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ARKANSAS AT THE WATER CROSSROADS: REGULATIONS OR SOLUTIONS?

In 1985 the Arkansas Legislature will be faced with one of its most controversial decisions in decades. This decision will affect the allocation of, and rights to, our most important but least respected resource: water. Although many agree that Arkansas needs a plan to study, develop and utilize our water resources; there is disagreement over the contents of such a plan. An earlier water code proposal was defeated in the 1981 Arkansas Legislative Session. Although there are many controversial peripheral issues in question, the battleground lines have been drawn around whether or not the right to use surface and ground water should be controlled by a state agency or by the landowners overlying or adjacent to such water.

Unlike our neighbors to the west, Arkansas is a water rich state. A study conducted by the Winthrop Rockefeller Foundation shows Arkansas receiving an average of about forty-eight inches of rainfall per year, which furnishes 120 billion gallons of water per day. After deducting for evaporation, almost forty billion gallons of water are left over each day for use. An additional two hundred trillion gallons of water lies in permanent storage beneath the land. In comparison, Arkansas’ 1980 daily consumption use was five billion gallons per day. Thus, if properly utilized, Arkansas has an ample supply of water available for the near future. In fact, if Arkansas’ consumptive use doubles in the foreseeable future, only one-fourth of the average available supply would be used.

Although Arkansas is blessed with an ample water supply, the problem is that much of the available water runs through the state unused during the wet months of the year and such water cannot be used under our present riparian system by people who do not own land bordering a river, stream, or lake. A heavy dependence on ground water by irrigation farmers, industry, and municipalities has resulted. Such

3. Id. at 8.
4. Id. at 8.
5. Id. at 15.
6. (5 billion gallons per day x 2) 40 billion gallons per day = one-fourth.
use has caused water tables to drop in certain areas of Arkansas,\(^7\) causing alarm over possible depletion of ground water sources in certain areas and over possible permanent damage to the water bearing formations from salt-water intrusions and compaction. One important point to remember is that most of Arkansas' water bearing formations are being constantly refilled by nature.\(^8\) Therefore, if Arkansas water law allowed for surplus surface water to be transported into these areas to lessen the ground water demand, then by natural processes alone the ground water formation could be replenished.

This commentary will be devoted to a comparison of the water codes of other states to illuminate a preferable solution to Arkansas' problem. Although no two states have identical water codes, a survey of the states reveal three basic approaches in governing the use of water.\(^9\) Twenty-nine states follow variations of the Riparian Doctrine\(^10\) while nine states follow the laws of the Prior Appropriation Doctrine, commonly called the Colorado Doctrine.\(^11\) Ten states follow a hybrid of riparian and prior appropriation law by use of the California Doctrine.\(^12\) Louisiana's and Hawaii's water codes differ from all others due to the influence of the French Civil Code and ancient Hawaiian Kingdom customs.\(^13\) Even though not unanimous, the general trend from the classifications show that states with wetter climates follow the Riparian Doctrine while the more arid states follow the Prior Appropriation Doctrine.

I. RIPARIAN DOCTRINE

A. Introduction

Under the Riparian Doctrine, only those owning land classified as riparian acquire rights to the use of water. Such landowners may make reasonable use of the water on their land if the use does not interfere with the reasonable use of other riparians. Therefore, the definition of

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13. Id. at 12.
reasonable use and the extent of riparian land are important in determining the relative rights of landowners to water in a riparian state.

B. Extent of Riparian Land

The riparian system of water law first developed in England\(^\text{14}\) and was adopted by many eastern states including Arkansas.\(^\text{15}\) Only land bordering a natural lake or watercourse\(^\text{16}\) is defined as riparian.\(^\text{17}\) As a general rule, for land to be riparian it must be both contiguous to land bordering a watercourse and within the natural lake or watercourse's watershed.\(^\text{18}\)

A further limitation on riparian land generally adopted in the western states that use a dual system of riparian and prior appropriation rights is the source of title rule.\(^\text{19}\) Under this rule riparian land is limited to the smallest tract held under one title in the chain of title leading to the present owner.\(^\text{20}\) Land severed from riparian land can never regain its riparian status. The apparent harshness of this rule is tempered by the ability in western states to acquire rights by appropriation.\(^\text{21}\) To the contrary the unity of title rule is more appropriate for riparian law states.\(^\text{22}\) This rule allows land added to riparian land to become riparian itself.\(^\text{23}\)

Arkansas has yet to decide which theory to follow, although in the


\(^{15}\) Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955); Harrell v. City of Conway, 224 Ark. 100, 271 S.W.2d 924 (1954); Taylor v. Rudy, 99 Ark. 128, 137 S.W. 574 (1911).

\(^{16}\) Duckworth v. Williams, 238 Ark. 1001, 386 S.W.2d 234 (1965). A natural watercourse is "a running stream flowing in a particular direction and having a definite channel that lies in a bed between discernable banks. A watercourse usually discharges itself into some other stream or body of water." Id. at 1002.


\(^{18}\) See Harrell v. City of Conway, 224 Ark. 100, 271 S.W.2d 929 (1954); In re Platte Valley Pub. Power & Irrigation Dist., 132 Neb. 292, 271 N.W. 864 (1937) (a watershed is the drainage basin from which the waters of a stream or stream system are drawn); Stratton v. Mt. Hermon Boys' School, 216 Mass. 83, 103 N.E. 87 (1913); Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 88 P. 978 (1907). But see Jones v. Conn, 390 Or. 30, 64 P. 855 (1901); Clark v. Allaman, 71 Kan. 206, 80 P. 571 (1905).

\(^{19}\) Restatement (Second) of Torts § 843 comment d (1977).


\(^{21}\) Restatement (Second) of Torts § 843 comment d (1977).

\(^{22}\) Id.

concurring opinion of *Harrell v. City of Conway* Judge McFaddin, citing no authority, indicated that Arkansas followed the source of title rule. This would be an unfortunate ruling for a state using pure riparian law in that it would eventually cause practically all land to be classified as non-riparian. Only land whose ownership had always been contiguous to a waterbody would be classified as riparian.

C. **Quantity of Water Riparians Can Use**

In the early common law, the riparian doctrine utilized the natural flow theory, which allowed only limited domestic uses of a stream, such as watering livestock and human consumption. As demands for water increased, the American states adopted a more liberal doctrine called the reasonable use theory. Arkansas adopted the reasonable use theory in the 1955 case of *Harris v. Brooks*. Under this theory each riparian is entitled to use a reasonable amount of water, having regard for the rights of other riparians. The only superior right is given to domestic uses and all other uses are considered equal. A lawful use that destroys or interferes with an equally lawful use must be enjoined. The factors that determine the relative reasonableness of the uses vary with each case. Section 850A of the *Restatement (Second) of Water Rights*.

24. 224 Ark. 100, 271 S.W.2d 924 (1954). In this case, the City of Conway had been using water from Caldron Creek since 1912. The city owned land on both sides of the creek, but sold the water commercially beyond the creek’s watershed. The drought in 1953 forced farmers, who were riparians, to use water from the creek for the first time. The City of Conway sought to enjoin the farmers’ use of the water. The court held that a city could be a riparian landowner but had no greater rights than other riparians. Therefore, the City of Conway was enjoined from using the water outside the creek’s watershed. If the city had acquired the land and water rights by eminent domain under Ark. Stat. Ann. §§ 19-4202 (1980) and 35-401-2-3 (1962), they might have been able to continue their use of the water. The court did not rule on this. The court also stated that a lower riparian could not gain a prescriptive right against an upper riparian due to his non-use of the water.

25. Thomas v. LaCotts, 222 Ark. 171, 257 S.W.2d 936 (1953); Turner v. Smith, 217 Ark. 441, 231 S.W.2d 110 (1950); Meriwether Sand & Gravel Co. v. State, 181 Ark. 216, 26 S.W.2d 57 (1930).


27. 225 Ark. 436, 283 S.W.2d 129 (1955). In this case, the Arkansas Supreme Court partially enjoined an earlier use due to the harm it caused and the practicality of adjusting the earlier use. The two competing riparian uses in this case involved a past and present use of irrigating rice verses a new use of commercial boating and fishing. Water withdrawn from Horseshoe Bend Lake had caused the water level to drop. The plaintiffs claimed this use hindered their use of the lake for boating and fishing. The court noted that Arkansas followed the reasonable use theory and enjoined the former use from drawing the lake below a level where commercial boating and fishing would be unreasonably interfered with.

28. Id. at 443, 283 S.W.2d at 133.

29. Id. at 444, 283 S.W.2d at 134.

30. Id. at 445, 283 S.W.2d at 134.
Torts lists the following factors to be considered in the determination:  

(a) The purpose of the use,
(b) the suitability of the use to the watercourse or lake,
(c) the economic value of the use,
(d) the social value of the use,
(e) the extent and amount of the harm it causes,
(f) the practicality of avoiding the harm by adjusting the use or method of use or one proprietor or the other,
(g) the practicality of adjusting the quantity of water used by each proprietor,
(h) the protection of existing values of water uses, land, investments and enterprises, and,
(i) the justice of requiring the user causing harm to bear the loss.

No one factor controls in the determination of reasonableness. The varying circumstances of each case necessitate the use of different factors. Factors (a)-(d) are used to establish whether both plaintiff's and defendant's uses are reasonable. If so determined, then factors (e)-(i) are used to distinguish between the reasonable uses.

D. Advantages and Disadvantages of the Riparian Doctrine

Two principles promoted by the riparian system of law are equity and efficiency. Land bordering water resources for agricultural, industrial or domestic uses will generally cost more to purchase than non-riparian land. Riparians having paid this higher price believe it is more equitable and analogous to our free market system to be given a superior right to such waters. Additionally, riparian use of water is thought to be more efficient because it generally requires less transportation which reduces evaporation and pumping costs. The principles also promote efficient water usage by considering factors such as methods of use, economics, and social values in reasonable use determinations. This necessitates abandonment of wasteful methods of diverting water and the development of riparian land to its highest economic and social value.

Disadvantages include lack of investment protection, surplus water waste and piecemeal allocations of rights through the courts. Riparians do not lose their right to make reasonable use of water due to non-use. If the present riparian use is close to the capacity of the water-

34. Harrell v. City of Conway, 224 Ark. 100, 271 S.W.2d 924 (1954); Fresno Canal &
course, additional uses by new riparian users could endanger the water availability for the existing use and present an uncertainty for business investments. This makes the pure riparian doctrine impractical for arid states such as Arizona and New Mexico.

States such as Arkansas with wetter climates face a different problem. The situation often exists where riparians do not fully use the potential of a watercourse. As a result, surplus water flows through an area unused while non-riparians are unable to utilize their land fully due to lack of water availability. To remedy this problem, some states have modified their riparian laws to allow non-riparian use of water not needed by riparians.35

Another disadvantage is that a controversy in a pure riparian state must be settled by the courts, possibly resulting in an aggrieved party being without water until a decision is rendered.36 In reality the result is the same in a prior appropriation state. Controversies arise as to whether parties using water have permits,37 whether one party is using more than the allotted share,38 and whose permit has priority.39 These controversies are first decided by the appropriate water boards in each state and are appealable to the courts. As a result, the rights to water may be denied for an extended period of time pending a decision.

II. PRIOR APPROPRIATION

A. Introduction

The prior appropriation doctrine is generally a first-in-time, first-in-right law. Riparians and non-riparians are allowed appropriations of water with priority going to the first to make a valid claim.40 Therefore, it is possible for a non-riparian to have a valid appropriation of water while a riparian may be prohibited from withdrawing any water. Almost all prior appropriation states allocate rights to use water through

Irrigation Co. v. People's Ditch Co., 174 Cal. 441, 163 P. 497 (1917).


36. RESTATEMENT (SECOND) OF TORTS § 850A, comment a (1977). This result is the same in a prior appropriation state, however.


a permitting system. Each permit states a date of priority and appropriates a specified amount of water.

B. Development of Prior Appropriation Doctrine

The prior appropriation doctrine was developed in the arid western states. The riparian doctrine was impractical for those states because of the vast amounts of land covered by few lakes and streams. Originally, most of the western lands were owned by the federal government, so that its policies had a pronounced effect on water law development. The 1866 Mining Act allowed water to be carried across public lands to mines. Priority over riparians who acquired public lands was given to these uses by the 1870 Amendment to the Mining Act. In addition, the 1877 Desert Land Act allowed water from non-navigable watercourses to be appropriated in certain arid states.

C. Elements of Appropriation

To obtain a valid appropriation, laws in various states require that a party show an intent to appropriate; notice of appropriation; compliance with state laws; a diversion of water from a natural stream; and application of such water, with reasonable diligence and within a reasonable time, to a beneficial use. If the applicant complies with the preceding factors and water is available for appropriation, then the applicant will be granted a permit giving him a priority date for the water use. During subsequent shortages of water appropriations are cut off according to their priority dates.

D. Priority

Dating of priority relates back to the time when intent to divert water for a beneficial use is first manifested. Application for a permit is objective evidence of such intent. Most prior appropriation states

require actual diversion of water from a stream for a valid appropriation thereby providing notice to others that the water has been appropriated. A growing trend, however, is to allow in-stream appropriation to maintain minimum water levels in streams and lakes for recreational purposes and wildlife protection.

For the permit priority date to relate back to the time of intent to divert water, the appropriator must actually use the water for a beneficial purpose within a reasonable period of time, which some states set by statute. Therefore, only the water actually to be used can be permitted. This prevents hoarding of rights to available water supplies without an actual present use. All appropriation states consider domestic, municipal, agricultural, and industrial uses to be beneficial and most states have now added recreation to the list. Neither efficiency nor social utility are included in the requirements for a permit.

E. Advantages and Disadvantages of Prior Appropriation Doctrine

Since non-riparians as well as riparians can obtain appropriations for water in prior appropriation states, land development need not depend on location of watercourses. Where water demand equals or exceeds available water supplies, only established land amounts can be developed. However, land can be developed according to its location rather than its characterization as riparian. In addition, if the water demand does not equal the available supplies, non-riparian as well as riparian lands can be developed.

Investment security is another advantage of the prior appropriation doctrine. Once a permit is obtained most prior appropriation states allow the owner of the permit to keep it for as long as it is applied to a beneficial use. But this security is not complete. An appropriator's

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Templeton, 173 Colo. 438, 484 P.2d 1211 (1971). Colorado is the only prior appropriation state that does not require a permit for an appropriation. Physical intent is required for notice. In this case a survey of the land was sufficient.


right to use water may be cut off or reduced during water shortages, depending on his priority date relative to other appropriators.  

Administrative costs involved in managing permit systems are substantial. A large bureaucracy is required to collect data, manage and enforce water rights. Permits merely regulate water rights and are not a means of solving water scarcity problems. Therefore, states which have excess water might find it more logical to use available money resources for building reservoirs or transferring excess water instead of spending money on a bureaucracy to regulate the problem.

Inefficiency of water use is another disadvantage of prior appropriation states. The granting and continued use of an appropriation does not depend on the efficiency of the diversion or the application of the water. Therefore, a party wanting to use water cannot overcome an earlier priority date by a showing that his use is more efficient and productive.

III. GROUNDWATER

In discussing water law, groundwater must be considered separately from surface water. States are not consistent in governing surface water and groundwater. For example, Texas requires a permit for their surface water but uses a common law doctrine to adjudicate groundwater problems.

A question often arises as to whether groundwater in an area close to streams will be classified as surface or percolating. If water can be proven to flow underground within reasonably ascertainable boundaries or as a constant stream in a known and well defined natural channel, then it will be defined as an underground stream and will be governed by surface water laws. A presumption exists in favor of percolating groundwater; and proof otherwise may be difficult and expensive.

The vast majority of groundwater is classified as percolating water and governed by groundwater laws. Percolating water is found in porous spaces of underground formations. Formations such as sand or

57. F. TRELEASE, CLIMATE CHANGE AND WATER LAW, IN CLIMATE, CLIMATE CHANGES AND WATER SUPPLY (1977).
63. R. LINSLEY, M. KOHLER, J. PAULHUS, HYDROLOGY FOR ENGINEERS, 192-218 (2d. ed. 1975) [hereinafter cited as R. LINSLEY].
gravel from which water can be produced in significant quantities are called aquifers. The capacity of these formations to produce water is governed by their ability to transmit water, or their permeability. Formations with low permeability such as clay serve as barriers, containing the water in the aquifers. Most aquifers are recharged constantly from surface water and allow a certain amount of withdrawal without loss of storage. The height of this storage in the aquifer is called the groundwater level and is measured from the surface down to the depth to which the groundwater will rise due to hydrological pressures. Recharge can come from various sources such as rainfall or water from streams percolating from the surface downward into the aquifers. Another source is lateral percolation from an aquifer outcrop.

Not knowing the source of groundwater, the early courts developed the rule of absolute ownership. This English or common law rule allowed a landowner to produce all the water he wished and to sell his water to others, the only limitation being that actions motivated by malice or waste could be enjoined. As knowledge of underground water increased, the laws governing it changed. The reasonable use doctrine soon developed and was adopted by so many states that it became known as the "American Rule." This doctrine allows a landowner to withdraw underground water for reasonable, beneficial uses on overlying land. As long as the use is beneficial and on the overlying land, the quantity of use is unlimited.

An even more restrictive doctrine has been adopted by a few states, including Arkansas, called the correlative rights doctrine. Under this doctrine, overlying landowners are entitled to a reasonable share of the total supply of groundwater. If there is an ample supply of water, the application of this doctrine will be the same as the reasonable use doctrine. However, in overdraft areas, each overlying land-

64. Id. at 200.
65. Id. at 201.
67. R. LINSLEY, supra note 63, at 192-218.
68. Id.
69. Id.
71. Id.
owner's withdrawal is limited to a fair and just proportion of the groundwater, usually based on acreage.

Under the correlative rights and prior appropriation doctrines, water is allocated up to an amount determined to be the safe yield of the formation. Safe yield has been defined in different ways. Generally, the safe yield is a limit on production of groundwater beyond the level which irreparable damage would occur to the formation. This limitation preserves the groundwater source for future generations but maximizes the present formation utilization.

An expansion of the restrictions in the American Rule is found in the Restatement (Second) of Torts. Under this doctrine, the rights allocation does not depend upon where the water is used. Liability is imposed for withdrawals unreasonably affecting other uses.

Section 858 of the Restatement (Second) of Torts states that a well owner is not liable for withdrawal of groundwater unless the withdrawal: (a) causes unreasonable harm by lowering the water table or reducing artesian pressure, or (b) exceeds the owner's reasonable share of the total annual supply, or (c) has a direct and substantial effect on surface supplies. Some states have modified their doctrines through use of the Restatement's rule for determining liability.

States applying the doctrine of prior appropriation to groundwater generally condition the granting of additional permits on the protection of existing groundwater users. Many states only require permits in statutorily defined critical areas. The granting of permits is based on criteria ranging from no additional withdrawals exceeding annual recharge capacity to levels of production that will deplete a reservoir not having a significant recharge within a set amount of years.

Groundwater permitting merely regulates water use, halting the decline of groundwater tables at the expense of economic water utilization on the surface. The expense of permit systems along with the in-

76. Id.
78. Restatement (Second) of Torts § 858 (1977).
ability for growth and increased usage raises serious doubts about the desirability of such programs in states with comparatively wet climates. The arid western states have no choice but to regulate usage, due to the lack of available surface water to supplement groundwater usage, and can justify the expense of such programs. States with wetter climates and the ability to supplant groundwater usage with excess surface water would be better off adopting positive legislation that allows for increased usage of water by cities, industry and agriculture. Such legislation would use money to build reservoirs and the means of transporting water to solve the problems, instead of spending money on a bureaucracy to regulate a perpetual problem. If additional surface water is made available to critical groundwater areas, thereby lessening the demand on groundwater tables, nature will be able to recharge the groundwater tables as it has in the Alluvial Formation in Arkansas County. Some changes in Arkansas statutory law would be needed to accomplish this, however.

IV. ARKANSAS' UNIQUE ENVIRONMENT REQUIRES UNIQUE SOLUTIONS

Because of Arkansas' diverse topography, it is difficult to write a single water code that applies to the whole state. A diagonal line drawn from northeast Arkansas to middle southwest Arkansas divides the state according to its water usage.

The northern and western parts of the state rely heavily on surface water. Reservoirs such as Beaver, Bull Shoals, Norfolk, DeQueen and Gillham were developed as an answer to the lack of adequate ground water supplies. These reservoirs provide an adequate supply for the present and predicted future needs of those areas. Persons in northwest Arkansas have expressed concern over the possibility that the southern and eastern parts of the state will deplete their groundwater supplies and seek to garner part of the northwest Arkansas surface water.

The southern and eastern parts of Arkansas rely heavily on groundwater. Formations in these areas are generally highly permeable allowing production of water at high rates and are thick, allowing storage of billions of gallons of water. Most of the irrigation in east-

83. See infra notes 89-92 and accompanying text.
86. Id.
ern Arkansas comes from the shallow Alluvial Aquifer and higher quality water used for municipalities and industry is generally withdrawn from the deeper Sparta Formation. In certain areas the withdrawal of water from groundwater formations has been at a greater rate than nature can recharge, causing a drop in the groundwater levels.

Even though there is a valid need for concern the problem has been overstated. Proof of this comes from data collected over the years by the United States Department of the Interior Geological Survey in cooperation with the Arkansas Geological Commission. For years this commission has collected data on groundwater levels in Arkansas and presently has 650 monitoring wells spread throughout the state. Of special interest is the groundwater level data reported from the heavily irrigated area of Arkansas County. The 1984 report shows a rise in the groundwater levels in approximately seventy percent of the forty-one monitoring wells in the Alluvial Formation of this area. Some other areas also show a general increase in the groundwater level but many other areas show a decline. The data from Arkansas County is significant, though, since that county is often reported to be an area of intensive irrigation and rapidly declining water tables.

At present, the Arkansas riparian correlative rights system of water law is failing in that it does not allow excess water of one water basin to be used in another basin. However, the system is comparatively inexpensive to use and gives courts flexibility in its application to Arkansas' diverse environment.

Any new water code should take into account Arkansas' diverse environment and abundant supply of water. Proposed legislation seeks to regulate the use of water through prior appropriation. Allocations of excess surface water to areas of need would be possible under prior appropriation. Because this doctrine was developed in the arid western states, its rigid system of rules would not work well in Arkansas. A rule or standard set for northwestern Arkansas would be totally inapplicable for southern Arkansas. In addition, the prior appropriations system is very costly. The number of persons required to issue, regulate, and enforce a permitting system is enormous. For instance, a permit cannot

87. Id.
88. Id.
90. Id.
91. Id. at 10.
92. Id.
be granted from a mere application. A study must be conducted of not only the available supplies in an area but also of the actual needs of an applicant. Appropriations without such studies would result in inequitable allocations and a multitude of lawsuits. To hire, train and maintain this bureaucracy will cost enormous amounts of money.

Arkansas is fortunate because the environment gives the state alternatives unavailable in arid western states. Western states do not have surplus water to solve their water availability problems and must resort to costly regulatory systems to allocate limited water supplies. Arkansas, with its eight-fold surplus of water, has less expensive alternatives available. Modification of our riparian laws to allow excess water to be used on non-riparian land would be one such alternative. The money that under the prior appropriation system would be spent to pay people to sit in Little Rock and regulate a problem could be used to construct substantive improvements including reservoirs, canals, more efficient irrigation systems, and groundwater recharge systems. This alternative would not require taking water away from one area to give to another, but instead would utilize water that had in the past flowed through the state unused. The choice between prior appropriation and substantive improvements draws down to the simple question of whether it makes more sense to spend money on a bigger office building in Little Rock or more reservoirs and other similar improvements throughout the state.

V. ARKANSAS STATUTORY LAW

When considering how best to modify our present water laws, it is necessary to look at our present statutory system. Four legislative acts are of particular importance in studying the present Arkansas ability to manage its water supplies through data collection and in financing the building of water storage and transportation systems. These four acts are the Arkansas Irrigation, Drainage and Watershed Improvement District Act of 1949, the Regional Water Distribution District Act of 1957, the Water Conservation Commission Act and the Arkansas Water Resources Development Act of 1981. An important consideration is the ability under these acts to make surface water available to critical groundwater areas and the ability to repay the cost of financing.

the building of such projects. In other words, the cost of using surface water must be relatively cheap as compared to the cost of using groundwater.

The Arkansas Irrigation, Drainage and Watershed Improvement District Act of 1949 allows for the formation of districts for the multiple purposes of irrigation, flood control, and drainage. It authorizes the construction of reservoirs, waterways, and pumping works within the established district. A district can be formed by a majority in value of the owners of land in the proposed district. The district's board has the power to acquire property within and without the district by eminent domain for the purpose of the Act. Authority to issue bonds or borrow money can be obtained by petition to the appropriate chancery or circuit clerk. The court must hold a public hearing to determine whether repayment of the obligation shall be by sale of the supplied water or from proceeds derived from taxes obtained from the assessed real property in the district. The real property in the district is assessed according to the benefits obtained from the project and taxed accordingly. This is an important aspect because guaranteed repayment of the obligation can be obtained from taxing the benefited land instead of the sale of the supplied water. Since water is cheaper to pump from a ditch than from the depths of a well, the surface water could be sold relatively inexpensively compared to the cost of using groundwater. Switching to surface water from groundwater is thereby encouraged and the ability to guarantee repayment is provided to encourage the sale of bonds.

The Regional Water Distribution Act allows for the formation of a water district upon petition by one hundred qualified voters residing in the proposed district, in accordance with the United States Watershed Protection and Flood Prevention Act. A district can be formed for industrial, municipal or agricultural purposes if there is water available or to be made available from wells, lakes, rivers or reservoirs con-

102. Id.
structured by the Corp of Engineers, or by authorization of Congress or by the water district with federal assistance.107 Financial aid can be obtained under this act. A loan for up to $10,000,000 can be obtained for any single plan of improvement.108 In addition, this Act allows the district to issue bonds.109 Repayment of these obligations is accomplished by rates charged for facilities or services furnished by the water district.110 This type of water district would be better suited to providing surface water for cities that are heavily dependent on groundwater. Cities and industry could commit to the use of specified amounts of water, thereby guaranteeing repayment of the obligation and providing relief for these cities dependent on groundwater.

The Arkansas Water Resources Development Act of 1981 authorizes the Arkansas Soil and Water Commission to issue bonds, in the total principal amount not to exceed $100,000,000,111 for the purpose of financing the development of water resources.112 These bonds are made the general obligation of the state and payable from general revenue.113 Like the other two acts, this Act provides for the power of eminent domain.114 Since the repayment of the bonds is guaranteed by general revenues of the state, surplus surface water could be provided to areas of need at an attractive rate, and the tax-exempt bonds115 could be sold easily under the repayment guarantee of the state.

The Water Conservation Commission Act provides for the formulation of a State Water Plan116 under the direction of the Arkansas Soil and Water Commission.117 The Commission is given the power to require registration of water diverted from streams and to allocate such water according to the certificates of registration in times of shortage.118 The Act dictates that no allocation of water shall be granted unless the seeker has complied with regulation requirements.119 Allocations made during shortages shall be made in the following order of preference: (i) sustaining life, (ii) maintaining health, and (iii) in-

110. Id.
115. ARK. STAT. ANN. § 21-2312 (Supp. 1983).
creasing wealth.\textsuperscript{120} Such allocation by the Commission shall be made on its own initiative or upon petition by persons affected by such shortage of water.\textsuperscript{121}

Statutory modification of our riparian laws is necessary to increase the effectiveness of these previously discussed acts. Modification should allow the non-riparian use of surplus water. Past and future riparian use should be protected against non-riparian use but still allow for the transfer of excess water to areas of need. Surplus water levels in the state streams could be set by the Soil and Water Commission to protect riparian rights. To quell the fears of northwestern Arkansans, exemptions from allocation could be provided to all waters stored in lakes or reservoirs below the flood control level by the Commission. (In reality, these exemptions would not be needed since this water is managed by the Corps of Engineers and beyond state control.\textsuperscript{122}) The Commission could allow local irrigation and water management districts to divert and allocate all water above certain levels in the streams. Such diverted water could be used to lessen the demands on groundwater formations, nullifying the need for regulating such groundwater. Inter-regional disputes would not arise if water could be diverted during the wet months of the year and stored for use in dry periods. This would allow local management control of excess surplus water with the Soil and Water Commission only controlling stream level cutoffs to protect present and future riparian uses. Individual water management districts could pay for administrative costs by charging for services provided and could raise capital for improvements in accord with the acts previously mentioned. This type of program should be much less expensive than a statewise permitting system of surface and groundwater and would be aimed at solving problems instead of regulating them.

\section*{VI. INTERSTATE COMMERCE CLAUSE}

Arkansas has been discussed as a possible source of water for use in the High Plains area of Mid-America and cities such as Dallas and Houston.\textsuperscript{123} How to keep Arkansas water for future development in Arkansas instead of in other states has been a hotly debated issue.

One of Arkansas' best defenses is economics. In July of 1982, the Corps of Engineers completed a study of importing water to the High

\textsuperscript{121} Id.
\textsuperscript{122} For further explanation, see infra notes 123-44 and accompanying text.
\textsuperscript{123} Ark. Gazette, March 8, 1981, at 9E, col. 1.
Plains from the eastern United States.\textsuperscript{124} Four alternate routes were studied. Two possible routes from Arkansas were much more expensive than the routes originating in South Dakota and Missouri.\textsuperscript{125} The cost of such systems in 1977 dollars, ranged from 3.6 billion dollars to import 1.6 million acre-feet of water per year from Missouri to 27.8 billion dollars to deliver 7.5 million acre-feet from Arkansas.\textsuperscript{126} Due to this great expense the High Plains Council has refocused on conservation rather than importation of water.

From a legal standpoint it would be difficult to prevent the U.S. Congress from enacting such a program. The commerce clause of the United States Constitution empowers Congress to regulate commerce among the states.\textsuperscript{127} The clause "was framed upon the theory that the peoples of several states must sink or swim together and that in the long run prosperity and salvation are in union and not division."\textsuperscript{128} Water is a product of interstate commerce and therefore subject to Congressional regulation.\textsuperscript{129} Although the commerce clause does not expressly prohibit the ability of states to regulate commerce, the clause has been interpreted to have negative implications.\textsuperscript{130} State regulations for the health, safety and welfare of its citizens, are valid as long as not unduly discriminatory against commerce.\textsuperscript{131} State statutes that facially discriminate against other states are unconstitutional unless it can be proven that there is no alternative less burdensome on commerce and that there is a close fit between the statute's requirement and its asserted local purpose.\textsuperscript{132} If the state statute does not discriminate on its face against interstate commerce but does so in effect, then the test is one of reasonableness relative to competing state and federal interests.\textsuperscript{133} The problem is that any statute that favors one state in use will

\begin{itemize}
\item \textsuperscript{124} W. Pearson, U.S. Corps of Engineers, Water Transfer Elements of the High Plains-Ogallala Aquifer Study (1981).
\item \textsuperscript{125} \textit{Id}.
\item \textsuperscript{126} \textit{Id}.
\item \textsuperscript{127} U.S. CONST., art. I, sec. 8, cl. 3.
\item \textsuperscript{128} Baldwin v. G.A.F. Seelig, 294 U.S. 511, 523 (1935).
\item \textsuperscript{129} Sporhase v. Nebraska \textit{ex rel.} Douglas, 458 U.S. 941, (1982).
\item \textsuperscript{130} Pike v. Bruce Church, Inc., 397 U.S. 137 (1970).
\item \textsuperscript{131} Huron Portland Cement Co. v. Detroit, 362 U.S. 440 (1960).
\item \textsuperscript{133} Pike v. Bruce Church, Inc., 397 U.S. 137, 90 S. Ct. 844 (1970):
\end{itemize}

Where the statute regulates even handedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to putative local benefits. [citations omitted] If a legitimate local purpose is found, then the question becomes one of degree. And the extent of the burden that will be tolerated will of
be ruled to be facially discriminatory. The strict scrutiny test applied to facially discriminatory statutes has been hard to overcome. In Nebraska and New Mexico, reciprocal embargo and absolute embargo statutes, respectively, were ruled unconstitutional.134 Both of these states had the prior appropriation method of permitting their water in force at that time.135 It is doubtful that states with wetter climates, like Arkansas, could write a constitutional statute to protect its water from exportation.

Another method of protecting our state water is through interstate compacts. Bordering states negotiate the apportionment of rivers they share. Upon ratification by the states and the U.S. Congress, the compact is enforceable.136 Arkansas has entered into the Arkansas River Basin Compact137 and the Red River Basin Compact.138 The Arkansas River Basin Compact is between Arkansas and Oklahoma. The Red River Basin Compact is of greater importance because of the often stated fear that Dallas or Houston will be allowed to take water from Lake Millwood in southwestern Arkansas. Included in the compact is the water in the Little River and its tributaries above Millwood Dam.139 The compact allocates all water in excess of three thousand cubic feet per second flow in the Red River at the Arkansas-Louisiana border.140 All the water originating in this sub-basin, which includes Little River and tributaries above Millwood Dam, is allocated to Texas, Arkansas, Louisiana and Oklahoma on a twenty-five percent proportion of water exceeding the three thousand cubic feet per second limit.141 Therefore, no matter what statutory law Arkansas enacts, Texas can obtain no more and no less than its twenty-five percent share of this water.

Finally, it has been suggested that permitting Arkansas' water supplies will prove to Congress the need for all our water and will provide a means of effective management of our water supplies. Under prior appropriation laws, permits can only be obtained for actual bene-

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397 U.S. at 142.
139. ARK. STAT. ANN. § 9-1601 (5.03) (Supp. 1983).
140. Id. § 9-1601 (5.05).
141. Id.
This prevents the hoarding of water rights by those who arrive sooner to the permitting office. However, even if Arkansas were able to permit twice its present daily consumption of five billion gallons of water per day, a thirty billion gallons of water per day surplus would be defined for the taking by Congress. This ignores the analogous situation of El Paso's acquiring New Mexico groundwater despite New Mexico's permitting of groundwater since 1951.

**VII. CONCLUSION**

Arkansas has a water surplus and therefore differs from arid western states that have no choice but to permit. It makes no sense to copy their expensive permitting system when we have alternatives which are less expensive and which would not be as intrusive of existing rights. Through storage and distribution of surplus water to areas of need in Arkansas we can solve our problems instead of regulating them forever. The means of guaranteed financing to construct such projects are available under present statutory law. Statutory modification of our riparian system of law is needed to allow the non-riparian use of surplus water while protecting the riparian's present and future needs. Local control of the allocation of this water would be possible and could be financed from the individual districts' sale of diverted water. Strong and imaginative leadership will be needed from our legislators to perceive the emotional issues for what they are and to instead write a water code based on the unique attributes of our state.

*James R. Pender*

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143. *See supra* notes 3-5.
144. *See supra* note 128.