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EMERGING PATTERNS FOR REGULATION OF CONSUMPTIVE USE OF WATER IN THE EASTERN UNITED STATES*

Sheldon J. Plager † and Frank E. Maloney ‡

I. INTRODUCTION

A. Weaknesses of the Common Law Approach to Allocation of Water for Consumptive Use

In theory, the standard of relative reasonableness of the reasonable-use branch of the riparian system facilitates an adjustment of conflicts between uses in accordance with the demands of each user and the dictates of the public interest.¹ It allows each riparian a certain amount of flexibility in initiating a new use or in expanding an existing one in light of changing conditions of water use and supply.

Recently, however, criticism has been leveled at the riparian system for its restrictions on riparian owners as to the use of stream water and its requirement that the water be used only on riparian land. Many critics feel better use may frequently be made on non-riparian lands by either riparian or non-riparian owners.²

The major criticism of the system relates to the element of uncertainty associated with the reasonable use of water for non-domestic purposes. Because the reasonableness of each use is determined by the needs of other riparians, unforeseen conditions arise when they initiate uses despite long non-use of the water or enlarge existing uses. This uncertainty is increased in many states where a riparian, neither making nor intending to make use of water, can enjoin an existing use as unreasonable with regard to his right.³

Another criticism of the common law riparian system concerns the

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1. "The advantages of this [reasonable-use] theory are that it is entirely utilitarian and tends to promote the fullest beneficial use of water resources," 4 RESTATEMENT OF TORTS Ch. 41, Topic 3, at 345-46 (Scope note) (1939).

2. See Fisher, *Western Experience and Eastern Appropriation Proposals*, in THE LAW OF WATER ALLOCATION IN THE EASTERN STATES 75 (Haber & Bergen ed. 1958).

3. In practice, the courts will occasionally regard the fact of priority of use as one element to be considered in assessing reasonableness. *Id.* 77.

lack of administrative controls in many jurisdictions so that the extent of a riparian's right of reasonable use can be determined only by litigation. The critics maintain that this uncertainty results in needless loss when industries utilizing water resources have their water use patterns upset by litigation resulting from competing projects. Probably of greater concern, however, is the waste of water, going unused or being devoted to less valuable uses, because industries, fearing such losses, refuse to move into such a jurisdiction.

On occasion, courts have apportioned stream flow between competing users to give the riparians a clearer picture of their rights.⁴ The infrequency of such decisions may be accounted for in part by the fact that it would involve the courts too deeply in the supervision of those uses. Recognizing their lack of expertise and the inefficiency of a case by case approach, the courts have been reluctant to become involved.

Because population growth and modern technological developments in both agriculture and industry have been making increasingly greater demands on eastern water supplies, the problem of maintaining stream flows and ground water levels has assumed increasingly greater importance. Concern over the adequacy of existing laws to cope with emerging water-resource problems has led many executive and legislative study committees to propose new methods to deal with these problems. The legislative creation in a number of eastern states of administrative authorities with varying powers to grant permits authorizing the withdrawal of water from streams has raised a number of interrelated legal and physical problems.

B. *The Constitutional Problem in Regulating Withdrawals*

One of the first problems faced by a riparian state considering regulation of consumptive use of water is a constitutional one. In the East, it is frequently argued that water rights have become "vested," and that the alteration or termination of these vested rights through the enactment of a water permit system violates due process.⁵ However, it should be noted that the property interest in water is in many ways not readily comparable to a property interest in a more tangible possession; because of its very nature, the property interest in water is more elusive—like water itself. As Heraclitus observed almost twenty-five centuries

4. *Warren v. Westbrook Mfg. Co.*, 88 Me. 58, 66, 33 A. 665, 667 (1895).

5. See Fisher, *Due Process and the Effect of Eastern Appropriation Proposals on Existing Rights, With Special Emphasis on the Michigan Proposal*, in *THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES* 441 (Haber & Bergen ed. 1958); Comment, *Mississippi Water Conservation Law*, 28 Miss. L.J. 190, 223 (1957). See also *McCord v. High*, 24 Iowa 336, 342 (1868): "[t]he right which the owner of lands has to a water-course flowing over them . . . cannot be taken from him constitutionally for public use without just compensation."

ago, "[O]ne cannot step into the same river twice."⁶ Reflecting centuries of authority, the riparian's right to water is not considered a right to any definite amount of water but rather is a right to have water flow to him and to capture and use some of it.⁷

The framers of many of the water permit systems have sought to avoid constitutional challenge by making the provisions inapplicable to persons who have "vested" rights in the watercourse or by giving those persons preference in the establishment of those rights. But even these provisions may not survive the constitutional test since this preference to riparians is given only if actual beneficial use of the water has been made within a few years previous to the act. At common law, riparian rights did not lapse by mere non use.⁸

But finding the right to be "vested" does not preclude the state from taking it since any property right can be taken for appropriate public use through the power of eminent domain if accompanied by adequate compensation.⁹ The question then becomes not whether the state can impose the regulations but whether the owner must be compensated for his resultant loss.¹⁰

Several state courts have upheld systems altering existing rights of riparians. The Kansas Supreme Court in *State ex rel. Emery v. Knapp*,¹¹ upheld an appropriation law over the objection that the property of riparians had been taken without due process of law. The court indicated that the rights of the riparians were always subject to modification by the legislature to the extent required by the conditions and wants of the people. Likewise, in *In re Hood River*,¹² the Oregon Supreme Court upheld sections of a statute which re-defined "vested" rights and preserved the riparian rights only to the extent of their use at the time of its enactment or shortly prior thereto.¹³

When water rights statutes cut off existing rights of riparians, however, they have been held unconstitutional. A Nebraska statute, for example, that nullified riparian rights except in the very smallest streams

6. As quoted in EDMAN, *THE USES OF PHILOSOPHY* 190 (Frankel ed. 1855).

7. Trelease, *Government Ownership and Trusteeship of Water*, 45 CALIF. L. REV. 638 (1957).

8. *E.g.*, Hargrave v. Cook, 108 Cal. 72, 41 P. 18 (1895).

9. See Dunham, *Griggs v. Allegheny County in Perspective: Thirty Years of Supreme Court Expropriation Law*, 1962 SUP. CT. REV. 63, 65-71.

10. N. HINES, *A DECADE OF EXPERIENCE UNDER THE IOWA WATER PERMIT SYSTEM* 77 (1966).

11. 167 Kan. 546, 207 P.2d 440 (1949).

12. 114 Ore. 112, 227 P. 1065 (1924).

13. The constitutionality of the Oregon code, regulating both used and unused rights, was again upheld by the Ninth Circuit in *California-Oregon Power Co. v. Beaver Portland Cement Co.*, 73 F.2d 555 (9th Cir. 1934), *aff'd on other grounds*, 295 U.S. 142 (1935). See 9 TEMP. L.Q. 354 (1935).

was invalidated.¹⁴ In California, parts of the 1913 California Water Code which (1) limited all water users to beneficial and reasonable uses, (2) limited the amount of water which could be used to irrigate each acre of cultivated land, and (3) provided for the loss of riparian rights upon non-use for ten years was likewise held unconstitutional as abridging riparian rights.¹⁵ The Idaho Supreme Court held that a statutory appropriation system could not override the constitutional provision which guaranteed the right to divert unappropriated waters.¹⁶

The ultimate question that must be resolved in determining the constitutional validity of a regulatory statute is whether or not the alteration involved is so drastic that it unreasonably changes the expectations normally flowing from the property interests affected thereby requiring that the community make restitution to the injured individuals.¹⁷ The fear of unconstitutionality has led one writer to suggest the use of a limiting curative provision.¹⁸ Such a statute would require all persons claiming rights to the use of waters as the result of interests acquired prior to the effective date of the act to file their claims with a commissioner before a certain date or their claims would be banned. A provision of this type is employed in the Mississippi statute,¹⁹ and this fact has no doubt contributed to the lack of litigation.²⁰

II. REGULATION OF WITHDRAWALS UNDER EASTERN PERMIT SYSTEMS

A. *Introductory Comments*

The framers of eastern permit systems were faced with two basic problems: first, the protection of unused rights of lower riparian owners and, second, the maintenance of sufficient flexibility to provide for future adjustments if the economic well-being of the area demands them.

The guidelines for these permit systems have generally been left very broad by the legislatures for the purpose of allowing the agency to which the regulatory authority is delegated to devise a general water resources conservation program as a basis for the issuance of permits for withdrawals from the watercourses of the state. The primary goal of

14. *Clark v. Cawbridge & Arapahoe Irrigation & Improvement Co.*, 45 Neb. 798, 64 N.W. 239 (1895).

15. *Herminghaus v. Southern Cal. Edison Co.*, 200 Cal. 81, 252 P. 607 (1926).

16. *Sand Point Water & Light Co. v. Panhandle Dev. Co.*, 11 Idaho 405, 83 P. 347 (1905).

17. See Fisher, *Due Process and the Effect of Eastern Appropriation Proposals on Existing Rights, With Special Emphasis on the Michigan Proposal*, THE LAW OF WATER ALLOCATION 441, 474 (1958).

18. N. HINES, *supra* note 10.

19. See, e.g., MISS. CODE ANN. §§ 5956-01 to -30 (Supp. 1966).

20. See text following note 98 *infra*.

these acts is to provide greater certainty than is possible under the reasonable use theory yet still retain flexibility through the establishment of an administrative agency to make realistic long-range plans for the conservation and wise use of water resources and the elimination of waste. However, varying local pressures, needs, and traditions have caused a great many differing systems to be enacted despite the attempts to bring about a uniform approach to water use regulation. In general, these systems may be divided into compulsory permit systems and permissive permit systems. The compulsory permit systems, in turn, can be divided into two categories: general compulsory permit systems and compulsory permits for special problem areas.

B. Overall Compulsory Permit Systems

1. Iowa's Permit System

The most far-reaching scheme of regulation in the East has been adopted by Iowa. In 1957 the Iowa legislature passed a water rights law establishing a permit system and regulating rights to both surface and ground water.²¹ Though the law purports to leave unimpaired all "vested rights,"²² it regulates both existing and unused rights to water. In this sense it goes beyond many state statutes which specifically exempt water rights being exercised at the time of their enactment.²³

The law requires that all substantial uses of water be "beneficial," *i.e.*, the application of water to a useful purpose inuring to the benefit of the water user and subject to his dominion and control.²⁴ The law prohibits the diversion, storage, or withdrawal of water for most substantial uses from any natural watercourse, underground basin or watercourse, drainage ditch, or settling basin (except for ordinary household purposes and use for domestic animals) without a permit. The administering agency may suspend the operation of permits if necessary during an emergency and establish priorities for distribution thereby.²⁵ These permits have a general limitation of ten years.

The Iowa permit system is similar in many ways to western regulatory systems.²⁶ Both include an administrative agency to regulate water uses, recognition of the rights on non-riparians to use water, and

21. IOWA CODE § 455 A (1965).

22. IOWA CODE § 455 A. 21 (1965).

23. *E.g.*, KAN. GEN. STAT. ANN. §§ 820-701 (d) (Supp. 1959); MISS. CODE ANN. §§ 5956-02(g) (2)-(3), -04(2) (Supp. 1966); MODEL WATER USE ACT § 303 (2) (1958).

24. IOWA CODE § 455 A. 1 (1965).

25. IOWA CODE § 455 A. 28 (3) (1965); the same power is granted the Commissioner in the MODEL WATER USE ACT §§ 501, 502 (1958).

26. N. HINES, *supra* note 10, at 23.

use of the broad standard of "beneficial use" rather than "reasonable use" in judging the legality of the use. However, the Iowa permits are for a maximum of ten years, while the western approach is to grant permanent rights; also priorities are not established under the Iowa system as they are in many western states. In addition, the Iowa system embodies the concept of a protected minimum stream flow, a concept foreign to the appropriation doctrine.

It is difficult to evaluate the Iowa permit system even after more than a decade of operation. An impressive report of experience under the system concluded:

One factor that must constantly be kept in mind in evaluating this discussion of the Iowa experience is the circumstance that this water allocation scheme, born in the drought years of the mid 1950's, has had its infancy blessed with nearly a decade of relatively abundant water supplies.²⁷

On June 30, 1965, there were 1586 permits in force in the state. Primary uses were: industrial, material production-298; irrigation, farms-422; municipal-105; storage-523.²⁸

The Iowa National Resources Council—the administering agency—has maintained flexibility in the application of the statute. For example, a great many farm ponds fall technically within the statute,²⁹ yet because of their size have little effect on overall water resources. Consequently the Council has initially exempted all impoundments storing less than ten acre-feet of water.

The statute directs that the standard for determining the disposition of applications is one of beneficial use and is to be applied in a broad manner. The Commissioner has not sought to discriminate on the basis of differences among beneficial uses; if the applicant can show his use is beneficial, he will receive a permit. The effect of this policy, along with abundant rainfall in the state, has been that in ten years of operation only two applications for permits have been denied. Both of these involved only the disposition of drainage waters. Not a single application to divert, store, or withdraw water has been denied.³⁰

One of the major problems faced by the Iowa Council has been in determining what uses are in fact consumptive. Generally, only irrigation uses have been designated consistently as being consumptive. However, many municipal and industrial users actually consume substantial amounts

27. *Id.* 96.

28. *Id.* 31.

29. IOWA CODE § 455 A. 25 (2) (1965).

30. N. Hines, *supra* note 10, at 23.

of water and probably should be classified as consumptive users to guarantee a protected flow in the affected streams.³¹

2. Model Water Use Act

The Model Water Use Act was drafted after extensive studies by the Legislative Research Center at the University of Michigan Law School and was approved in 1958 by the National Conference of Commissioners on Uniform State Laws.³² It has many similarities to the Iowa statute.

In general, the Model Act contemplates the creation of a state water resources agency and the issuance of permits for some definite period of time (fifty years is the suggested maximum). It also provides for the exemption of domestic uses and for preservation of other existing uses. Of particular interest is the fact that the act would specifically eliminate the acquisition by prescription of rights to use water. An optional provision of the act would allow the Commission to award permits among competing applicants according to the standard of beneficial use without regard to priority in time of application.³³ The act also specifies that each permit be issued subject to a condition that the authorized use must not interfere substantially or materially with domestic uses, preserved pre-existing uses, or uses covered by previously issued permits. It has been enacted only in Hawaii where it was accepted in modified form affecting only ground water.³⁴

3. Other Eastern States

a. Minnesota

In 1937, the Minnesota legislature adopted a permit procedure for water use.³⁵ The system is an extensive one under which the Minnesota Division of Waters considers applications and the Conservation Commissioner grants permits which are prerequisites for all water uses except :

- 1) domestic uses ;

31. Davidson, *Demands for and Uses of Water in Industry*, IOWA'S WATER RESOURCES, USES, AND LAWS. 71 (Timmons, O'Bryne & Frevert ed. 1956). A second potential major problem, determining the level of flow in Iowa, has been largely eliminated by the work of the United States Geological Survey which maintains flow gauging stations on about one hundred streams and has records covering a twenty-five year period. During time of water shortage, the Commissioner's office is kept informed of stream gauge readings and provides permit holders with a fixed standard to determine the protected flow at these points of withdrawal. The Commissioner may suspend operation of a permit in an emergency without a hearing. IOWA CODE § 455 A (1965).

32. MODEL WATER USE ACT (1958).

33. *Id.* § 407(d).

34. HAWAII REV. LAWS §§ 87 A-B (1965).

35. MINN. STAT. ANN. § 105.39 (1965).

- 2) uses having any purposes originating within the geographical limits of a municipality; or
- 3) beneficial uses and rights in existence on July 1, 1937.

There has been considerable controversy as to whether the third exception was meant to exclude riparians effecting beneficial uses of water at the time or whether it was meant to exclude all riparians regardless of whether or not they were making actual use of the water—that is, it is not clear whether it is only rights actually being used or common law property rights, whether used or not, that are protected.³⁶ The exemption of water used within municipalities precludes control over many large industrial concerns, while uses by farmers for irrigation are regulated.

The system fails to establish any priority of water uses in issuing permits, but the abundance of water in Minnesota has averted any real problems of competing uses. The permits do little to enhance the security of the rights of the users since they may be terminated without notice if it is in the interest of the public health and welfare or if the use or appropriation adversely affects the rights of others.

b. *Wisconsin*

The Wisconsin Public Service Commission was given legislative authority to issue permits in Wisconsin in 1935³⁷ although the first permit was not issued until 1950.³⁸ The permit statute applies only to irrigators and other agricultural users (industrial, municipal and recreational users are excluded).

In a significant recent case, the Wisconsin Supreme Court held that when the entire flow of a stream was being beneficially used, every beneficial user of water, whether injured by a proposed diversion or not, must consent to the diversion of water for agricultural irrigation or the Commission has no power to issue a permit.³⁹ However, if the Commission determines that all of the flow is not being beneficially used, then there is "surplus water" and consent from lower riparians is unnecessary.

c. *Maryland*

In 1934 Maryland provided for a general permit system to be

36. The right of a riparian owner to use water is generally held to be unaffected by his failure to exercise his right. *Reeves v. Backus-Brooks Co.*, 83 Minn. 339, 86 N.W. 337 (1901).

37. WIS. STAT. ANN. § 31.14 (Supp. 1965).

38. "It was even more strange to discover that this constituted the only application that had been made." Coates, *Present and Proposed Legal Control of Water Resources in Wisconsin*, 1953 WIS. L. REV. 256, 259.

39. *Nekoosa-Edwards Paper Co. v. Public Serv. Comm'n*, 8 Wis. 2d 582, 99 N.W.2d 821 (1959).

administered by the Department of Geology, Mines and Water Resources.⁴⁰ The Department has power to grant permits according to general standards of public welfare and the statute does not impose time limits. The act is substantially diluted by exceptions exempting domestic, farming, municipal, and pre-existing uses.⁴¹

d. *Mississippi*

The Mississippi legislature in 1956 enacted a surface water appropriation act embracing the principal concepts of the California doctrine of prior appropriation.⁴² The act attempts to protect riparian rights exercised prior to its passage by giving these riparians the first opportunity to perfect their rights. Water allocations are granted by a Board of Water Commissioners which limits grants to that portion of available water which is in excess of an established minimum stream flow or lake level. The act is specifically limited in its application to surface waters.⁴³ It also exempts the "dredging or washing of sand and gravel" and the use of water for domestic purposes.⁴⁴ The system is appropriative in nature, since there are no time limits on the rights granted and they may be lost only by prescription, abandonment, or forfeiture. So far, the supply of surface water has apparently been sufficient for all competing users because not one case involving the act has reached the Mississippi Supreme Court nor have any requests for water allocation been rejected by the state due to water shortage. The Board of Water Commissioners had granted 1,247 requests for allocations through August 1966, for the following uses: domestic, industrial, irrigation, municipal, recreation, fish culture, and "other."⁴⁵

The system, which involves a 180 degree switch from riparianism to an almost pure system of prior appropriation, has been criticized by a Mississippi authority as a "stop-gap policy" that "does little to prevent water shortages, or to stimulate greater utilization of a normally abundant water supply."⁴⁶

C. *Compulsory Permits Geared to Needs of Problem Areas*

Some states have enacted statutes which require compulsory permits only in regions specifically designated as problem areas. Generally these

40. MD. STAT. ANN. art. 96A §§ 11-18 (Supp. 1966).

41. *Id.* art. 96A § 11.

42. MISS. CODE ANN. §§ 5956-01 to -30 (Supp. 1966).

43. *Id.* § 5956-01 (c).

44. *Id.* § 5956-03.

45. Unpublished information supplied by the Board of Water Commissioners, Sept. 16, 1966.

46. Champion, *Altering a System of Water Rights—Look Before You Leap*, LECTURES ON LAW IN RELATION TO WATER RESOURCES USE AND DEVELOPMENT 26 (Institute of Water Resources Research, University of Connecticut, March, 1967).

acts do not attempt to alter the existing uses of water but merely regulate the enlargement and future use in those areas.

1. *New Jersey*

In statutes applicable to both surface and ground water, New Jersey requires permits for those who divert or obtain substantial amounts of water in areas delineated by the Water Policy and Supply Council—areas where consumptive surface water diversions require regulations in the interest of residents within the area of the watershed or where ground water diversions exceed or threaten to exceed natural replenishment.⁴⁷

The ground water law exempts pre-existing diversions, while the surface water law exempts public water supplies and gives priority to pre-existing diversions. A twenty-five year maximum term is prescribed for surface water permits which may be issued only for diversions that do not interfere with low flows (average minimum daily flows).

2. *Indiana*

Indiana has similar legislation dealing with large withdrawals of ground water in designated problem areas.⁴⁸ The Department of Conservation is authorized to designate problem areas. Withdrawals of more than 100,000 gallons per day may not be made from such areas without a permit. Specifically exempted from the terms of the statute are utility companies and those quantities of water being used at the time the area is designated as restricted.⁴⁹ In granting these permits, the Department is instructed by the legislature to consider the effects of a withdrawal on future supplies in the area, on present users of ground water in the area, and on the general health and best interest of the public.⁵⁰ It is understood that, ten years after the enactment of the statute, no areas had as yet been designated as problem areas.⁵¹

3. *Florida*

Florida, like New Jersey and Indiana, provided for compulsory permits in problem areas in its 1957 Water Resources Law. The law was made applicable to surface water in lakes and streams as well as to ground water.⁵² The law, as amended in 1963, provides a somewhat cumbersome procedure for establishing water regulatory districts con-

47. N. J. STAT. ANN. §§ 58:1, 58:4A-2 (Supp. 1966).

48. IND. ANN. STAT. §§ 27-1301 to -1316 (Burns Supp. 1965).

49. *Id.* § 27-1305.

50. *Id.* § 27-1305.

51. There has been as yet no need to declare the existence of problem areas. Interview with Charles H. Bechert, Assistant Chief, Division of Water, Department of Natural Resources, Dec. 13, 1967.

52. Fla. Laws, 1957, ch. 57-380, § 11.

forming as nearly as practicable to hydrologically controllable areas⁵³ and provides for the promulgation of appropriate rules and regulations by these districts to control the use of water in such areas.⁵⁴

The invocation of water use regulations in critical areas is dependent upon the creation of water regulatory districts. The law, as enacted in 1957, authorized the establishment of such districts by the State Board of Conservation.⁵⁵ Early in 1959, the Attorney General, in his capacity as Attorney for the Board, prepared and promulgated a petition form for use by groups interested in forming such districts. The first petition, received in June 1959,⁵⁶ did not result in the creation of a district, and apparently no further petitions were received until 1961 when "Water Regulatory District Number One" was established in a southwest county of the state.⁵⁷ Because of objections raised by a neighboring county, however, the district was limited solely to the county seeking the regulation.⁵⁸ There were strong objections to the initial attempts to promulgate a "Water Code" for the District⁵⁹ and the proposed regulations were never adopted.⁶⁰

In 1963, the Florida legislature amended the 1957 Water Resources Law to give authority to "water management districts" to create the water regulatory districts which the State Board of Conservation previously had exclusive power to establish.⁶¹ The water management district board would become the governing board of any water regulatory districts it created.⁶²

Citizens within the district then urged the creation of a water regulatory district by the Southwest Water Management District, a

53. FLA. STAT. §§ 373.144, 373.151 (1965).

54. FLA. STAT. § 373.171 (1965) grants authority to these local districts to: (a) Establish rules, regulations, or orders affecting the use of water as conditions warrant and forbidding the construction of new diversion facilities or wells, the initiation of new water uses, or the modification of any existing uses, diversion facilities, or storage facilities within the affected area; (b) Regulate the use of water within the affected area by apportioning, limiting or rotating uses of water, or by preventing those uses which the local board finds have ceased to be reasonable or beneficial; (c) Make other rules, regulations, and orders necessary for the preservation of the interests of the public and of affected water users.

55. Fla. Laws, 1957 ch. 57-380 § 8(a).

56. 3 FLA. WATER NEWS, July 1961, at 1.

57. *Id.* Nov. 1961, at 3.

58. *Id.*

59. 4 FLA. WATER NEWS, Aug. 1962, at 1.

60. Letter from A.O. Patterson, Director, Division of Water Resources & Conservation, Florida Board of Conservation, July 29, 1966, on file in Department of Water Resources, College of Law, University of Florida.

61. Fla. Laws 1963, ch. 63-336, § 4; FLA. STAT. § 373.142 (1967).

62. Fla. Laws 1963, ch. 63-336, § 5; FLA. STAT. § 373.144 (1967).

multi-county agency.⁶³ Public hearings were held in 1963 at which the creation of a water regulatory district coextensive with the boundaries of the Southwest Water Management District was urged.⁶⁴ Despite the urging of state experts, the Southwest Water Management District decided that further studies were necessary⁶⁵ and thus far no water regulatory district has been established. As a result, "Water Resources Regulatory District No. 1," is the only water regulatory district that has been created in Florida,⁶⁶ but that district is not presently active and "no regulations have been set up."⁶⁷

The history of the "Water Resources Regulatory District No. 1" dispute illustrates the great difficulties that may be encountered in any attempt to establish a water regulatory district under Florida's present law. As one writer has put it, "[t]raditionally, riparians have been reluctant to police their stated prohibitions against waste. . . ."⁶⁸ Nevertheless, the need for such districts is sufficiently evident so that Florida's Secretary of State, the Vice-Chairman of the State Board of Conservation, recently called for the establishment of such districts "on a statewide basis."⁶⁹ One thing that may well be indicated is a need for further reconsideration of the complicated legal requirements for establishing such districts.

D. *Permissive Permit Systems*

In a few states, legislation exists which permits administrative agencies to authorize the withdrawal and use of excess water as a means of encouraging further use of the resource. In Ohio, for example, while there is no permit system governing the allocation of either surface or ground waters, legislation enacted in 1914⁷⁰ provides for the organization of conservancy districts; these districts may be created for the regulation of the flow of streams and providing of a water supply for various uses.⁷¹ The districts created are a legal subdivision of the state and operate on a regional basis. They do not alter or modify water use rights in existence and in use at the time the district is organized. When increased water is made available through improvements in the districts,

63. 5 FLA. WATER NEWS, Sept. 1963, at 1.

64. Statement of Director John Wakefield for the Division of Water Resources, October 9, 1963; statement of Dr. Robert Vernon, Director, Division of Geology, October 9, 1963.

65. 7 FLA. WATER NEWS, Feb. 1965, at 3.

66. *Supra* note 60.

67. *Id.*

68. Champion, *supra* note 46, at 25.

69. IN THE CAPITOL, (Official Publication of the Florida Secretary of State). Vol. V, Nos. 6, 7, at 1, col. 2.

70. 104 LAWS OF OHIO 14 (1914).

71. OHIO REV. CODE ANN. § 6101.04 (Page Supp. 1966).

it becomes property for which use permits up to a period of fourteen years may be issued and for which reasonable charges may be required.⁷²

In Florida the State Board of Conservation and local water management districts are authorized to issue permits for diversions of excess water.⁷³ This approach has one apparent advantage over the methods utilized in other jurisdictions in that there is a provision for permits for diversions of excess water *beyond* riparian land.⁷⁴ The granting of these permits is tied to the preservation of minimum flows and minimum levels of lakes and ground water.⁷⁵ To date, the Board of Conservation has not seen fit to delegate this power to water management districts nor have any permits been issued, although the authority has been available for over ten years. Municipalities, which consistently use water beyond riparian or overlying land, have failed to apply for permits to do so. Perhaps the fear of being denied such permits or being placed in low priority with regard to guaranteed usage in time of shortage has been partially responsible for this failure,⁷⁶ but the fact remains that the permits are not being issued and the purpose of the law, to encourage where needed the orderly development of the use of excess water, is thus being thwarted.

E. Use of Water Beyond Riparian or Overlying Land

In the East, relatively little attention has been given to the problem of the rights of non-riparians to use of water. Traditionally, the western doctrine of prior appropriation provided the means for those who did not border on the water to utilize it. Under strict riparian law, on the other hand, it is illegal to divert water for use on nonriparian land;⁷⁷ even a riparian owner is not entitled to make use of the water beyond his riparian land.⁷⁸ Consequently, if there is more water normally available in a watercourse than is needed for use on riparian land, the remainder goes to waste. This is what is happening to much of the water in eastern watercourses. Moreover, in times of flood, a stream may carry additional large quantities of water that are surplus to riparian needs.

Legislation providing authority for the capture of surplus flood water

72. *Id.* § 6101.24.

73. FLA. STAT. § 373.141 (1965).

74. *Id.* § 373.141(1)(a); *See* Maloney, *Florida's New Water Resources Law*, 10 U. FLA. L. REV. 119, 138, 141 (1957).

75. FLA. STAT. § 373.141(a) (1965).

76. Conference with the firm of Black, Cross & Eidsniss, Florida sanitary engineers, July 9, 1967.

77. *See* 1 C. KINNEY, IRRIGATION AND WATER RIGHT: §§ 516, 517 (2d ed. 1912).

78. *Id.* § 517.

has been passed in the riparian states of Florida,⁷⁹ Kentucky,⁸⁰ Minnesota,⁸¹ Virginia,⁸² and Wisconsin,⁸³ and a similar statute was in force for a time in North Carolina.⁸⁴ Some of the statutes were narrowly conceived and permitted use of this water on riparian land only,⁸⁵ but such limitations become less restrictive if the term "riparian land" is liberally defined. Thus, "riparian land" has been defined in Virginia as "land which is contiguous to and touches a watercourse. It does not include land outside the watershed of the watercourse. Real property under common ownership and which is not separated from riparian land by land of any other ownership shall likewise be deemed riparian land, notwithstanding that such real property is divided into tracts and parcels which may not be bound upon the watercourse."⁸⁶ An alternative and perhaps better approach is to provide specifically in the legislative authorization for capture of surplus water that it can be diverted beyond riparian or overlying land. This is the approach taken in the Florida statute.⁸⁷

The western approach, which allows voluntary transferability among riparians and non-riparians, offers to the user a fixed quantity of water, tenure certainty, and as firm a right of physical certainty as possible, without requiring him to buy riparian land.⁸⁸ If such transferability were imported into the East, a desirable limitation would be to apply the doctrine of reasonable use to the transferred right to prevent a few large

79. FLA. STAT. § 373.141(1) (1965).

80. KY. REV. STAT. § 262.690(3) (1963), discussed in KENTUCKY RESEARCH PUBLICATION No. 42, WATER RIGHTS LAW IN KENTUCKY 9-11 (1956).

81. MINN. STAT. §§ 105.37-64 (1961). For comments on the Minnesota and Wisconsin statutes see Ellis, *Some Current and Proposed Water-Rights Legislation in the Eastern States*, 41 IOWA L. REV. 237, 239-41 (1956).

82. VA. CODE ANN. §§ 62-94.1-.12 (Supp. 1966).

83. WIS. STAT. § 31.18 (1965).

84. N. C. GEN. STAT. § 113-8.1 (1952). For a critical discussion of the weaknesses in this statute see Ellis, *Some Legal Aspects of Water Use in North Carolina*, THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 41-49 (1958). The statute has since been repealed.

85. VA. CODE ANN. § 62-94.4 (Supp. 1966). The Wisconsin statute has been similarly interpreted. Ellis, *supra* note 84, at 239-40 n.112.

86. VA. CODE ANN. § 62-94.1(5) (Supp. 1966).

87. FLA. STAT. § 373.141(1) (1965). In *Tilden v. Smith*, 94 Fla. 502, 510, 113 So. 708, 711 (1927), the Florida Court indicated by way of dictum, quoting a California case, *Gallatin v. Corning Irrigation Co.*, 163 Cal. 405, 126 P. 864 (1912) that flood water from streams that is of no substantial benefit to a riparian owner "may be appropriated by any person who can lawfully gain access to the stream, and may be conducted to lands not riparian, and even beyond the watershed of the stream, without the consent of the riparian owner and without compensation to him." The legislature expanded this dictum, authorizing the capture, storage, and use of all water in excess of existing reasonable uses and for diversion of such waters beyond riparian or overlying land.

88. Trelease, *A Model State Water Code for River Basin Development*, 22 LAW & CONTEMP. PROB. 311, 315 (1957).

holders from abusing such transfers.

A solution to this problem is attempted in the Iowa system by treating water use permits as appurtenances to land which must be used on a specified piece of land.⁸⁹ These permits may be granted to either riparians or non-riparians and a holder may transfer his interest in the permit by "conveying, leasing, or otherwise transferring the ownership of the land described in the permit."⁹⁰ While this limitation solves a part of the problem, it does not provide an answer to municipal needs where water necessarily will be used beyond limited land described in the permit." While this limitation solves a part of the problem, it does not provide an answer to municipal needs where water necessarily will be used beyond limited land holdings. This is a very real problem because there is evidence that in the East many non-riparians, especially municipal users, have made extensive consumptive use of water from streams⁹¹ and of ground water beyond overlying land.⁹²

F. *Advantages and Disadvantages of Eastern Permit Systems*

The goal in making rules to govern water use is twofold: enabling the water to be put to its maximum beneficial use and insuring that the right of each person in the use of the water is protected. The riparian doctrine has never recognized an unqualified right in any person to the use of a specified quantity of water at a given time for a particular purpose; the right has always been dependent on the circumstances existing at any given time.⁹³ The property interest is a right to make use of the water under a system of reciprocal rights. The system may change; as long as the change is pursued in a reasonable and just manner, is in the public interest, and does not inequitably disturb the reasonable expectations of those with the right to make use of water, the change is probably not an invasion of the existing property rights.

The permit system has the advantage of striking a measure of balance between prior appropriation and riparian rights. It allows the permit holders some certainty by reason of their permits and assures the public of some flexibility by the fact that the permits are subject to expiration and review. Additionally, the permit systems possess at least three other advantages over the common law method of rights determination:

89. IOWA CODE § 455 A. 20 (1965).

90. IOWA CODE § 455 A. 30 (1965).

91. See Dufor & Becker, *Public Water Supplies of the 100 Largest Cities in the United States*, 1962, GEOLOGICAL SURVEY WATER SUPPLY PAPER 1812, at 9 (1964).

92. *Id.*

93. Lauer, *The Riparian Right as Property*, WATER RESOURCES AND THE LAW 133, 208 (1958).

- 1) the agency makes its decisions before a dispute has erupted into litigation, whereas a court generally can act only after such a dispute arises;
- 2) the agency makes its decision in light of all water uses and users and in light of the public interest, whereas a court is more often limited to the interests of the litigators before it; and
- 3) members of the decision making board, unlike judges or jurors, are experts on water and their decisions can be made with long-range plans for the wise use and conservation of water resources in mind.

III. WESTERN CONSUMPTIVE USE REGULATIONS

The right to obtain water comes automatically as an incident of the ownership of land under the eastern riparian doctrine. The western states, following the appropriative system, all provide a formal means for acquiring water rights, and most do it through some type of permit system.⁹⁴ The details of these systems vary widely, but all require a determination by some administrative body before granting the permit. The importance of these administrative determinations varies widely according to the state statutes,⁹⁵ *e.g.*, in one state the administrative agency serves only as an informational body.⁹⁶

A. Representative Western Systems

1. Judicial Discretion—Colorado

The Colorado system of water rights adjudication embraces a large amount of judicial discretion in its statutory scheme.⁹⁷ In any district where water rights have not been adjudicated, a claimant may petition the district court of the proper county to make an original adjudication. All other claimants are given notice to appear and a decree is issued determining the priorities of rights. The State Engineer is required by statute to certify to the court a list of water filings in his office, to obtain from the water commissioner or irrigation division engineer a list of

94. ALASKA STAT. §§ 46.15.010—46.15.270 (1966); ARIZ. REV. STAT. ANN. § 45-142 (Supp. 1966); CAL. WATER CODE § 1225 (West 1956); IDAHO CODE ANN. § 42-202 (Supp. 1965); KAN. GEN. STAT. ANN. § 82a-709 (Supp. 1961); NEB. REV. STAT. ANN. § 46-233 (Supp. 1965); NEV. REV. STAT. § 533.325 (Supp. 1963); N.M. STAT. ANN. § 75-5-1 (Supp. 1965); N.D. CENT. CODE. § 61-04 (Supp. 1965); 82 OKLA. STAT. ANN. § 21 (Supp. 1966); ORE. REV. STAT. § 537 (Supp. 1965); S. D. CODE, § 61.0110 (Supp. 1960); TEXAS REV. CIV. STAT. ANN., art. 7492 (Supp. 1966); UTAH CODE ANN. § 73-3-1 (Supp. 1965); WASH. REV. CODE ANN. § 90.03.250 (Supp. 1966); WYO. STAT. ANN. § 41-201 (Supp. 1965).

95. Compare WYO. STAT. ANN. §§ 41-165 to -200 (Supp. 1965) with ORE. REV. STAT. ANN. §§ 539.020-.220 (Supp. 1965).

96. COLO. REV. STAT. ANN. §§ 147-9-1 to -10-9 (Supp. 1961).

97. *Id.* §§ 147-9-1 to -10-9.

owners or claimants of diversion and storage structures, and to send to these persons a notice of the proceedings.

The district court has complete jurisdiction over the action and the state administrative organization has only a duty to furnish names of interested parties. This judicial determination is more analogous to the eastern method than that of the other western states; it has not been adopted in other western states.

2. *Administrative Control—Wyoming*

The appropriation of water in western states was traditionally made by diversion and use. The first statutory plan for appropriations under an administrative program was the Wyoming plan.⁹⁸ This plan required, as an exclusive means of acquiring an appropriative right, a formal application to the State Engineer for a permit. The permit authorizes the holder to construct works, to divert water, and to apply it to intended beneficial uses. If statutory requirements are fulfilled, the holder is entitled to a certification of appropriation from the Board of Control evidencing the state's approval of his acquired right. The Board of Control in Wyoming is an administrative agency composed of the State Engineer and the superintendents of the four water divisions. It "adjudicates and determines" the rights to the use of streamflow.⁹⁹

Studies as to the rights in any given stream are initiated by the State Engineer who makes a hydrographic survey of the stream system. The Board requires all claimants to submit detailed statements as to their rights and allows them to testify orally. The Board rules upon the priority of rights to the use of the streamflow. This decision is conclusive, subject to appeal to the district and state Supreme Court.¹⁰⁰

Many of the western states have followed the lead of Wyoming and imposed administrative control over water rights to provide an orderly method for obtaining unappropriated waters. The administrative method provides numerous advantages over the pure judicial system:¹⁰¹

- (a) it requires application to an experienced state agency for a specific quantity of water;
- (b) the application is denied if the water is not available or if the grant will conflict with the public interest; and

98. Wyo. LAWS ch. 8 (1890-91).

99. WYO. STATS. ANN. §§ 41-165 to -200 (Supp. 1965).

100. The constitutionality of the legislation was sustained in *Farm Inv. Co. v. Carpenter*, 9 Wyo. 110, 61 P. 258 (1900).

101. Hutchins, *Background and Modern Developments in State Water-Rights Law*, 1 WATERS AND WATER RIGHTS 57, 113 (A. Smith ed. 1967).

(c) accurate details of all proposals are accessible in a central state office.

3. *Combined Administrative and Judicial Regulation*

Many of the western states have combined administrative and judicial regulation into one system. For example, the Oregon water code, created in 1909, consists of two parts: a preliminary administrative determination and a mandatory judicial procedure.¹⁰² The State Engineer, on petition of water users, is authorized to make a determination of rights on the stream system based on a hydrographic survey, maps and irrigation data, and testimony as to claims. This administrative order of determination is filed in the circuit court where claimants may file exceptions. If none is filed, the State Engineer's determination is affirmed. The final adjudication of the court, either affirming or modifying the Engineer's order, is conclusive as to all prior rights and the rights of existing claimants lawfully included.

The system has been upheld against constitutional objections¹⁰³ and the United States Supreme Court, in a case involving the Oregon system found: "[t]hat the state, consistently with due process of law, may thus commit the preliminary proceedings to the board and the final hearing and adjudication to the court. . . ."¹⁰⁴

4. *The California Approach*

The California appropriation statute¹⁰⁵ is in many ways typical of the western systems. The act grants to the State Water Rights Board the power to administer the unappropriated, or unused, water of the state.¹⁰⁶ The Code distinguishes between the ownership of water itself and the ownership of rights to its use: "[a]ll water within the State is the property of the people of the State, but the right to the use of water may be acquired by appropriation in the manner provided by law."¹⁰⁷

Because California has a mixed system of riparian and appropriative law,¹⁰⁸ the act seeks to avoid constitutional problems by exempting existing rights.¹⁰⁹ All permits and licenses issued by the Board are declared to be "subject to vested rights."¹¹⁰ The determination as to

102. ORE. REV. STAT. ANN. §§ 539.010-220 (Supp. 1965).

103. *In re Hood River*, 114 Ore. 112, 227 P. 1065 (1924).

104. *Pacific Live Stock Co. v. Lewis*, 241 U.S. 440, 449 (1916).

105. CAL. WATER CODE §§ 1200-1801 (West 1956).

106. For detailed discussion of the Board, see Holsinger, *Procedures and Practice Before the California State Water Rights Board*, 45 CALIF. L. REV. 676 (1957).

107. CAL. WATER CODE § 102 (West 1956).

108. W. HUTCHINS, CALIFORNIA LAW OF WATER RIGHTS 40 (1956).

109. Underground percolating water is similarly not subject to the jurisdiction of the Board. CAL. WATER CODE § 1200 (West 1956).

110. CALIFORNIA STATE WATER RIGHTS BOARD, RULES, REGULATIONS AND INFORMATION PERTAINING TO APPROPRIATION OF WATER IN CALIFORNIA 33 (1956).

what constitutes "vested rights" is perhaps one of the most difficult questions the Board and ultimately the courts are called upon to answer. The Supreme Court of California has expressly stated that in carrying out its functions the first duty of the Board is to protect the existing rights.¹¹¹

The procedure for securing a right of appropriation is initiated by the filing of an application form with the Board; this fixes the priority date to which the right to use the water will "relate back."¹¹² The Board then issues a permit. This permit expresses the consent of the state to the future acquisition of a right by appropriation under the terms of the permit¹¹³ and it sets forth the prescribed criteria pursuant to which the future use must conform.¹¹⁴ After the use under the permit has fully matured, a representative of the Board inspects the extent of continuous water use¹¹⁵ and a license may then be issued.¹¹⁶ No hearing is required for issuance of the license but a hearing must be held to revoke or deny issuance.¹¹⁷ Once the permit has been issued and water is used in conformance with it, a right to the use of water vests to the extent of such use.¹¹⁸ This right of use is subject to loss by forfeiture upon a failure to use the water for a period of three successive years.¹¹⁹

The Board is granted permission to allow "appropriation for beneficial purposes of unappropriated water under such terms and conditions as in its judgment will best develop, conserve, and utilize in the public interest the water sought to be appropriated."¹²⁰ The act specifies that domestic uses shall be first in priority and irrigation second;¹²¹ additional priorities are left to the Board to determine.

In any suit brought "for determination of rights to water" the trial court may refer the matter to the State Water Rights Board for investigation and determination. The Board's determination is subject to attack in the court by opposing parties. The California Supreme Court has sustained the constitutionality of the plan.¹²²

111. *Meridian, Ltd. v. San Francisco*, 13 Cal. 2d 424, 450, 90 P.2d 537, 550, *rehearing denied*, 91 P.2d 105 (1939).

112. CAL. WATER CODE §§ 1450, 1455 (West 1956).

113. *Id.* § 1381.

114. *Id.* §§ 1391-92.

115. *Id.* § 1605.

116. *Id.* §§ 1610-11.

117. *Id.* §§ 1410, 1611.

118. *Id.* §§ 1390, 1455.

119. *Id.* § 1241.

120. *Id.* § 1253.

121. *Id.* § 1254.

122. *City of Pasadena v. City of Alhambra*, 33 Cal. 2d 908, 207 P.2d 17 (1949); *Fleming v. Bennett*, 18 Cal. 2d 518, 116 P.2d 442 (1941).

B. Comparison of Western and Eastern Consumptive Use Regulations

The predominant feature of the western system of prior appropriation is that a riparian or other owner can appropriate, in perpetuity, the right to use as much water as he can successfully divert and beneficially employ as long as his appropriation is prior to other users. This right of use may be lost only through abandonment and forfeiture. One of the principal advantages claimed for the appropriation system is that the users of water are more certain of their rights. Certainty of water rights has three different aspects: legal certainty, physical certainty, and tenure certainty.¹²³

Legal certainty, the most important aspect of real property law, is concerned with protection against the unlawful acts of others. The holder of appropriative rights generally is conceded to have more legal certainty than a riparian owner. The user in an appropriative state may rely on a water master for the administration of priorities, while the riparian must take the initiative in seeking court action which is often uncertain in its outcome.

The physical uncertainties of changing weather conditions and drought are equally applicable to riparians and appropriators.¹²⁴ Under the appropriation system, the physical uncertainty is greatly reduced for senior appropriators but correspondingly increased for junior appropriators who may have their supply completely cut off while the senior users get their full quotas. A number of western permit systems have sought to correct a part of this uncertainty by providing that, during emergencies, a special system of priorities will supersede the existing priorities. Domestic uses are given first preference, agricultural uses second, and commercial and industrial uses third.

Tenure certainty involves the protection of water rights against the lawful acts of others. Here the appropriative right appears advantageous, since it defines the amount of water, its priority, and place of diversion. Appropriators are protected against junior users and juniors against increases in use by senior users.

It is often claimed that the appropriative system leads to the most beneficial use of water by placing primary emphasis on encouraging the

123. Wantrup, *Concepts Used as Economic Criteria for a System of Water Rights*, THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 531 (Haber & Bergen ed. 1958).

124. Thomas Maddoch, Jr., Chief, Irrigation Operation Branch, U.S. Bureau of Reclamation, Symposium on the Law of Water Allocation in the Eastern United States, sponsored by the Conservation Foundation, Washington, D.C., October 5, 1956, stated: "The appropriation doctrine is presumed to set up water rights with finality and mathematical precision, but any man in the West where water use is fully developed has no idea as to his water rights."

sound development, wise use, conservation, and protection of water.¹²⁵ But western experience indicates that in many cases the effect of prior appropriation is to waste water that otherwise could be put to beneficial use. The earliest settlement of western valleys frequently occurred in downstream areas with the result that senior appropriators are located there. The streams supplying these areas often pass through arid regions where high temperatures and parched soil exact a heavy toll in evaporation and seepage losses. In the Frenchman's Creek area of Colorado, for example, it is necessary to reduce upstream pumping by 100,000 acre-feet of water per year to protect downstream uses of 15,000 acre-feet and at Beaver Creek a decrease of pumping upstream by 20,000 acre-feet would be necessary to protect a downstream flow of 1,000 acre-feet.¹²⁶ In addition, once an appropriator has begun using a certain amount of water, he will frequently continue to draw that amount even though it may be considerably more than he really needs, since failure to do so may result in loss of his appropriative right to the excess. In such cases, the system encourages waste and discourages use of new irrigation techniques requiring less water.¹²⁷

The appropriation doctrine tends to "freeze" a specific quantity of water to a specific tract of land in two ways, both of which appear undesirable for eastern adoption. First, the appropriative rights are granted in perpetuity and can be lost only by abandonment or statutory forfeiture. This element of inflexibility prevents more effective use by subsequent landowners. A periodic administration review, such as that provided by the Iowa system,¹²⁸ appears workable and more beneficial to the welfare of the entire community. The appropriative system is also inflexible in its method of apportioning water during times of drought. It would appear desirable to give the administrative authorities broad emergency power to suspend permits and apportion the water among all the users rather than allowing the senior appropriator to take his entire amount while the junior gets nothing.¹²⁹

IV. SUMMARY AND CONCLUSION

There is a strong movement in the eastern states, evidenced by the increasing number of permit systems, toward a modification of the riparian doctrine. This movement to modify the riparian system can be

125. SOUTH CAROLINA SOIL CONSERVATION COMMITTEE, *THE BENEFICIAL USE OF WATER IN SOUTH CAROLINA* 14-15 (1952).

126. Trelease, *A Model State Water Code for River Basin Development*, 22 *LAW & CONTEMP. PROB.* 301 (1957).

127. Fisher, *Western Experience and Eastern Appropriation Proposals*, *THE LAW OF WATER ALLOCATION IN THE EASTERN STATES* 75 (Haber & Bergen ed. 1958).

128. IOWA CODE § 455A.20 (1966 Supp.).

129. IOWA CODE § 455A.28 (2), (3) (1966).

characterized as a move toward certain elements of the appropriation doctrine. In seeking to make a more effective use of their water resources, the eastern states would do well to benefit by the experience of the West.

Up to the present time, the various common law doctrines have played a major role in the regulation (or nonregulation) of the consumptive use of water in the East. These doctrines are especially important in the area of private litigation. But in light of the rapidly increasing use of water and the corresponding threat of scarcity, statutory regulation has begun to assume a position of importance in the East.

Any discussion of eastern water law with respect to regulation of consumptive use of water must necessarily begin with a recognition of the close interrelationship of surface and ground water with consumptive use and pollution. One of the problems to be faced at the outset is the protection of minimum stream flows and lake and ground water levels. The amount of water required for pollution control, navigation, reasonable uses of lower riparian owners, and for the conservation of fish and wildlife must all be considered.

Administrative agencies must decide on the type of minimum flows and levels that need protection in a particular watershed if they are to formulate realistic rules for the issuance of permits for impoundments and diversions.¹³⁰ Failure to take this action might result in litigation that could upset or greatly restrict the usefulness of any permit system. In addition, adequate enforcement mechanisms must be developed, including the establishment of agents in the field to see that the provisions of permits are observed.¹³¹ Failure to plan properly for the test that will come when drought or increased demand for agricultural and industrial uses raises eastern use patterns past the level of available supply could cause untold economic harm and set back the development of a sound water management program in a particular jurisdiction for many years.

The experience of North Carolina is revealing. The failure of North Carolina to develop a workable permit system within the general guidelines provided by the 1951 legislature led to repeal of the enabling legislation in that state in 1961.¹³² The legislature's guidelines of

130. See, e.g., the provisions of the Small Watershed Act, 16 U.S.C. §§ 1001-09 (1964); see Morgan, *The Small Watershed Program*, 22 LAW & CONTEMP. PROB. 405 (1957); Note, *Small Watershed Development—Application of 1954 Federal Legislation to Kentucky*, 45 KY. L.J. 182 (1956).

131. See Champion, *supra* note 47, at 27 for a criticism of the shortcomings of the Mississippi system in this regard.

132. N. C. Laws 1961, ch. 315, *repealing* N.C. GEN. STAT. § 143-355 (Supp. 1959), which had transferred the permit authority from the Department of Conservation and Development to the Department of Water Resources. The authority was conferred on the Department of Conservation and Development by N.C. Laws 1951, ch. 1049, § 1,

"safety and public interest" were too broad to be meaningful and funds for planning and administration were not adequate.¹³³ In addition, the issuance of permits without hearings or field investigations apparently sometimes resulted in authorizations in excess of stream capacity.¹³⁴ The opportunity for North Carolina to develop a well-planned water use program was thus lost, perhaps irretrievably.

Most eastern states have long been fortunate in possessing ample water resources as compared to existing needs. But the grace period may be over. Dry cycles in these states will produce severe strains on their newly developing permit systems. Further study and development seems to be called for if these laws are to serve effectively their function of encouraging and increasing beneficial impoundments and protecting minimum stream flows and lake and ground water levels. Money will be required for adequate planning, field investigations, and policing. The more sophisticated the operation, the more expensive it will be. But the results will be worth the effort, whereas a half-hearted attempt may be worse than none at all. It is to be hoped that the states will respond while there is still time to develop comprehensive and fully integrated systems of water management to serve the best interests of all.

which appeared as N.C. GEN. STAT. § 113-8.1 (1958), until transferred to the Department of Water Resources by N.C. Laws 1959, ch. 779, § 3(c).

133. The operation of the North Carolina system is described in Ellis, *Some Legal Aspects of Water Use in North Carolina*, THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 189, 218-23 (Haber & Bergen ed. 1958).

134. Heath & Wicker, *Water Resources*, 28 POPULAR GOVERNMENT 21 (1961).