supreme Court to date. Existing law leaves several basic public access questions unresolved, creating considerable uncertainty that can be only be resolved by further development of the law.

The traditional separation of water management and land-use control between state and local levels of government constitutes a significant impediment to an effective water resources management program. Numerous management concerns such as reservoir site protection, flood damage reduction, and water quality protection are actually land-use problems to a large extent. State government is severely handicapped by the absence of authority in some of these areas, suggesting the need for re-evaluation of certain delegated authority, especially with regard to activities having water resource impacts or other effects that extend beyond local boundaries.

The Time To Act is NOW

The next several months will be critical ones in the evolution of water law in Virginia. Possible deficiencies in the present system have led to the creation of a State Water Study Commission to review existing law, and substantial changes in the institutional framework for quantity management may result. The possibility exists that the long-standing judicial allocation measures may be largely replaced by an administrative allocation system placing greater weight on economic analysis of water use. Whether the current study results in retention or alteration of existing law, the decisions reached are likely to establish the course for water allocation in Virginia for a substantial period into the future.

The modification of water allocation principles is a fundamental change potentially affecting all Virginians. Many basic issues are involved. Provisions relative to inter-regional transfers of water will have an effect on state development patterns, and procedures for balancing the interests of the affecting regions must be developed. Water allocation procedures must give consideration to all sectors of the economy in order to avoid undesirable shifts and dislocations, and environmental factors must be weighed with economic needs. These and other issues must be incorporated into the Commission's deliberations prior to completion of its final report due at the end of 1979. Your concerns are important and should be expressed to the Commission. It is your water and your future that are at stake. Names of Commission members are provided.

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<th>State Water Study Commission</th>
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<td>The Hon. J. Lewis Rawls, Jr. (Chairman)</td>
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Footnotes

5. Hite v. Town of Luray, 175 Va. 218, 8 S.E. 2d 369 (1940).
6. See, e.g., Id., p. 226.
14. 11 Hennings Statutes, p. 450 (1784).
16. Id.
18. Id., sec. 3.D.
23. Id., sec. 62.1-44.95.
27. Id., sec. 62.1-44.87.
30. Id., sec. 62.1-44.100(e).
34. Clinchfield, supra, note 31.
35. Agreement between the City of Norfolk and the County of Nansemond, April 1, 1967.
38. Groundwater Act, supra, note 22.
40. Town of Gordonsville, supra, note 2, p. 556.
42. Virginia Hot Springs, supra, note 1, p. 467.
43. See, e.g., Taylor v. Tampa Coal Co., 46 So. 2d 392 (Fla. 1950); Bohannon v. Conlen Bend Drainage Dist., 240 Mo. App. 492, 208 S.W. 2d 794 (1948).
46. Id., article 2.C.2.
51. Id., p. 2.
53. Id., sec. 44.146.16(6).
59. Authority created by letter from Linwood Holton, Governor of Virginia, to David Dominick, Commissioner, Federal Water Pollution Control Administration (pred-
64. Ewell v. Lambert, 177 Va. 222, 13 S.E. 2d 333 (1941).
65. 10 Hen. (Va.) Stat. (1780), p. 226. Qualifying language in the original statute may have limited its applicability to streams actually subjected to public use until the provision was deleted with the publication of the Code of 1873.
70. City of Hampton v. Watson, 119 Va. 95, 89 S.E. 81 (1916); Taylor v. Commonwealth, 102 Va. 769, 47 S.W. 875 (1905).
74. Id., sec. 15.1-446.1.
77. Director General v. Bryant’s Adm’r., 127 Va. 651, 105 S.E. 389 (1920).
80. Id., sec. 21-11.17.
82. Id., sec. 21-89.1 et seq.