Interbasin Transfer in a Riparian Jurisdiction

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Lack of water in the United States traditionally is viewed as a problem of the western states. In the more humid East, where annual rainfall consistently exceeds thirty inches, acute water shortages are uncommon. Accordingly, eastern states seldom have considered or implemented large scale water diversions to augment water supplies. The major exceptions involve water importation to supply metropolitan areas, most notably New York and Boston. Additional impetus to augment supply has resulted from extraordinary climatic conditions and has generated substantial controversy. For example, the 1980 drought in Virginia precipitated a political battle between the cities of Norfolk and Suffolk over groundwater. Both cities wished to tap deep aquifers underlying land in Suffolk. Fearing long-term adverse consequences of pumping by Norfolk, Suffolk tried to prevent Norfolk from obtaining a permit for its Suffolk well site. Lawsuits and a political donnybrook ensued. This effort at preventing ground water exportation

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1. NATIONAL WATER COMMISSION, WATER POLICIES FOR THE FUTURE 3 (1973) [hereinafter cited as NWC].

2. New York City imports water from the Delaware River; Boston imports water from the Connecticut River. Both of these out-of-basin diversions have been the subject of litigation. See New Jersey v. New York, 283 U.S. 336 (1931) (Delaware River); Connecticut v. Massachusetts, 282 U.S. 660 (1931) (Connecticut River).


5. See Richmond Times Dispatch, Oct. 25, 1980, at B-1, col. 4. The Suffolk City Council denied drilling permits to Norfolk while approving drilling permits sought by its own public utility department.

6. SPECIAL REPORT, supra note 3, at 6. Suffolk did not intend to conserve the resource; Suffolk sought permits to construct and pump deep wells in the same aquifer “with the aim of selling the water to Norfolk and other localities as the need arose.” Id. This entrepreneurial spirit may be the best course of action for water exporting areas to pursue. See
is reminiscent of western water wars. More recently, the neighboring city of Virginia Beach proposed a number of possible interbasin transfers of surface water to alleviate its chronic water shortages.

Even in non-drought situations, expansion of water supplies is becoming a more pressing issue in the East due to several factors, of which the foremost is increased demand for water. Nationwide projections for 1985 indicate a thirteen percent increase in consumptive water use over 1975 levels. By the year 2000, anticipated water use will be twenty-seven percent greater than in 1975. The causes of this increasing demand include increased population, expanded water use for industrial purposes, and increased crop irrigation in all regions of the nation. In the East, adequate supplies exist to meet this demand, though local redistribution of water undoubtedly will be necessary. As these subregional shortages necessitate redistribution to expand local supply, interbasin diversion of water will be among the alternatives considered.

Diversions of water in the West, where legal doctrines facilitate diversion, are the subject of considerable study. In contrast, infra notes 92-95 and accompanying text.

9. See United States Water Resources Council, The Nation's Water Resources 1975-2000, at 29 (1979) [hereinafter cited as NWC Projections]. These figures are somewhat more conservative than the estimate of the National Water Commission made only six years earlier. The earlier study projected that consumptive use in the year 2000 would be 23% higher than the 1980 figure and that the growth pattern would continue unabated for another 20 years. The use in 2020 was expected to be 50% greater than the 1980 level. See NWC, supra note 1, at 11.
10. See NWC Projections, supra note 9, at 5, 29.
11. Id. at 29-41. The industrial use of water includes cooling electric generation facilities. Vast quantities of water are required for this use, but almost all of it is returned to the source from which it is withdrawn. Id. at 38. In contrast, irrigation withdrawals are far smaller, but consume much more water. Id. at 36.
12. See, e.g., statement of Professor Leonard Shabman, a member of the Virginia Water Study Commission: "Even within regions of Virginia there's plenty of water . . . . The controversy is how we share the plenty, not how we divide up the scarcity." Newport News Daily Press, Aug. 19, 1982, at 27, col. 4.
13. Id.
14. The prevailing legal doctrine in the West is prior appropriation, which gives quantified priorities to water users. The requirement that water remain in the basin of origin was dropped at an early date. The most prominent example of this development is Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).
considerable uncertainty surrounds the prospect of diversions in the East. This Article explores some issues pertaining to interbasin diversion of water in the East. The major issues surveyed are the physical and political aspects of interbasin transfers and the legal doctrines that govern them. Intrastate transfers are studied separately from interstate transfers to delineate unique problems that attend the latter. When possible, the Article will focus on Virginia as a state that has importing regions where interbasin transfer is a possibility.¹⁶

**The Physical and Political Aspects of Interbasin Water Transfers**

**Useable Supply of Water**

In general, useable water comes only from streamflow and accessible ground water. These waters serve a myriad of human purposes including domestic use, irrigation, manufacturing, and cooling. Water used for these purposes is measured in one of two ways: by measuring the amount of water withdrawn or by measuring the amount of water consumed. Consumptive use, as the name implies, consumes the water as part of the activity. Withdrawals far exceed consumption because most forms of water use return the bulk of the water to the streams from which the water was taken.¹⁷ Once returned to the stream, water may be withdrawn again, and either consumed or returned to the stream.

The largest consumptive use of water in the United States is irrigation of crops.¹⁸ Cooling of electric generation facilities, although consuming a very small percentage of the water withdrawn for that purpose, is the next largest consumptive use. This results from the vast quantity of water used for this purpose.¹⁹ Another major consumptive user is industry, although different processes require different amounts of water.

Sound planning and policy require that limits be set on the

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16. The Article examines both intrastate and interstate importation.
17. See generally NWC, supra note 1, at 30-31.
18. See NWC PROJECTIONS, supra note 9, at 28-29.
19. Id. at 28.
amount of water withdrawn or consumed in a region because maintaining ground water at a particular level and maintaining a substantial portion of natural streamflow serve many critical functions. In eastern Virginia, for example, streamflow prevents saltwater intrusion into upstream areas. Streamflow flushes sensitive estuarine areas and prevents them from becoming excessively saline, thereby maintaining their productivity. It also supports vital in-stream uses including power generation, fishing, navigation, and recreation, and is essential to other, less apparent human water uses such as waste disposal, where the assimilative capacity of a stream depends on its flow. Similar considerations caution against limitless ground water pumping: water supply rationally cannot be expanded by bleeding dry local streams and indiscriminately pumping available ground water.20

Increasing Supply—The Options and Their Constituencies

When local water resources appear to be insufficient to meet local demand, the search for increased supply begins. Government typically plays an important role in the search by seeking alternate water sources,21 by creating a quasi-utility that attempts to increase supply,22 or by passing laws that facilitate interbasin transfer.23 The means of alleviating water shortages are limited, and the

20. Substantially increased ground water pumping may interfere with existing wells by lowering the water table. Surface subsidence can occur under certain subsurface conditions. Finally, surface flows in some areas are linked to ground water, and large-scale pumping can affect surface flow in streams or damage associated wetlands by depriving them of water. See generally D. Miller, Water at the Surface of the Earth 414-16, 426 (1977).

21. In the West, for example, the Federal Bureau of Reclamation built many of the irrigation projects and then transferred management responsibilities to locally formed irrigation districts.

22. See, e.g., J. Sayre, A Case Study of the Windy Gap Project (June 9, 1982) (paper delivered to Conference on New Sources of Water for Energy Development and Growth: Interbasin Transfers, Natural Resources Law Center, University of Colorado School of Law) [hereinafter cited as Windy Gap Materials].

23. These laws include granting power to condemn lands over which diverted water must pass, granting utility status to companies that build or operate water projects, and attempting to increase the transferability of the water rights. See generally Waters and Water Rights §§ 300-307, 620.1-620.5 (R. Clark ed. 1970).

In 1982 the Interbasin Transfer Act, House Bill 502, was introduced to the Virginia General Assembly but was withdrawn pending further study. The bill would have required a permit from the State Water Control Board to commence interbasin diversions of more than 500,000 gallons per day. The permit, issued after a full public hearing, would not have pre-
response to each is predictable. One obvious alternative source, sea water desalinization, is prohibitively expensive.\textsuperscript{24} Locating and tapping new ground water aquifers is an uncertain endeavor that cannot be relied upon to provide large supplemental water reserves.\textsuperscript{25} Conservation measures may save significant amounts of water,\textsuperscript{26} but are difficult to implement because conservation usually requires concerted efforts by many individuals. Despite a number of obstacles, transferring additional water into the basin, which involves moving water via pipelines or canals from one watershed to another, is often the most attractive option.\textsuperscript{27}

Interbasin diversion, even when well-conceived and executed, is expensive and degrading to the environment.\textsuperscript{28} Additionally, implementing interbasin transfers is politically complex. Despite these drawbacks, interbasin transfer possesses a number of advantages as a solution to water shortage problems. Interbasin transfer increases supply without palpable losses to any group of individuals. The "losers" are located in a watershed selected as the area of origin precisely because that area has a current water surplus. The transfer promotes efficient water use by preventing the "loss" of water which would otherwise flow into the ocean "unused."\textsuperscript{29} Pro-

\begin{itemize}
\item\textsuperscript{24} See U.S. DEPT\ OF THE INTERIOR, OFFICE OF WATER RESEARCH & TECHNOLOGY ANNUAL REPORT—1979, at 79-82; Botha, \textit{Desalination: A Practical Process}, 4 I.M.E.S.A. (Johannesburg) 43, 45, 47 (1979).
\item\textsuperscript{25} Drilling for water in some areas of the nation may not be successful due to non-uniform subsurface strata. In areas having large, easily tapped aquifers, major new pumping efforts by one user may affect the water table level and interfere with pumping by others already using the same ground water source. Finally, massive pumping efforts simply may fail because of a lack of reserves or an inability to tap them adequately. See supra note 20 and accompanying text. See generally 4 NWC PROJECTIONS, supra note 9, New England Region at 17, 19; Mid-Atlantic Region at 18; Ohio Region at 13, 16; Missouri Region at 13; Rio Grande Region at 16-17; Pacific Northwest Region at 17-18; California Region at 21-22.
\item\textsuperscript{26} See 1 NWC PROJECTIONS, supra note 9, at 21.
\item\textsuperscript{27} See infra notes 33-35 and accompanying text.
\item\textsuperscript{28} For a thorough discussion of the legal and practical implications of water transfer and diversion, see Comment, \textit{The Legal Aspects of Appropriative Water Rights Transfers in California}, 11 U.C.D. L. Rev. 441, 451-54 (1978).
\item\textsuperscript{29} The concept of unused water is inherently ambiguous. All water not diverted and consumed can be viewed as "unused." Realistically, water left in the stream is also used for important purposes such as maintaining sufficient streamflow for navigation, fishing, and the like. Sound water planning should recognize these uses.
\end{itemize}
ponents of interbasin transfer also may justify it by identifying benefits that occur in places other than the importing region. For example, if a dam is needed to store water for the transfer, project proponents could include recreation afforded by a dam’s reservoir among the project’s benefits. Furthermore, if the dam can be used as a means to generate electricity, this too, will be counted as a benefit.

Residents of the area of origin do not always oppose transfers. To the extent that the water exceeds both current and foreseeable future needs, the project is not a threat to the area of origin. Moreover, benefits often will accrue to the region, including increased employment in the construction phase and economic growth accompanying collateral benefits such as recreation.

Losses that do occur as a result of interbasin transfers are primarily environmental. Formerly free-flowing streams may lose their ability to support some types of sport fishing. If the transfer requires a reservoir, the reservoir waters will inundate a valley, thus prohibiting activities such as farming and forestry. Sedimentation behind the reservoir’s dam may result in accumulation of toxins. The transfer itself will require either a substantial pipeline or a canal, with the attendant environmental costs concentrated in what is usually a relatively unspoiled area. The energy required to raise the water out of the basin of origin may be substantial, especially if the lift is great or the quantities large. Nonetheless, if demand for water in the importing area substantially exceeds supply, the benefits of transfer may outweigh the costs.

30. Often such a dam is required to provide for an intake capable of transferring substantial quantities of water. Similarly, augmenting supply may be a seasonal concern. The reservoir created by a dam may be useful in allowing maximum flexibility in timing the diversion.

31. If the project requires building a reservoir, the likely location will be the less-developed exporting region. See Plater, Reflected In a River: Agency Accountability and the TVA Tellico Dam Case, 49 Tenn. L. Rev. 747, 754-55 (1982).


33. See, e.g., J. Bulkley, S. Wright & D. Wright, Preliminary Diversion Study From Lake Superior to Missouri River Basin 9-10 (1982) (unpublished manuscript, a copy of which is on file with the author).

34. The Windy Gap Project, designed to bring water over the transcontinental divide onto the Eastern Slope of the Rockies near Denver, anticipates user costs of $1,000 per acre-
On a pragmatic level, the area of origin is ill-equipped to prevent an interbasin transfer because the choice to proceed with an interbasin diversion usually is a political decision. Assuming the proposed transfer is wholly intrastate, the importing region almost invariably enjoys more political power than the area of origin. The same factors of population density and economic development that generate demand for increased water supply translate into political advantages arising from a system of proportional representation and from the ability of well-focused economic interests to make themselves heard. If an interbasin transfer receives support from the area of origin as well as the area of importation, the only plausible constraints are expense and opposition due to environmental consequences of the project. Experience indicates, however, that these forces do not always prevent construction, at least in the long term. If western experience is any guide, federal subsidy is likely to alleviate the expense problem.

Interstate interbasin transfers are politically more complex than intrastate transfers. No longer is the political decision solely in the hands of a legislature whose constituency is likely to see the transfer as either wholly good (substantial benefits to both regions) or

foot of water. One of a handful of projects based on a user-pay concept, the viability of the project is due to the tremendous demand for water on the Eastern Slope. See generally Windy Gap Materials, supra note 22.

35. See supra notes 21-23 and accompanying text.


37. Cf. J. SAX, DEFENDING THE ENVIRONMENT: A STRATEGY FOR CITIZEN ACTION (1971) (advancing the view that monied interests are persistent advocates of projects not easily rebuffed by a single defeat). See also Plater, Reflected in a River: Agency Accountability and the TVA Tellico Dam Case, 49 TENN. L. REV. 747, 749, 753, 760-64 (1982) (chronicling the saga of the Tellico Dam which, although it was economically unsound, ecologically unsound, and highly visible in the political process, was nevertheless built due to the concerted efforts of a few individuals).

38. Many major water projects are heavily subsidized by the federal government. Frequently, the subsidy will be in the form of a long-term construction loan bearing an extremely low interest rate. See, e.g., Brownstein & Easton, Bailing Out the West, 3 THE AMICUS JOURNAL 6 (1982).
at least good on balance (some lesser detriment to the area of origin). Instead, if few or no benefits accrue to the exporting area, opposition to the transfer is likely to be raised by the state of origin acting through its legislative or executive branches. The interstate nature of the transfer also portends a role for the federal government. Should it enter the fray, the federal government's position cannot be predicted by the relatively simple calculus that was assumed to exist within a single state. The interstate context is also more complicated because the legal system imposes on the parties constraints that generally are absent in the intrastate arena. The remainder of this Article focuses on the legal aspects of interbasin transfers, beginning with intrastate transfers in a riparian jurisdiction such as Virginia, then culminating with an examination of the problems attending an interstate transfer.

**Intrastate Interbasin Diversion**

In the early 1970's, the National Water Commission prepared a series of studies of the key aspects of water policy. One of these studies concerned transfers of water rights. The study identified as a major impediment to such transfers state laws that make water rights appurtenant to the land. Thus, inquiry must focus on the extent to which state laws in the East bind water rights to riparian land and impede all transfers of water, especially interbasin transfers. Rather than speaking in general terms about state laws and canvassing the entire East, Virginia is chosen as an example of a state in which water rights are appurtenant to land. Thus, Virginia water law will be examined to determine whether interbasin diversions may occur in a riparian jurisdiction.

**Common Law Riparianism and Interbasin Transfers**

An individual enjoys status as a riparian owner by virtue of own-

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39. See supra notes 29-30 and accompanying text.
40. See supra notes 27-34 and accompanying text.
41. See infra notes 68-71 and accompanying text.
43. Id. at 25.
ing land that abuts a water body.\textsuperscript{44} In the eastern United States, a riparian owner's rights to the water on which he owns land are governed by the doctrine of reasonable use.\textsuperscript{45} Reasonable use usually allows use of the entire flow or the entire water surface, so long as the correlative rights of co-riparians are not infringed.\textsuperscript{46}

Interbasin transfers of water are not assimilated easily into a system of riparian rights based on reasonable use because the pivotal legal issue is usually whether diversion of the water for use on a nonriparian tract is a reasonable riparian use. A number of approaches for determining the reasonableness of a use exists ranging from a per se rule deeming unreasonable any use for the benefit of nonriparian land, to an ad hoc determination of whether the use is reasonable under the particular facts of the case.\textsuperscript{47} Regardless of the state's approach, out-of-basin diversion of water is unlikely to qualify as reasonable because the water does not return to the original watercourse for subsequent use by riparians.\textsuperscript{48}

Little Virginia case law exists exploring the question whether interbasin diversion of water qualifies as a reasonable riparian use of water. The absence of case law reflects, in part, the underlying historical reality that few occasions have arisen where water needs were pressing enough to require augmentation of local water sup-

\textsuperscript{44} Technically, riparianism refers to ownership of land along a river or stream. Landowners along lakes enjoy littoral rights. The bodies of law regarding riparian rights and littoral rights are virtually identical; therefore, riparianism tends to be employed as the generic term.

\textsuperscript{45} Whether the use is reasonable depends on the facts of each case. Reasonable uses might include irrigation, flotage, power generation, and cleansing. See G. Warvelle, Principles of the American Law of Real Property \textsection 49 (1909). See also Stein v. Burden, 29 Ala. 127 (1856) (water cattle); Filbert v. Dechert, 22 Pa. Super. 362 (1903) (supplying water for 900 asylum residents); Beach v. Sterling Iron & Zinc Co., 54 N.J. Eq. 65, 33 A. 286 (1895) (mining); Bullard v. Saratoga Victory Mfg. Co., 77 N.Y. 525 (1879) (running a mill); Kaler v. Campbell, 13 Or. 596, 11 P. 301 (1885) (culinary and other domestic purposes).

\textsuperscript{46} There are minor exceptions to the general rule. For example, the entire flow of the stream may be exhausted for domestic use without reference to the impact on co-riparians. See generally Town of Purcellville v. Potts, 179 Va. 514, 19 S.E.2d 700 (1942); Restatement (Second) of Torts \textsection 850 (1979).

\textsuperscript{47} For any type of water use, for example irrigation, it is possible to construct a calculus of the likelihood that a particular instance of that type of use will be found to be reasonable. Likelihood of being found reasonable is greatest when the use occurs on a riparian parcel itself. Likelihood of being found unreasonable is greatest when the situs of use is not only nonriparian, but located in another watershed. See, e.g., Stratton v. Mount Hermon Boys' School, 216 Mass. 83, 103 N.E. 87 (1913).
plies. The cases that do exist, although apparently opposed to interbasin diversion, do not fully dispose of the issue. Further, the cases are more than thirty years old and thus invite judicial reexamination to consider if changed conditions now make interbasin transfer a reasonable use of water.

The Supreme Court of Virginia decision most closely on point is Town of Purcellville v. Potts. The town of Purcellville, an upstream riparian on the two tributaries of a stream that flowed through Potts' land, erected dams on those streams and diverted the water from its natural channel into a reservoir. Thereafter the water was piped into the town for use. As a result, Potts was unable to use the stream for watering livestock, as had been his custom for many years. Potts thus sought an injunction to remove the dams from the streams. The court ordered the town to remove the dams, but stayed the order for a short time to allow the town to institute condemnation proceedings to acquire Potts' water rights.

The language of the opinion in Purcellville is strong and appears to announce a per se rule forbidding interbasin diversion:

While a riparian owner is entitled to a reasonable use of the water, he has no right to divert it for use beyond his riparian land, and any such diversion and use is an infringement on the rights of the lower riparian proprietors who are thereby deprived of the flow. Such a diversion is an extraordinary and not a reasonable use.

The opinion does not specify whether the town's diversion carried the water out of the watershed. The rule articulated by the court, however, is extremely stringent because it forbids diversion of water for use on any tract other than the riparian tract itself.

In tracing the origin of the per se rule in Purcellville, the court

50. 179 Va. 514, 19 S.E.2d 700 (1942).
51. Id. at 525, 19 S.E.2d at 704.
52. Id. at 521, 19 S.E.2d at 703.
53. It is possible, albeit unlikely, that all benefitted parcels were riparian to the stream. This would be true only if all those served by the town water system were themselves riparians. Even so, Potts would be damaged as a result of the bypass of his property.
relied on a well-known property treatise and an early Virginia case that likened diversion of waters to a private nuisance. Examination of these sources tempers the court's inflexible language. The treatise does not state a general rule about diversion of water, but addresses the rights of two riparians with respect to each other. Although both enjoy an equal right to reasonable use of the water, the lower riparian is to receive the water "without material diminution" of flow. The right to enjoin the upper riparian's diversion, however, is contingent upon the lower riparian suffering "prejudice." Prejudice is equivalent to actual harm and is an element of the lower riparian's cause of action in tort. The upper riparian's use, even if it diverted the entire stream, would not be enjoined in the absence of injury to the complaining riparian.

Similarly, the earlier Virginia case which deemed diversion a private nuisance implicitly required that the complaining riparian suffer actual injury caused by invasion of his rights. A private nuisance will be enjoined only if interference with plaintiff's use and enjoyment of his land is unreasonable and substantial. On its facts, then, Purcellville is properly decided. Potts suffered actual injury due to the reduced flow of the stream. As a precedent governing interbasin diversion of water, however, Purcellville should be read only as affirming the propriety of enjoining unreasonable uses causing actual injury. If water diverted to another basin is truly surplus in its area of origin, then Purcellville should not apply because no actual injury will result to riparians in the area of origin. Thus, in any Virginia intrastate interbasin diversion, availability of an injunction will turn on the reasonableness of the use, which will be a factual inquiry into whether riparians in the basin

54. R. MINOR, LAW OF REAL PROPERTY § 55 (2d ed. 1928) (cited with approval in 179 Va. at 520-21, 19 S.E.2d at 702-03).
55. See 179 Va. at 522, 19 S.E.2d at 703 (discussing Carpenter v. Gold, 88 Va. 551, 14 S.E. 329 (1892)).
56. R. MINOR, supra note 76, § 55 (quoted in 179 Va. at 520-21, 19 S.E.2d at 702-03).
57. Id.
of origin suffer actual harm.\textsuperscript{31}

\textit{The Virginia Constitution and the Power of the General Assembly}

To date, Virginia has no general legislation that precisely governs interbasin diversion.\textsuperscript{62} A variety of laws, however, address the regulation of the state’s waters.\textsuperscript{63} Foremost among these is the State Water Control Law,\textsuperscript{64} enacted to fulfill the state’s role in controlling water pollution under the federal Clean Water Act.\textsuperscript{65} The Virginia Code also contains a series of provisions that establish state policy for water resources;\textsuperscript{66} however, these policy statutes do not address directly the issue of interbasin transfers.

The relevant provisions of the water policy laws announce that the state government may “effectuate the proper and comprehensive utilization” of “waters for all purposes beneficial to the public.”\textsuperscript{67} Additionally, the government may determine that the “changing wants and needs of the people of the State may require the water . . . to be put to uses beneficial to the public.”\textsuperscript{68} Finally, these laws note that public welfare entails “the proper development” of natural resources.\textsuperscript{69} Despite related statutory language that guarantees vested rights of water use\textsuperscript{70} and local governmental prerogatives,\textsuperscript{71} the policy announced is not hostile to interbasin di-

\textsuperscript{31} The other major Virginia cases are not directly on point. In Hite v. Town of Luray, 175 Va. 218, 8 S.E.2d 369 (1940), the issue was defining water rights among a group of takers from a single grantor. In Davis v. Town of Harrisonburg, 116 Va. 864, 83 S.E. 401 (1914), the decision involved the reasonableness of an electric generation plant detaining water and thereby forcing the lower riparian to run his mill only when the generation plant was in operation.

\textsuperscript{62} Such a bill was introduced but withdrawn in the 1982 General Assembly. See supra note 23.

\textsuperscript{63} See generally VA. Code tit. 62.1 (1982).

\textsuperscript{64} See VA. Code § 62.1-44.2 to -44.34:7 (1982).


\textsuperscript{67} VA. Code § 62.1-11(b) (1982).

\textsuperscript{68} Id. § 62.1-11(c).

\textsuperscript{69} Id. § 62.1-11(d).

\textsuperscript{70} Id. § 62.1-12.

\textsuperscript{71} Id. § 62.1-13.
version. Such diversions easily could be viewed as “comprehensive utilization” of the diverted waters in response to the “changing wants of the public” reflected in increased demand for water in the importing basin. In that light, an interbasin transfer is a “proper development” for a purpose that is beneficial to the public. Existing statutory water policy, therefore, arguably permits interbasin transfers of water, even in cases lacking express legislative approval of the proposed transfer. The common law of riparianism would control the legal fate of such a project.

In contrast to the constitutions of many western states, the Virginia Constitution addresses water resources in general policy terms leaving the Virginia General Assembly free to adopt laws to control water use. The pertinent provisions of the Virginia Constitution are sections 1, 2, and 3 of article XI. They declare resource

72. But see Walker & Cox, supra note 66, at 315. Language in existing statutes protective of vested rights cannot prevent diversions. That language and the due process guarantee of the fourteenth amendment, however, provide a check on government action regarding vested property rights. Compensation must be paid if vested rights are destroyed by state action. State law affects the determination of whether the rights are vested. Existing uses of water that are reasonable are likely to enjoy the legal protection afforded to vested rights.

73. See supra notes 44-61 and accompanying text.

74. See, e.g., CAL. CONST. art. XIV, §§ 1-3.

75. The text of these provisions states:

§ 1. Natural resources and historical sites of the Commonwealth.—To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.

§ 2. Conservation and development of natural resources and historical sites.—In the furtherance of such policy, the General Assembly may undertake the conservation, development, or utilization of lands or natural resources of the Commonwealth, the acquisition and protection of historical sites and buildings, and the protection of its atmosphere, lands, and waters from pollution, impairment, or destruction, by agencies of the Commonwealth or by the creation of public authorities, or by leases or other contracts with agencies of the United States, with other states, with units of government in the Commonwealth, or with private persons or corporations. Notwithstanding the time limitations of the provisions of Article X, Section 7, of this Constitution, the Commonwealth may participate for any period of years in the cost of projects which shall be the subject of a joint undertaking between the Commonwealth and any agency of the United States or of other states.

§ 3. Natural oyster beds.—The natural oyster beds, rocks, and shoals in the
conservation, including water resources, to be the policy of the Commonwealth, and recognize the General Assembly as the vehicle through which the policy is to be implemented. Although commentators on Virginia water policy have suggested that the Virginia Constitution has "not had appreciable influence on the water resource activities of the Commonwealth," the constitution does provide a foundation for legal analysis of interbasin transfers.

The constitutional provisions confirm the General Assembly's very broad powers to structure water laws of the Commonwealth to allow or prevent transfers. For example, the predecessor provision of section 3 of article XI has been construed to give the General Assembly resource management powers limited only by federal law and the express Virginia constitutional prohibition on the sale and lease of the state's oyster beds. Accordingly, the General Assembly was allowed to authorize a municipality to dump raw sewage, even though the dumping would cause severe water pollution rendering the underlying oyster beds unfit for use. Indeed, the concept of legislative supremacy is so deeply rooted in Virginia law that the Supreme Court of Virginia has stated that "[t]he state Constitution is not a grant of power, and the Legislature may exercise any and every legislative power of the state not forbidden by the state Constitution."

The legal implications of broad legislative power affect directly interbasin transfers of water. The Virginia Legislature could, if it chose to do so, expressly authorize diverting water from its natural course. Further, neither protracted legislative silence nor unfavora-
ble common law development prohibits the current legislature from enacting laws that favor transfers. Until an express legislative scheme governing interbasin transfers is enacted, however, the common law in Virginia will control this issue.

The Potential Role of the Virginia General Assembly

The previous two subsections demonstrate that Virginia law probably permits intrastate interbasin diversion of water if the transfer does not injure riparians in the basin of origin. The previous discussion also indicates the General Assembly has extensive power over water resources. Considering what types of legislation might be enacted to prevent or to facilitate transfers will be instructive.

One simple response would be to prohibited interbasin transfers legislatively. Invoking the broad powers over water resources conferred by the Virginia Constitution, the General Assembly could

81. The General Assembly, if it decided to change present law, might be forced to compensate some adversely affected riparians if the detrimental impact of the change on their property was so substantial as to be a taking of that property. Very few cases of compensable takings of property are likely to arise. The reasons supporting this conclusion include the current status of takings law, the nature of the riparian right allegedly taken, and the likelihood that interbasin transfers will seldom displace existing water users.

Under the Federal Constitution, the leading case of particular relevance is Penn Central Transp. Co. v. City of New York, 438 U.S. 104 (1978). The Penn Central opinion finds no taking when New York City's historic landmark preservation law prevented development of a 55 story office building atop Grand Central Station. The Court's finding relied on the fact that the landowner remained seized of the bulk of the "bundle of sticks" that make up a property right. Also important was the fact that valuable existing uses of the parcel remained and the grant of transferrable development rights tended to further mitigate any loss sustained.

An interbasin transfer that adversely affects riparians in the basin of origin does not wipe out their entire "bundle" of property rights. See infra text accompanying notes 44-46. Fastland uses of the riparian tracts will be wholly unimpeded, thereby leaving the bulk of the riparian's "bundle of sticks" intact. The right that is affected, the right of reasonable use of the watercourse, may be impaired, but seldom obliterated. The riparian did not enjoy absolute dominion over the water, only a right to use the water in a way that did not disproportionately disadvantage other co-riparians. Further, most transfers will leave some streamflow in the basin of origin. Finally, the process of selection of water for transfer will be sensitive to existing uses of the water. Restated, areas in which there is not surplus water are not likely candidates for exportation.

82. See supra note 23. For a discussion of the common law in Virginia, see supra notes 44-61 and accompanying text.

83. See supra notes 62-82 and accompanying text.

84. See supra notes 75-82 and accompanying text.
decree that such transfers are against public policy and may be enjoined by the judiciary, or that diversion of water out of its basin of origin is a per se unreasonable use of water. Although little doubt exists as to the authority to undertake this action, little in logic commends it. The potential utility of interbasin transfers merits a legal framework that allows case-by-case consideration of each proposal.

Legislative facilitation of interbasin transfers requires more thoughtful analysis than does an absolute prohibition. The current impediment to transfers is possible injury to riparians in the basin of origin. These riparians, if suffering actual injury, might veto the diversion project because they have the right to obtain an injunction. This right may be diluted by the General Assembly declaring that interbasin diversion of water is a reasonable riparian use. Without restructuring common law riparianism, such legislation would require courts to treat interbasin diversion as an ordinary riparian use subject to judicial balancing of its reasonableness in light of other uses. Moreover, the legislation could in some cases protect downstream riparians to a greater extent than does existing common law, because under existing precedents, upstream uses may be permitted despite frustration of previously established uses of downstream riparians.

Some diversions have occurred in Virginia despite requests for injunctions by injured lower riparians because the diverting party condemned the lower riparian’s rights. These compensable property interests, nevertheless, may pose an obstacle to interbasin transfers. One unlikely possibility is that an interbasin transfer project might be undertaken by an entrepreneur lacking the power of condemnation. Another possibility is that condemnation of these rights for the benefit of private users in the importing basin

85. See supra notes 33-34 and accompanying text.
86. See supra notes 68-75 and accompanying text.
87. See, e.g., Model Water Use Act (1958). The Model Act, in § 102(a), defines beneficial use in a way that impliedly permits diversion and interbasin transfer of water. Under the Model Act, a commission empowered to “obtain the most beneficial use of the water” manages water using various means, including alteration of stream flows. Id. § 207.
88. See Davis v. Town of Harrisonburg, 116 Va. 864, 83 S.E. 401 (1914) (power plant detained stream flow and rendered plaintiff’s mill inoperable except when power plant was in operation).
89. See, e.g., Town of Purcellville v. Potts, 179 Va. 514, 19 S.E.2d 700 (1942).
might not be viewed as a public use for which the power of condemnation is appropriate. The legislature could remove these obstacles. If it wished to facilitate diversions that generally increase economic utility, the General Assembly could specify that eminent domain is available to all entities seeking to initiate interbasin diversions.

The final option the General Assembly could consider to facilitate the use of interbasin transfers is specifically protecting the area of origin from the adverse consequences of transfer. The primary concern of the exporting region is its interest in its ability to support future growth requiring more extensive use of water. A number of western states have experience with statutorily protecting the area of origin; California is the leading example. Various mechanisms to protect the exporting region can be implemented, including local preference in time of shortage, appropriation of funds to support water-dependent development projects in the area of origin, and stringent anti-waste provisions governing use in the importing region. The need to consider area of origin protection as part and parcel of the legislative response to the issue of interbasin transfers is compelling. If the area of origin is to win these concessions, it must do so prior to transfer, because once the importing region begins to rely on the water, recapturing the water will be impossible. Additionally, after transfer, little political motivation will remain for representatives of the importing region to support development projects in the area of origin that necessarily create additional competition for scarce supplies of water in the

91. By making a more valuable use of the water, the importing condemnor would increase economic utility.
92. This grant of power would include private entrepreneurs. In the West, such a grant is a commonplace method of providing appropriators a means of bringing water to their land. See, e.g., CAL. WATER CODE § 1007 (West 1971). Giving the power of condemnation to a private enterprise, however, is not free from difficulty. The possibility of successive condemnations by competing would-be users demonstrates the need for regulation.
94. See, e.g., CAL. WATER CODE §§ 11100-11925 (West 1971) (Central Valley Project Act, one provision of which was protecting the watershed where the water originated). See generally Robie & Kletzing, Area of Origin Statutes—The California Experience, 15 IDAHO L. REV. 419 (1979).
future.

The precise character of possible legislation that facilitates diversion varies, but one possibility is a legislative permit system. One commentator recently undertook a thorough examination of eastern water diversion permit statutes in the context of advocating that his home state of Missouri enact such a permit system. Unlike Virginia, increased competition for water in Missouri is due primarily to increased water-dependent economic activity in neighboring upstream states. Nevertheless, the general discussion of permit systems, in the context of Missouri law, highlights the critical issues to be addressed by any comprehensive regulatory scheme. Foremost among these issues are overall allocative policy, the conflict between security of current users and interests of future users, and protecting in-stream uses. The benefits of a permit system lie in its ability to centralize the planning process in a single state agency or adjudicatory body. The drawbacks to a permit system, as with any administrative process, include potential insularity, low level visibility of decisionmaking, and burdensome delay and red tape.

INTERSTATE TRANSFERS OF WATER

Interstate interbasin diversions of water are relatively uncommon, and when proposed, usually generate intense controversy. In the East and West alike, states jealously guard their perceived natural advantage and oppose transfers that will reduce their water supply. Absent payment of a substantial purchase price, out-of-state diversions offer relatively little benefit to the originating state. Moreover, rarely does a readily discernable constituency in

96. Id. at 431-32.
97. Professor Davis opts for a statutory permit scheme. Id. at 431, 470. He acknowledges, however, that other statutory mechanisms, such as mandatory reporting or explicit statutory authority allowing courts to enjoin diversions, might aptly address some diversion issues. Id. at 465-68.
98. Id. at 450-56.
99. Id. at 456-59.
100. Id. at 459-60.
the exporting state favor the transfer. Occasionally, as appears to be the case regarding proposals for a North Carolina to Virginia diversion, a state of origin may attempt to bargain for some advantage in return for its support of a diversion. North Carolina apparently is seeking to reduce Virginia's liquid effluent discharges to benefit North Carolinians located downstream. For purposes of discussion, however, this Article proceeds on the premise that interstate transfer proposals are supported by the destination state and resisted by the other states involved. The diversion issue will be simplified to consider only disputes between the origin state and destination state involving either a river as to which both states are riparian, or a transfer from one intrastate basin in the origin state to another intrastate basin in the destination state.

**Federal Apportionment of Waters**

Interstate disputes over control and exploitation of the nation's natural resources commend themselves to resolution under federal law. The United States Constitution expressly confers on the United States Supreme Court original jurisdiction over interstate disputes, and gives Congress authority to regulate interstate commerce. The Supremacy Clause requires that federal law controls when in conflict with state laws. Thus, either a Supreme

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102. In some instances, exporting states favor transfers. For example, South Dakota recently entered into an agreement to sell water for export to a coal slurry operation. In that case, the amount of water involved was relatively small, and cash and collateral benefits to South Dakota were quite high. See W. Witten, Water Development for Coal Pipelines: The ETSI Story (June 8, 1982) (paper presented to Conference on New Sources of Water for Energy Development and Growth: Interbasin Transfers, Natural Resources Law Center, University of Colorado School of Law). It is noteworthy that downstream states such as Nebraska oppose this diversion out of the Missouri River Basin. See N. Thorson, A Downstream Perspective on South Dakota's Purported Sale of Water to ETSI (June 8, 1982) (paper presented to Conference on New Sources of Water for Energy Development and Growth: Interbasin Transfers, Natural Resources Law Center, University of Colorado School of Law).


104. The full range of problems of multi-state waters, such as the Great Lakes, are too complex for present consideration. Issues involving individuals rather than states as disputants are likewise omitted.

105. U.S. Const. art. III, § 2, cl. 2.

106. Id. art. I, § 8, cl. 3.

107. Id. art. VI, cl. 2.
Court ruling or a congressional enactment regarding an interstate dispute about water transfers would preempt any state or local legislative or regulatory efforts.

Involvement of these two branches of the federal government in past instances of competing claims to interstate waters confirms the doctrine of federal supremacy. The Supreme Court has exercised jurisdiction in interstate water disputes and apportioned the waters between the states.\textsuperscript{108} Similarly, Congress on occasion has intervened in water disputes and apportioned the waters of an interstate river among states situated along the river.\textsuperscript{109} Congress, however, has never enacted a general rule governing all interstate waters. Similarly, the Supreme Court decisions to date, while having some precedential value, are not dispositive of future cases.\textsuperscript{110} A careful examination of the Supreme Court’s pronouncements regarding apportionment, however, will help determine whether a proposed interstate water diversion into Virginia can be resisted successfully by North Carolina, the state of origin.

Litigation involving an interstate interbasin diversion probably will result in state versus state litigation, although few suits involving conflicting claims of individuals located in different states to the use of a single river have reached the Supreme Court.\textsuperscript{111} In adjudicating these cases, however, the Court prefaces its decisions by referring to its power to apportion water between states. For example, in one case Justice Holmes pronounced that the decision is “subject to such rights as the lower State might be decided by this court to have . . . .”\textsuperscript{112} Thus, obtaining a definitive ruling on the right to divert water requires that the Court ultimately hear and decide a case between the states involved. This requirement promotes judicial efficiency. In litigation between states the Court takes the view that each state, through prosecution of its sovereign


\textsuperscript{109} See, e.g., Boulder Canyon Project Act, 43 U.S.C. 617 (1976); Arizona v. California, 373 U.S. 546 (1963). Discussion of interstate compacts, although highly relevant to interstate water allocations, is beyond the scope of the hypothetical under discussion, because the competing states are presumed to disagree on an allocation.

\textsuperscript{110} See infra notes 114-37 and accompanying text.

\textsuperscript{111} See, e.g., Bean v. Morris, 221 U.S. 485 (1911).

\textsuperscript{112} Id. at 486.
interest, "must be deemed to represent all its citizens." The Court thereby eliminates the need for separate dispute resolution for each individual claimant.

In interstate water litigation, the Supreme Court applies the doctrine of equitable apportionment to resolve disputes. Announced in 1907, the doctrine first received application in a dispute involving two prior appropriation states, but the doctrine subsequently has been applied to disputes involving two riparian states. At least initially, the Court viewed its role in resolving interstate water disputes as being born of necessity. The Court stated that "if the two states were absolutely independent nations [the water dispute] would be settled by treaty or by force. Neither of those ways being practicable, it must be decided by decision of this Court."

The principles of decision in these cases are amorphous. In its first application of the doctrine of equitable apportionment, the Court was impressed by the importance of water use in the upstream state and unimpressed by the detriment to downstream

116. See Kansas v. Colorado, 206 U.S. at 98.
117. For a noteworthy criticism of the Supreme Court and its use of the doctrine, see Meyers, The Colorado River, 19 STAN. L. REV. 1, 48-51 (1966). Dean Meyers contends that congressional apportionment of interstate water is preferable to judicial apportionment. A major factor in his analysis is the absence of clear principles to guide judicial distribution. Id. at 50-51. But see infra notes 123-33 and accompanying text.
users. Justice Brewer wrote, "it would seem that equality of right and equity between two states forbids any interference with present withdrawal of water in Colorado [the upstream state] . . . ." The opinion cautioned, however, that the doctrine was flexible, noting that "it is obvious that if the depletion of the waters of the river by Colorado continues to increase there will come a time when Kansas [the downstream state] may justly say that there is no longer an equitable division of benefits, and may rightfully call for relief against the action of Colorado . . . ."

In later cases the court altered the approach somewhat by awarding quantified amounts of water to the disputant states. Nevertheless, the precise content of the doctrine of equitable apportionment remained vague. In *New Jersey v. New York*, a major case decided in 1931 involving diversion for the benefit of New York City, Justice Holmes wrote:

A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it. New York has the physical power to cut off all the water within its jurisdiction. But clearly the exercise of such power to the destruction of the interest of the lower States could not be tolerated. And on the other hand equally little could New Jersey be permitted to require New York to give up its power altogether in order that the river might come down to it undiminished. Both States have real and substantial interests in the River that must be reconciled as best they may. The different traditions and practices in different parts of the country may lead to varying results but the effort always is to secure an equitable apportionment without quibbling over formulas.

In its most recent equitable apportionment case, *Colorado v. New Mexico*, the Supreme Court offered some guidance on factors and proof that will influence its judgment. In rejecting the

118. 206 U.S. at 114.
119. *Id.* at 117.
120. *See, e.g.*, Wyoming v. Colorado, 259 U.S. 419, 496 (1922). In a dispute between two states employing the doctrine of prior appropriation, the Court viewed as relevant the relative priorities in time of competing appropriators located in the two states. *Id.* at 470-71.
121. 283 U.S. 336 (1931).
122. *Id.* at 342-43.
123. 51 U.S.L.W. 4045 (Dec. 13, 1982).
findings of the Special Master as insufficiently detailed to permit the Court to review the application of principle to fact, the Court rejected state law regarding prior appropriation as controlling, even if both the competing states had adopted the prior appropriation doctrine. The Court applied federal law and indicated that conservation efforts of both states are relevant, including efforts by the state that inevitably risked losing water due to the apportionment. Further, the Court stated that "it is proper to weigh the harms and benefits to competing states." As between existing users and potential users, the Court observed that "the equities supporting existing economies will usually be compelling. The harm that may result from disrupting established uses is typically certain and immediate, whereas the potential benefits from a proposed diversion may be speculative." Perhaps most important to present purposes, however, the majority specified in a footnote that "a state seeking to prevent or enjoin a diversion by another state bears the burden of proving that the diversion will cause it 'real or substantial injury or damage,'" a burden that must be sustained by "clear and convincing evidence." The Court, then, clearly favors protecting existing users over potential users. Additionally, the Court apparently favors those states that seek to divert and use water over states opposed to the transfer.

Returning to potential interstate water transfers into Virginia, a

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124. The Court appointed Ewing T. Kerr, Senior Judge of the United States District Court for the District of Wyoming, to examine the evidence and submit a report to the Court. *Id.* at 4046.
125. *Id.* at 4048.
126. *Id.* at 4047.
127. *Id.* at 4049. New Mexico claimed it had wholly appropriated the flow of the river. *Id.* at 4047. The Court required the Special Master to determine how much water could be saved by conservation measures in New Mexico, thereby making such water available for use in Colorado. *Id.* at 4049.
128. *Id.* at 4047.
129. *Id.* at 4048.
130. *Id.* at 4048 n.13.
131. *Id.* at 4048.
132. Justice O'Connor, joined by Justice Powell, concurred in the result. Her opinion is even more favorable to existing water users than that of the majority. *Id.* at 4049-50. (O'Connor, J., concurring).
133. The opinions probably overstate predisposition toward either state. Talk of identified factors and fixed burdens of proof is antithetical to the spirit of the doctrine which, in the past, had stressed equitable sharing.
few general observations about the application of equitable apportionment are possible. First, no single state may exercise exclusive control over an interstate river.\textsuperscript{134} Thus, the mere fact that another state, such as North Carolina, opposes the transfer will be of little consequence to the Supreme Court in deciding whether Virginia may withdraw water from the river for use out of the basin of origin. That no state has an exclusive right to the water is true regardless of the physical relationship of the states to the water or to the point of diversion.\textsuperscript{135} Similarly, no state has an exclusive right to the water even if, once transported to the importing basin, the water never flows back into the origin state.\textsuperscript{136} Most important, the state opposing the transfer has the burden of proving that economic harm will be suffered by actual or potential users as a direct result of the transfer.\textsuperscript{137} These general precepts about equitable apportionment indicate that no per se rule of non-diversion would prevent a Virginia importation plan. In fact, as long as Virginia is not seeking to obtain a disproportionate share of the water, its claim of right to use the water is likely to win Supreme Court approval.

A final cautionary note is appropriate. If the proposal involves transfer from a watercourse to which Virginia is not riparian, equitable apportionment may not apply. All prior cases of equitable apportionment have adjudicated disputes among co-riparian states. Indeed, Justice Holmes, the author of several leading apportionment decisions, stated in \textit{Hudson County Water Co. v. Mccarter}\textsuperscript{138} that the doctrine is inapposite to cases involving inter-

\textsuperscript{134} See \textit{supra} note 122 and accompanying text.

\textsuperscript{135} The upstream/downstream positioning is shown to be of no consequence. The Court has inherent power to apportion the stream in favor of either disputant. \textit{See supra} notes 109-20 and accompanying text.

\textsuperscript{136} If, for example, the Potomac River were to be the source for a diversion, the diversion might occur near its headwaters in West Virginia. The fact that lower parts of the river in West Virginia and its entire flow along the Maryland border are adversely affected will not give either West Virginia or Maryland a veto power over the proposal in equitable apportionment litigation. \textit{See}, e.g., \textit{Wyoming v. Colorado}, 259 U.S. 419, 466 (1922) (allowing upper riparian state to divert river water to a basin that did not drain into lower riparian state). Cf. \textit{Bean v. Morris}, 221 U.S. 485, 487 (1911) (assuming in an interstate apportionment dispute "the same rights to be acquired from outside the State that could be acquired from within.").

\textsuperscript{137} 51 U.S.L.W. at 4048 n.13.

\textsuperscript{138} 209 U.S. 349 (1908).
state diversion of an intrastate stream. In upholding New Jersey’s right to prevent such a diversion, he stated:

[F]ew public interests are more obvious, indisputable and independent of particular theory than the interest of the public of a State to maintain the rivers that are wholly within it substantially undiminished, except by such drafts upon them as the guardian of the public welfare may permit for the purpose of turning them to a more perfect use.  

Although the case in which that language appeared is now of doubtful constitutional validity, the logic concerning the princi-

139. Id. at 356. The passage was penned in response to a challenge by a private riparian who sought to divert the water out of state for use. The remainder of the passage is as follows:

This public interest is omnipresent wherever there is a State, and grows more pressing as population grows. It is fundamental, and we are of opinion that the private property of riparian proprietors cannot be supposed to have deeper roots. Whether it be said that such an interest justifies the cutting down by statute, without compensation, in the exercise of the police power, of what otherwise would be private rights of property, or that apart from statute those rights do not go to the height of what the defendant seeks to do, the result is the same. But we agree with the New Jersey courts, and think it quite beyond any rational view of riparian rights that an agreement, of no matter what private owners, could sanction the diversion of an important stream outside the boundaries of the State in which it flows. The private right to appropriate is subject not only to the rights of lower owners but to the initial limitation that it may not substantially diminish one of the great foundations of public welfare and health.

We are of opinion, further, that the constitutional power of the State to insist that its natural advantages shall remain unimpaired by its citizens is not dependent upon any nice estimate of the extent of present use or speculation as to future needs. The legal conception of the necessary is apt to be confined to somewhat rudimentary wants, and there are benefits from a great river that might escape a lawyer’s view. But the State is not required to submit even to an aesthetic analysis. Any analysis may be inadequate. It finds itself in possession of what all admit to be a great public good, and what it has it may keep and give no one a reason for its will.

140. The constitutionality of prohibiting water export is now doubtful. See Sporhase v. Nebraska ex rel. Douglas, 102 S. Ct. 3456 (1982). See also infra text accompanying notes 150-60. In Sporhase, a Nebraska state court invoked Nebraska law to enjoin the export of ground water. The defendant owned land which straddled the Nebraska-Colorado boundary line. A well on the Nebraska portion of the tract supplied water to the entire tract. The Nebraska court based its injunction on a law which forbade export of ground water to a state, like Colorado, that did not provide for reciprocity in the export and use of ground water.
ple of apportionment survives. No obvious basis exists on which to allocate to a nonriparian state water from another state's stream. Accordingly, whether the judicial doctrine of equitable apportionment will require a state to allow interstate diversion of an intrastate river is uncertain. If a federal basis exists that would permit such transfers, its genesis must lie in considerations that are broader than the Supreme Court's institutional role as referee of interstate disputes.

The Dormant Commerce Clause

In discussing interstate interbasin water diversion into Virginia, the presumption was that the state of origin would oppose the transfer. Indeed, a transferor state might view the transfer not only as an exportation of water but also as an exportation of opportunities for economic development that depend on water. When the water may be equitably apportioned is an appropriate subject for congressional legislation and, as previously discussed, opposition to the transfer by the state of origin may be inconsequential. For waters that are neither subject to equitable apportionment nor apportioned by appropriate federal legislation,

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The Supreme Court held that the Nebraska ground water reciprocity provision violated the commerce clause. Id. at 3467. Justice Stevens, writing for the Court, held that ground water is an article of interstate commerce. Id. at 3463. The Nebraska law imposed an explicit barrier to commerce in a field of regulation not surrendered by Congress to the states. Id. at 3465-66.

Justice Rehnquist, joined by Justice O'Connor, said in dissent that ground water is not an article of interstate commerce. Id. at 3468 (Rehnquist, J., dissenting).

Nevertheless, the mere fact that totally prohibiting exports is constitutionally impermissible does not mean that a nonriparian state must be apportioned some water from an out-of-state source.

141. See supra notes 23-30 and accompanying text.

142. See Abrams, Setting Regional Policy on Diverting Great Lakes Water to the Arid West: Scaling Down Two Myths, 2 WAYNE LAWYER 6 (1982). Even if the only current economic effect of preventing transfer is to impede development in the transferee state, the position of the transferor state in the race for future development is at least marginally better.

143. See supra notes 135-38 and accompanying text.

144. See supra note 140 and accompanying text.

145. The power of Congress in this regard has been largely unexercised. See supra note 109 and accompanying text. In other natural resource contexts, such as energy, Congress has intervened and limited states from regulating energy production in a way that fails to foster the interstate market for electric power. See Public Utility Regulatory Policies Act of 1978,
Virginia must employ some other doctrine to overcome anticipated resistance from the state of origin.

Apart from judicially mandated apportionment, the major legal sword available against state law forbidding out-of-basin, out-of-state water exportation is the dormant commerce clause. In recent years state laws banning exportation of natural resources have fared poorly when subjected to constitutional attack. Significant examples include Oklahoma's attempt to restrict interstate sales of naturally seined minnows, New Hampshire's attempt to reserve locally generated low cost hydropower for its own citizens, and Nebraska's attempt to restrict ground water exportation. In all of these cases the Supreme Court invalidated the protective state legislation because it interfered with the national interest in the free flow of natural resources among the states.

The Court in Hughes v. Oklahoma laid to rest the fiction that state ownership of natural resources could insulate from constitutional review state laws restricting interstate commerce. The fiction operated by saying that the person who reduced the natural resource to possession received only those rights that the state, as former owner, chose to transfer. If a state conditioned its relinquishment of ownership on non-export of the resource, the resource could not become an article of interstate commerce; consequently, the commerce clause was wholly inapposite. Freed of this fiction, Justice Brennan, writing for the majority, stated that "the general rule we adopt in this case makes ample allowance for


146. See U.S. CONST. art. I, § 8, cl. 3. The clause is described as dormant in this context because the idea of nationhood it promotes is self-executing and does not rely on affirmative action by Congress.

preserving, in ways not inconsistent with the Commerce Clause, the legitimate state concerns for conservation and protection of wild animals underlying the 19th Century legal fiction of state ownership.\textsuperscript{152}

The Court then announced a three part test of constitutionality. First, the Court considers whether the statute is overtly discriminatory against interstate commerce. Overtly discriminatory statutes receive strict scrutiny on review. Second, if the statute is not overtly discriminatory, the Court examines the statutory purpose. Finally, if the statute serves a legitimate purpose, the Court determines whether a less restrictive alternative exists for achieving the purpose.\textsuperscript{153} Finding the Oklahoma statute overtly discriminatory, the Court concluded that the State's defense of the statute did not satisfy the strict scrutiny given to discriminatory legislation.\textsuperscript{154}

The Nebraska statute banning ground water exportation\textsuperscript{155} that was the subject of the decision in \textit{Sporhase v. Nebraska ex rel Douglas}\textsuperscript{156} illustrates the type of statute that Virginia might encounter if it attempts to import water from a river located wholly in another state. Nebraska passed the statute by relying on the previously mentioned \textit{Hudson County Water} case,\textsuperscript{157} which sustained New Jersey's right to prevent interstate transport of water from an intrastate stream. The \textit{Hudson County Water} decision

\begin{itemize}
  \item \textsuperscript{152} Hughes v. Oklahoma, 441 U.S. 322, 335-36 (1979).
  \item \textsuperscript{153} The formulation is as follows:
    \begin{quote}
      \textit{[W]e must inquire (1) whether the challenged statute regulates evenhandedly with only 'incidental' effects on interstate commerce, or discriminates against interstate commerce either on its face or in practical effect; (2) whether the statute serves a legitimate local purpose; and, if so, (3) whether alternative means could promote this local purpose as well without discriminating against interstate commerce. The burden to show discrimination rests on the party challenging the validity of the statute, but when discrimination against commerce . . . is demonstrated, the burden falls on the State to justify it both in terms of the local benefits flowing from the statute and the unavailability of nondiscriminatory alternatives adequate to preserve the local interests at stake.}
    \end{quote}
  \item \textsuperscript{154} \textit{Id.} at 337-38.
  \item \textsuperscript{155} Neb. Rev. Stat. § 46-613.01 (1978).
  \item \textsuperscript{157} \textit{See supra} notes 138-39 and accompanying text.
\end{itemize}
had relied upon the concept of state ownership, subsequently discredited by Hughes v. Oklahoma. Subjecting the Nebraska statute to the commerce clause test set out in Hughes, the Court in Sporhase found the statute constitutionally infirm.

The fact-specific tenor of the Sporhase opinion suggests further analysis might be instructive. The disputed statutory provision in Sporhase provided:

Any person, firm, city, village, municipal corporation or any other entity intending to withdraw ground water from any well or pit located in the State of Nebraska and transport it for use in an adjoining state shall apply to the Department of Water Resources for a permit to do so. If the Director of Water Resources finds that the withdrawal of the ground water requested is reasonable, is not contrary to the conservation and use of ground water, and is not otherwise detrimental to the public welfare, he shall grant the permit if the state in which the water is to be used grants reciprocal rights to withdraw and transport ground water from that state for use in the State of Nebraska.

Nebraska claimed that the purpose of the statute was conservation and preservation of the resource. The majority acknowledged the legitimacy of the purpose and noted that Nebraska’s genuine efforts to conserve ground water resources were amply demonstrated by other aspects of the statewide ground water management scheme. Additionally, Nebraska water officials had designated the specific land and ground water basin involved in Sporhase as an area of inadequate ground water supply. Referring to this designation, the Supreme Court stated, “[A]t least in the area in which appellants’ Nebraska tract is located, the first three standards of section 46-613.01 may well be no more strict in application than the limitations upon intrastate transfers . . . .” Thus, although the Nebraska statute was unconstitutional, the suggestion is that a statute that is part of a statewide conservation scheme and that

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158. See supra notes 150-54 and accompanying text.

159. See supra note 153.

160. The decision was seven to two, with Justices Rehnquist and O'Connor dissenting.

161. See supra note 155.

162. 102 S. Ct. at 3463-64.

163. Id. at 3464.
burdens intrastate as well as interstate diversion will be more favorably received by the Court than a statute that does not serve a broad conservation purpose or that prohibits only interstate diversion.

The constitutionally infirm provision of the statute was the reciprocity requirement which "operate[d] as an explicit barrier to commerce between the two States."164 Finding that the reciprocity requirement was not drawn as narrowly as possible in furtherance of the conservation purpose, the Court invalidated the entire statute. In dicta, however, the Court observed that even statutes prohibiting water exports altogether might survive scrutiny if the state made a strong enough showing that the means chosen were necessary to achieve a critical end such as providing water to state residents.165

Prohibitions on water exports in the East are inherently less compelling than those that exist in the West. The Court evaluates statutes prohibiting water exportation by standards of strictest necessity, and water in the East is relatively plentiful, even in times of shortage. The showing that Sporhase requires to save a statute prohibiting water exports arguably cannot be made by an eastern state. The prohibition standing alone would not outweigh the countervailing value of uninhibited interstate commerce. If linked to rigidly enforced intrastate bans on diversions and in-state water conservation practices, however, an eastern statute is more likely to survive. Whether the saving features would save the statute despite the inherently less compelling state interest is unclear. The Court will probably conclude that problems of local water shortage existing in the East need not be remedied by a regulatory regime that burdens interstate movement of a valuable resource.

Although prohibitions on water exportation by an eastern state might be unconstitutional, a state may enact other measures that, while not overtly discriminatory against interstate commerce, nonetheless discourage out-of-state water transfers. One option is to raise the cost of interbasin transfers by imposing a substantial

164. Id. at 3465.
165. Id. See also Clyde, State Prohibitions on the Interstate Exportation of Scarce Water Resources, 53 U. Colo. L. Rev. 529 (1982) (arguing export bans to be valid, but written prior to Sporhase).
water severance tax on all water users outside of the basin of origin. If the majority of intrastate users are also intrabasin users, the tax will affect interstate users to a greater extent than intrastate users. This disproportionate effect does not offend the commerce clause if the statute was enacted for a legitimate purpose, such as raising revenue, as long as it treats intrastate and interstate out-of-basin diversions equally.\textsuperscript{6} Other legislation inhibiting interbasin diversion includes imposing strict liability on diverters for present or future damage sustained by downstream riparians, and establishing a user priority system which, in times of shortage, prefers in-basin users over out-of-basin users. The strict liability statute would add an uncertain expense factor to the interbasin diversion. The priority statute would render water availability uncertain, threatening interruption at precisely the worst times—during periods of drought. These statutes all regulate evenhandedly intrastate and interstate commerce. They are not facially discriminatory, and do not have as their purpose frustration of interstate commerce. The constitutional inquiry, under a standard less exacting than strict scrutiny, will be whether the legislation supports legitimate local interests in a way that does not unduly burden interstate commerce.\textsuperscript{167} Although the constitutional outcome will depend on the facts of each case, the Supreme Court will be less likely to act intrusively when the impact on interstate commerce is not overtly discriminatory.

\textbf{Conclusion}

The discussion of interbasin transfers as a means of augmenting local water supply in the East began by discussing physical aspects of water supply and transfer in an effort to develop concepts of water shortage and surplus. Presently, water shortages in the East occur primarily during times of low rainfall; however, there is a need for a secure water supply under all conditions and that need is increasing as population and economic activity increases. At some point, rapidly growing regions such as Tidewater Virginia must augment supply, and importing water from another basin is


\textsuperscript{167} See supra note 153 and accompanying text.
an attractive alternative. In an intrastate context, interbasin transfer is a promising option because the importing region will have greater political strength than the less developed exporting region. Additionally, mixed impacts on the exporting basin are likely to fragment opposition from that region. Even if political and economic arguments favor interbasin transfers, however, legal doctrines are equally important. Throughout the East, the common law doctrine of riparianism, and the consequent right to reasonable use, prevails. Diversion of water is not always considered a reasonable use. Intrastate interbasin transfers would be facilitated by favorable legislation overruling or clarifying the common law.

Interstate transfers are more complex. Congress enjoys, but seldom exercises, the power to define and allocate water use rights among competing states. This hesitancy is probably attributable to the fact that interstate diversions are far more likely to engender politically balanced, state against state opposition. Unlike intrastate transfers, where the voice of the area of destination dominates the process, interstate diversion will be opposed by the state of origin which fears that water export will limit future economic growth. Rough parity of power exists between rival states, a parity that has no parallel in the intrastate context.

The major legal issue regarding interstate transfers is whether the state of origin may prohibit transfers. Judicially mandated equitable apportionment of water will require some sharing of the water to which both states are riparian. Additionally, the dormant commerce clause will be an obstacle to states explicitly banning all interstate exports. States of origin, however, still enjoy substantial latitude to enact various statutes that in their operation discourage interbasin transfers. These statutes will be subject to case-by-case review to determine whether they unduly burden interstate commerce. If the statutes implement a comprehensive water resource management plan that restricts in-state activities as well as interstate transfers, these statutes probably will pass constitutional muster.

Intrastate interbasin water transfers are a realistic alternative for areas in the East experiencing episodic water shortages, as well as for areas of chronic shortage. The common law doctrines governing water resources are malleable enough to accommodate interbasin transfers. These same legal doctrines, bolstered by appro-
priate legislation, can encourage interbasin transfers. Before concluding that interbasin transfers should be encouraged, however, policy makers should conduct a searching inquiry into the general desirability of interbasin transfers. A series of project-specific decisions transferring water to another basin, each of which is commercially supported in its own right, may mask a larger societal price that is exacted by the reliance on large-scale, centralized projects. 168

168. See generally K. WITTFOGEL, ORIENTAL DESPOTISM (1957) (noting the loss of individual freedom in Oriental cultures that attends the societal organization required to undertake major water projects). The experience with large-scale water projects in the American West has resulted in some appreciable loss of individual freedom. Cf. Salyer Land Co. v. Tulare Lake Basin Water Storage District, 410 U.S. 719 (1973) (approving voting scheme that favored holders of valuable lands to exclusion of mere residents and lessees, resulting in a few large landholding corporations having 85% of the voting power); Note, Orr v. Kneip: Defining the Limits of "One Person, One Vote" in the Oahe Conservancy Subdistrict, 25 S.D.L. Rev. 597 (1980) (voting inequity).