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A Modern Proposal for State Regulation of Consumptive Uses of Water

By Frank E. Maloney* and Richard C. Ausness**

As a nation, the United States is in the early stages of a developing water crisis. With an exploding population accompanied by great technological advances in industry and agriculture, America is using progressively more water each day; the increasing use threatens to exceed available supplies in the future unless available resources are properly managed.

As the demand for water grows, problems related to the equitable allocation of this important resource will likewise increase. The need that presently exists for an integrated and balanced approach to the problems of water consumption, pollution, navigation and recreation will become even more acute in the coming decades. Only legislation that takes these considerations into account will preclude the impending crisis. Such laws must be sufficiently flexible to permit the state to benefit from technological advances, rather than freeze the use of the resource into a pattern that may at some later date prove impractical. They must be based on interdisciplinary work with lawyer, hydrologist, ecologist and economist joining together to develop the soundest possible approach.

A Model Water Code has been drafted at the University of Florida in an attempt to provide a vehicle for comprehensive state regulation of water resources. The code consists of six chapters. The first creates a

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The preparation of this article has been supported by the Office of Water Resources Research Act of 1964. It is part of a chapter of the Model Water Code, which will be published as a book in the near future.


two-tiered administrative system comprised of a State Water Resources Board and a number of regional water management districts administered by governing boards. Chapter two subjects all consumptive uses of water, including existing uses, to regulation under a permit system; only domestic uses are exempt from regulation. Provision has also been made for competing applications and water shortages. Chapter three provides for well construction standards and the licensing of the well-drilling industry. Chapter four governs the construction of dams, impoundments and appurtenant works. Some of the prominent features of chapter five are its water quality plan with the water quality standards contained therein; construction permits for new outlets, disposal systems and treatment works; discharge permits; and the various enforcement powers available to both the state and local agencies. Chapter six is an optional chapter on weather modification.

This article reviews the essential elements of any regulatory system and introduces chapter two of the proposed Model Water Code as a basis for a state water resources program. While the authors have designed chapter two as part of an overall scheme for the regulation of water use and quality under a comprehensive state water plan, it can be treated in many respects as a self-contained unit and it is on this basis that chapter two is offered in this form.

I. Regulation of Consumptive Uses of Water

In the past, the common law standards of relative reasonableness under the reasonable use rules facilitated the adjustment of conflicts between uses in the eastern United States in accordance with the demands of each user and the dictates of the general public interest. With an ample supply of water, detailed statutory regulation was unnecessary.

Recently, however, criticism has been leveled at the common law riparian system because it restricts the use of stream water to riparian owners and requires that the water be used only on riparian land. Many critics feel that better use may frequently be made at other places by riparian or nonriparian owners. A further major criticism concerns the

3. Model Water Code § 2.03.
4. Id.
5. Id. § 2.05.
6. Id. § 2.09.
7. "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, Scope Note §§ 850-57 at 345-46 (1939).
8. See Fisher, Western Experience and Eastern Appropriation Proposals,
element of uncertainty associated with the reasonable use of water for nondomestic purposes. Because the reasonableness of each use is determined by the needs of other riparian owners, unforeseen conditions arise when others commence or enlarge uses despite long non-use of their rights. Additional uncertainty exists in those states that permit a riparian owner who is neither making nor intending to make use of the water to enjoin an existing use as unreasonable with regard to his right.

Another criticism of the riparian system relates to its lack of administrative controls. In many jurisdictions 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 economic loss when water use patterns of established industries are upset by later competing uses. Perhaps of greater concern is the water that is unused or devoted to less valuable uses when industries fearful of the economic consequences of a diminished water supply refuse to locate in the area. Due to their lack of expertise and the inefficiency of a case-by-case approach, the courts are not as capable of uniformity in the application of the law as a centralized administrative agency.

As population growth and technological development in agriculture and industry have made greater demands on eastern water supplies, the problem of maintaining stream flows and groundwater levels has assumed increasingly greater importance. Concern over the adequacy of existing laws in the face of emerging water resources problems has led many executive and legislative study committees to propose new methods of dealing with these problems.

A strong movement has developed in the eastern states, evidenced by the increasing number of permit systems, toward a modification of the riparian doctrine. Essentially, this movement has been toward certain elements of the appropriation doctrine of the western states. In seeking to utilize their water resources more effectively, therefore, the eastern states can certainly benefit from the experience of the West.


9. Id. at 79.
10. Id. at 80.
The western states all provide a formal means for acquiring water rights, and most do it through some type of permit system.\textsuperscript{15} These systems vary widely, but all require a determination by some administrative body as to the public interest involved before granting the permit. 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 he does so prior to other users. This right of use may be lost only through abandonment or 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: (1) legal certainty, (2) physical certainty and (3) tenure certainty.\textsuperscript{16}

Legal certainty, the most important aspect of real property law, is protection against the unlawful acts of others. The holder of appropriative water rights is generally 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 owner must take the initiative in seeking redress through the courts, a remedy which is often uncertain in its outcome.

The physical uncertainties of changing weather conditions and drought are equally applicable to riparian owners and appropriators.\textsuperscript{17} 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 quota. A number of western permit systems have sought to reduce this uncertainty by providing a special sys-


\textsuperscript{17} “The appropriation doctrine is presumed to set up water rights with finality and mathematical precision, but any man in the West where water is fully developed has no idea as to his water rights.” Address by Thomas Maddoch, Branch Chief, Irrigation Operation Branch, U.S. Bureau of Reclamation, speaking at the symposium on the Law of Water Allocation in the Eastern United States, sponsored by the Conservative Foundation, Washington, D.C., Oct. 5, 1956.
tem that supersedes normal priorities during emergencies; domestic uses are usually 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, as opposed to unlawful acts in the case of legal certainty. The appropriative right defines the amount of water to be used, its priority and the place of its diversion. Appropriators are protected against junior users and juniors against increases in use by senior appropriators.

It has been claimed that the appropriative system leads to the most beneficial use of water by placing emphasis on the sound development, wise use, conservation and protection of water. Experience indicates, however, 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. 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 the loss of his appropriative right to the excess. In such cases the appropriation system encourages waste and discourages the use of new irrigation techniques requiring less water.

18. E.g., Idaho Const. art. XV, § 3; Utah Code Ann. § 73-3-21 (1968).
20. Fisher, supra note 8, at 23.
22. Fisher, supra note 8, at 95. The Model Water Code’s renewable permit approach could not be imposed upon the existing structure of water rights in most western states. The prior appropriation system contemplates a form of permanent water right (as long as a beneficial use is made) which operates within a priority system. Existing appropriations are considered fixed property rights and in some states prior appropriation is authorized by the state constitution. A switch from prior appropriation to some other system of water law would require wholesale condemnation of existing appropriative rights and possible constitutional amendment in many western states.
The appropriation doctrine tends to “freeze” a specific quantity of water to a specific tract of land in two ways, both of which are 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 administrative review appears more workable and beneficial to the welfare of the entire community. The appropriative system is also inflexible in its method of apportioning water during times of drought. A more desirable solution is 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 user gets nothing.\(^{23}\)

The framers of the Model Water Code have therefore concluded that prior appropriation, in its pure form, would be unsuitable for eastern jurisdictions. Nevertheless, some aspects of prior appropriation may provide an answer to the inadequacies of the common law approach. For this reason, the Model Water Code has employed a number of prior appropriation features in chapter two. It provides that permits be granted for specific quantities of water. As in the West, the permit system is administered by a water regulatory agency. The reasonable-beneficial use rule employed by the code\(^{24}\) is also strongly western-oriented in its emphasis on the public interest and prohibition of waste, and the common law restrictions to use on riparian lands have been abandoned. On the other hand, permits are not granted in perpetuity under the Model Water Code and provisions are made for temporary re-allocation of water during periods of extreme water shortage. While priority in time has a place in the code’s permit system, it is not as determinative of water rights as in the prior appropriation system. In short, the drafters of the code have attempted to integrate the most desirable features of both eastern and western water law in a manner which will insure the fairest and most beneficial utilization of the state’s water resources.

Before examining the permit provisions of the Model Water Code, it may be helpful to consider briefly the significant aspects of existing eastern regulatory legislation which has attempted to provide a permit system of regulation. A brief consideration of the constitutionality of statutes bringing about a change from pure riparianism to a permit

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24. MODEL WATER CODE § 1.03(4) at note 65 infra. See text accompanying notes 61-71 infra.
system will then be undertaken; the permit provisions of the Model Water Code will then be examined in some detail.

II. Regulation Under Eastern Permit Systems

Eastern regulatory legislation includes a variety of partial, inactive and largely ineffective permit systems engrafted onto the riparian doctrine. For example, such states as Minnesota, Wisconsin and Maryland have adopted compulsory permit systems, but have created such exceptions to their application that these systems cannot be considered comprehensive. New Jersey and Indiana have enacted statutes which require compulsory permits only in regions specifically designated as "problem areas." The Model Water Use Act and the Iowa Water Resources Act are the only statutory proposals at present which provide for comprehensive regulation of water resources in a riparian jurisdiction, and it is on their provisions that attention must focus.

A. Model Water Use Act

The Model Water Use Act was drafted 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. In general, it contemplates the creation of a state water resources agency and the issuance of permits for a definite period of time. The act also provides for the exemption of domestic uses and for the preservation of other existing uses. Of interest is the fact that the act would specifically do away with the acquisition of prescriptive rights. An optional provision of the act would allow the commissioner to award permits among competing applicants on the standard of beneficial use

without regard to priority in time of application.\textsuperscript{35} It also specifies that each permit be issued subject to a condition that the authorized uses must not interfere substantially or materially with domestic uses, preserved pre-existing uses or uses covered by permits previously issued. The Model Water Use Act has been enacted only in Hawaii; there it was accepted in modified form and affects only ground water.\textsuperscript{36}

**B. Iowa's Permit System**

In 1957 the Iowa Legislature passed a water rights law establishing a permit system under the control of the Natural Resources Council, administered by a Water Commissioner, and regulating rights to both surface and ground water.\textsuperscript{37} Though the law purports to leave unimpaired all "vested rights,"\textsuperscript{38} 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.\textsuperscript{39}

The Iowa law requires that all substantial uses of water be "beneficial," that term is defined to mean the application of water to a useful purpose enuring to the benefit of the water user and subject to this dominion and control.\textsuperscript{40} Permits are issued by the Water Commission. These permits have a general limitation of 10 years, and the law prohibits the diversion, storage or withdrawal of water without a permit 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). The Water Commissioner may suspend the operation of permits if necessary during an emergency and may establish priorities for water distribution, thus protecting the public interest from danger.\textsuperscript{41}

The statute in effect directs that the standard for determining the disposition of applications is one of beneficial use to be applied in a broad manner.\textsuperscript{42} The commissioner has not sought to discriminate on the basis of differences among beneficial uses; if the applicant can show that his use is beneficial, he may receive a permit.\textsuperscript{43} The effect of this

\begin{flushleft}
38. Id. § 455A.21 (Supp. 1970).
41. Id. § 455A.28(3).
42. See id. § 455A.17.
43. Id. § 455A.22.
\end{flushleft}
policy, along with the abundant rainfall in the state, has been that in the first 10 years of operation only two applications for permits were denied. Both involved the disposition of drainage waters. Not a single application to divert, store or withdraw water was denied during this period.\footnote{Hines, \textit{A Decade of Experience Under the Iowa Water Permit System}, 7 NAT. RES. J. 499, 532-33 (1967).}

Two of the major problems faced by the Iowa Council have been determining what uses are in fact consumptive and deciding on the protected level of flow. Generally, only irrigation uses have consistently been designated as consumptive. Certainly many municipal and industrial users consume substantial amounts of water, or pollute it to the extent that it is unusable by others, and should be classified as consumptive users to guarantee a protected flow in the affected streams.\footnote{Davidson, \textit{Demands for and Use of Water in Industry}, in \textit{IOWA'S WATER RESOURCES—SOURCES USES AND LAWS} 71 (J. Timmons, J. O'Byrne, & R. Frevert ed. 1956).} The difficult problem of determining the level of flow in Iowa has been reduced by the United States Geological Survey, which maintains flow-gauging stations on about one hundred streams and has records over a 25-year period. During times 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.\footnote{IOWA CODE §§ 455A.28(2)-(3) (Supp. 1970).}

\section*{III. The Constitutionality of Legislation Regulating Water Rights}

One of the primary concerns of those preparing proposals for the regulation of consumptive water uses in riparian states is whether the replacement of common law riparian rights with a system of consumptive use permits constitutes a taking of property without due process of law.\footnote{See King, \textit{Regulation of Water Rights Under the Police Power}, in \textit{WATER RESOURCES AND THE LAW} 271 (1958); Lauer, \textit{The Riparian Right as Property}, in \textit{WATER RESOURCES AND THE LAW} 133 (1958); O'Connell, \textit{Iowa's New Water Statute—The Constitutionality of Regulating Existing Uses of Water}, 47 IOWA L. REV. 549 (1962).} Today it is universally recognized that all property is subject to reasonable regulation by the state under its police power; no property right is absolute and no one can assert an unlimited right over property without subordination of that right to the common good.\footnote{E.g., Queenside Hills Realty Co. v. Saxi, 328 U.S. 80 (1946); Eiger v. Garritty, 246 U.S. 97 (1918); Atlantic Coast Line R.R. v. Goldsboro, 232 U.S. 548 (1914).} The police
power, however, is not without limits. While the state police power is not derived from the Federal Constitution, its exercise is nevertheless subject to constitutional standards, and regulations which violate a provision of the Federal Constitution may be invalidated. In particular, the 14th amendment is applicable to police power regulation, and its due process provision protects against arbitrary and unreasonable state action. Since the scope of the states' police power cannot be ascertained by any set formula, its limitations must be established through examination of the subject matter upon which the power is exercised. The validity of the regulation is determined by relating the object of the regulation to the means utilized. If there is a reasonable relationship between the objective of the regulation and the means employed to obtain that end, the statute will normally be upheld.

The authors feel that the provisions of section 2.03 of the Model Water Code set forth infra relating to the treatment of existing riparian rights and the regulatory scheme implemented in chapter two are consistent with the above criteria. The state has a clear interest in its water resources and the permit system may reasonably be expected to reduce waste and encourage more efficient use of water. Moreover, riparian rights are not destroyed in most cases but are transformed into a permit right which is arguably more certain and secure than a common law consumptive-use right.

In the past, because of the important relationship of water to the public welfare, the United States Supreme Court has generally upheld state regulation of water based on the police power. The Court has rejected the assertion that each riparian owner has a vested right in the use of unimpaired and uncontaminated flowing waters and instead has held that every state is free to change its law governing riparian ownership and to permit the allocation of flowing waters for such purposes as it may deem best.

A number of state courts have also upheld systems altering the existing uses of riparian owners. The Kansas Supreme Court, in State ex rel. Emery v. Knapp, upheld the validity of that state's new appro-

50. E.g., L.K. Liggett Co. v. Baldridge, 278 U.S. 105 (1928); King, supra note 47, at 282.
51. E.g., Treigle v. Acme Homestead Ass'n, 297 U.S. 189 (1936); Connolly v. Union Sewer Pipe Co., 184 U.S. 540 (1902).
52. See text accompanying notes 113-124 infra.
priation law against the objection that the property of riparian owners was taken without due process of law. The court indicated that the rights of the riparian owners 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*, the Oregon Supreme Court upheld sections of a statute which redefined "vested rights" and preserved the riparian rights only to the extent of their use at the time of its enactment or shortly prior thereto. The constitutionality of the Oregon Code, regulating both used and unused rights, was upheld by the Ninth Circuit in *California-Oregon Power Co. v. Beaver Portland Cement Co.*

In some cases, however, water regulatory legislation has been invalidated for failure to comply with provisions of state constitutions. In California, for example, parts of the 1913 California Water Code which (1) limited all water users to beneficial and reasonable use, (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 for non-use for 10 years, were held unconstitutional as an abridgement of riparian rights. An amendment of the state constitution in 1928 was required to restrain riparian rights in California. Likewise, the Idaho Supreme Court held that a statutory appropriation system could not over-ride the constitutional provision which guaranteed the right to divert unappropriated waters. A modern interpretation of the police power may now allow introduction of a permit system even in those states which formerly had held such legislation unconstitutional, however, and adoption of the Model Water Code would probably not require a constitutional amendment in most states.

IV. Significant Features of Consumptive Use Permit Systems

A. The Reasonable-Beneficial Use Standard

The most important feature of the Model Water Code is its reasonable-beneficial use standard, intended to protect other water users and the general public from wasteful consumption of water. Both the riparian and prior appropriation systems were wasteful in their earliest

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56. 114 Ore. 112, 227 P. 1065 (1924).
57. 73 F.2d 555 (9th Cir. 1934), aff'd on other grounds, 295 U.S. 142 (1935).
59. 3 Cal. Const. art. XIV, § 3. See Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 3 Cal. 2d 489, 45 P.2d 972 (1935).
and least sophisticated forms—although for different reasons. The reason-
able use limitation and the beneficial use limitation, respectively, were grafted on to the two systems to improve their efficiency. The reason-
able use rule in the East allows each riparian owner to use only such amounts of water as are reasonable under the circumstances with respect to the uses of other riparian owners.\textsuperscript{61} The rule is sufficient to protect other riparian owners from some wasteful operations, but it is of little use to nonriparian owners or to the general public.

The beneficial use rule in a prior appropriation system provides that an appropriator who diverts more water than is needed for his actual requirements and allows the excess to go to waste acquires no rights to the excess.\textsuperscript{62} There is no requirement of “reasonableness,” however, in relation to other users or potential users, though the courts have always exercised the power to declare that some uses were not beneficial or that certain applications of water did not fall within accepted classifications of beneficial uses.\textsuperscript{63} In some western states administrative agencies have adopted detailed regulations prescribing the maximum allowable “duty of water,” \textit{i.e.}, that amount reasonably necessary for a particular purpose or use for which new rights will be granted. Legislative standards as to maximum amounts of irrigation water that may be used per acre, however, do not appear to have been overly successful; the amounts set are quite ample and tend to be the same amounts for which new rights are granted. There seems to be some tendency to repeal these statutes and to divest administrative officials of the authority to prescribe appropriate limits in each case.\textsuperscript{64}

The reasonable-beneficial use standard of the Model Water Code\textsuperscript{65} is an attempt to combine the best features of the reasonable use and beneficial use rules. First of all, the quantity of water used must be efficient with respect to its use. This is basically a test of economic efficiency, with water being regarded as a raw material. Thus, if a particular crop can be grown properly with 5 acre-feet of water per year, it would be wasteful to use 10 acre-feet since no increase in value is obtained from the increased use of water. On the other hand, if it is

\begin{itemize}
  \item \textsuperscript{61} Maloney & Plager, \textit{Florida's Lakes: Problems in a Water Paradise}, 13 U. FLA. L. REV. 1, 52 (1960).
  \item \textsuperscript{62} Davis, \textit{Australian and American Water Allocation Systems Compared}, 9 B.C. IND. & COM. L. REV. 647, 676-78 (1968) [hereinafter cited as Davis].
  \item \textsuperscript{63} \textit{In re Waters of Deschutes River}, 134 Ore. 623, 286 P. 563 (1930).
  \item \textsuperscript{64} See, e.g., \textit{NEV. REV. STAT.} § 533.070 (1965); Fischer, \textit{supra} note 8, at 97.
  \item \textsuperscript{65} \textit{MODEL WATER CODE} § 1.03(4) Reasonable-beneficial use: the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose and in a manner which is both reasonable and consistent with the public interest.
\end{itemize}
technically feasible to use 5,000 gallons per day in an operation, but total costs can be reduced substantially by the use of 10,000 gallons per day, the reduction in overall costs may justify the increased use of water. It should be noted that this part of the reasonable-beneficial use test allows only that quantity of water to be used as is necessary for an economically efficient operation. The value of the use itself in relation to other uses is not considered initially. In an agricultural operation, for example, the test does not require a farmer to raise one crop because it takes less water per dollar of crop value than another crop. Nor does the test require that a permit be denied to an agricultural operation because the ultimate dollar value produced per gallon of water used is greater for industrial operations than agricultural uses.

While this type of limitation as to the quantity of water may be imposed at common law under the reasonable use rule, efficiency is required at common law only when other riparian owners are injured as a result. In the first example above, under the common law rule the farmer would be free to use 10 acre-feet unless the water supply is affected thereby to the detriment of other riparians. Under the reasonable-beneficial use standard, he would be limited to 5 acre-feet.

The reasonable-beneficial use standard also requires that the water (regardless of amount) be used "for a purpose . . . which is both reasonable and consistent with the public interest." The purpose must be reasonable in relation to other users. This criterion does not require that the use be the most economical use of water possible, but only that the use not be detrimental to other users or totally inconsistent with the character of the water course from which the supply is taken.

The use must also be consistent with the public interest. This requirement is entirely foreign to the riparian system, although in all but
two of the 17 prior appropriation states a permit application may be de-
nied if the proposed use would be contrary or detrimental to the public
interest. The legislation which confers this power on the adminis-
trative agency seldom provides standards for its exercise, but preference
provisions have been considered as one standard of the public interest in
certain instances. There are a few reported decisions relating to de-
nials of applications on this ground. Despite the favorable judicial
attitude reflected in each of them, these cases suggest that this power
has been infrequently used to date in the West.

Under the code's reasonable-beneficial use standard, the manner in
which water is obtained must also be reasonable and consistent with the
public interest. This part of the standard would be applicable only in
those rare instances where the proponent of an otherwise desirable pur-
pose has elected to obtain or use the necessary water in such a way as
would be unreasonable. It would apply to some aspect of the manner
of operation, such as the place of diversion, manner of impoundment
or method of disposal (including danger of pollution) as opposed to the
purpose of the entire operation. It should be noted that this part of the
reasonable-beneficial standard also relates to both other water users and
the public interest.

The reasonable-beneficial use standard, as applied in the Model
Water Code, is an attempt to combine the best features of both the
eastern reasonable use rule and the western beneficial use standards for
the consumptive use of water. The standard is somewhat flexible, but
through a process of judicial and administrative interpretation it may be
expected to become more certain at the operative level.

B. Security and Transferability of Water Rights

Acceptance by water users of a regulatory statute will depend in
large part upon the certainty or security of the water rights obtained un-
der its provisions. One of the goals of much of the statutory modifi-
cations of riparianism in the East has been to create a more secure water
right than is possible under the common law. In the West complete
tenure security is given by means of a perpetual right to a fixed quantity

68. See Davis, supra note 62, at 689.
69. Trelease, Preferences to the Use of Water, 27 ROCKY MT. L. REV. 133, 141
(1955). See, e.g., ARIZ. REV. STAT. ANN. § 45-143 (1939); CAL. WATER CODE § 1254;
TEX. REV. CIV. STAT. ANN. art. 7471 (Supp. 1970); UTAH CODE ANN. § 73-3-21 (1953).
70. See Young v. Hinderlider, 15 N.M. 666, 110 P. 1045 (1910); Cookinham v.
Lewis, 58 Ore. 484, 114 P. 88 (1911); Fisher, supra note 8, at 129-30.
71. MODEL WATER CODE § 1.03(4) at note 65 supra.
72. Davis supra note 62, at 676-78.
of water under the prior appropriation system. The authors believe, however, that water rights exercised under the proposed code should not become so inflexible that water resources cannot meet needs and demands by transfer from existing uses to more beneficial new uses. Three approaches are available to avoid inflexibility in the transfer of water rights while regaining adequate security: (1) establish a permit term of short duration; (2) grant a long-term permit but also impose a preference system; and (3) grant a perpetual permit and allow free alienability of water rights.

1. **Limited Term Permits**

The easiest way to maintain flexibility is to limit the term of the permit. Economists generally have maintained that this period, however, should be sufficient to allow water users to recover their investments made in water resource works. Nearly all water uses by private individuals or firms require the investment of capital or labor in some form of plant or equipment for capturing the water or for using the water after its capture. Investment of either type will ordinarily be made only if the investor can evaluate the probability of amortizing his capital and using the plant for a sufficient time to produce a profit. A policy against granting secure water rights may defeat the use of water for desirable purposes. Complete uncertainty under common law riparianism may prevent any investment in facilities for water diversion or water use, and granting the right for a limited period of time may not remove the objection if the period is too short. This principle was accepted by the drafters of the Model Water Use Act, who inserted a permit term of up to 50 years. New Jersey's permit system likewise provides for a term sufficient to allow amortization of capital, but imposes a limit of 25 years.

2. **Preference Systems**

A second means of obtaining flexibility in the regulation of water resources is to provide for the involuntary transfer of water rights through the operation of a preference system. This method has been employed extensively in the West to temper the otherwise inflexible system of perpetual water rights under the prior appropriation doc-

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74. Id.
75. MODEL WATER USE ACT § 406 (1958).
These preferences are applicable in two situations. They may allow the subordination or termination of an existing use, usually upon payment of compensation, in order to reallocate the water to a preferred use. In addition, preferences may function as guides for the state agency in deciding whether to approve, modify or reject applications for new rights.

Preference provisions in some states are made expressly applicable to the acquisition of new rights. In a few states the provisions also require that when competing applications for appropriation of the same water are pending concurrently, the agency must approve the application contemplating the preferred use even though that application was filed later than other applications. Domestic and municipal uses are accorded first preference in all states having preference provisions, and irrigation is generally favored over industrial and other uses.

Assuming that a preference system is a desirable means of promoting transfer of water rights for application to a more beneficial purpose, it must then be determined if compensation should be paid to a user when he is displaced by a preferred user. In those states which have adopted the appropriation doctrine, involuntary transfers under the preference system always involve compensation. One reason is that water rights under prior appropriation are certain in quantity (subject to uses of higher priority) and perpetual in duration; thus, they closely resemble vested property interests. Compensation for such transfers has also been defended on the basis of the "compensation principle" of welfare economics. This principle is most often stated in terms of the "Pareto criterion:" a change that makes at least one individual better off and leaves no individual worse off represents an increase in welfare. That aspect of the principle requiring that no person's position be worsened is usually satisfied by compensation for those injured by the change.

The amount of such compensation is another factor which must be considered if a preference system is to be established. Compensation must not be such as to discourage transferability, but should be kept to the minimum necessary to allow safe investment. A formula allowing for payment of original capital outlay plus a fair return may satisfy

78. Fisher, supra note 8, at 123.
80. ARIZ. REV. STAT. § 45-147 (Supp. 1970); Fisher, supra note 8, at 124.
81. Fisher, supra note 8, at 124.
82. Id. at 123.
83. Trelease, supra note 73, at 31.
Despite the difficulties, and the cost of implementation, a preference system for water use can offer several advantages. Although in the East use of a preference system without provision for compensation may be possible, this approach is attended by even greater uncertainty for users than the short-term permit. Such increased uncertainty militates against its adoption.

3. **Perpetual Permits**

A third alternative is to grant a permit of perpetual or extremely long duration, but to provide free alienability by allowing the water right to be severed from the land and treated as a separate and distinct form of property. Some writers have argued that a permit of this type provides for maximum security but at the same time insures that water will be put to the most economically productive use. To some extent water rights in the western states are of this character.

4. **Transferability Under the Model Water Code**

After careful study, the drafters of the Model Water Code have chosen the first alternative, provision for permits of limited duration, as the method best suited to introducing a permit system to a riparian state. In general, permits under chapter two of the Model Water Code are granted for a period of 20 years. During this time the water user is assured that he will have sufficient water for the use set forth under the terms of his permit. At the expiration of this period, however, he must reapply for another permit in order to continue his use.

No compensation is provided for under the Model Water Code for persons whose permits are not renewed upon expiration. The permit is a right to use a specific quantity of water for a fixed term of years; once the period has elapsed there is no property right remaining and, therefore, nothing to compensate.

A number of difficulties are avoided if no compensation is provided for under the code. One problem is the measure of compensation. Should it be for the value of the water itself; the unamortized portion of capital outlay invested in facilities used to obtain, transport and store water (in the event these facilities are not sold to the new user); or perhaps the "going concern" value of the entire operation if it must be terminated due to the loss of its water permit? Another question is who must pay the compensation. Must the state pay compensation if the permit is not given to another but simply not renewed?

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85. *Id.* at 29-34.
These difficulties have led to the conclusion that no compensation should be paid upon expiration of the permit since, in theory, the investment will be amortized over the life of the permit. Under the Iowa statute permits are granted for only 10 years with no provision for compensation in the event of non-renewal. This policy has not yet been challenged, but as of 1968 no renewal application had been refused in Iowa. Nevertheless, the drafters of the Model Water Code have followed the Iowa approach and have made no provision for compensation for failure to renew a consumptive use permit.

C. Seasonal Permit Proposals

No specific provision for seasonal permits has been included in the Model Water Code. The governing board, however, has ample power to grant such permits as a modification of the normal consumptive use permit where they would result in more efficient use of available water.87 There are at least two versions of the seasonal permit available: (1) a permit which allows the taking of water during periods of seasonal high flow; and (2) a permit which allocates water among several users on a seasonal basis.

When the state board establishes minimum levels under the provisions of the State Water Use Plan, it might also determine normal and maximum monthly flow levels by studying historical flow patterns. Frequently, persons using ordinary permits would not be tapping seasonal high flows. To prevent waste through non-use during this period, the governing board could grant special seasonal permits to allow capture of this water. Such permits would probably become valid only after notice by the governing board that surplus water was available.

The second type of seasonal permit could be issued on the basis of an allocation formula whereby several permittees would use certain amounts of water on certain days or during specific periods of the year. Each permittee, in effect, would be assured of sufficient water during his maximum-use period, but during his low-use period the governing board would allocate this water to other seasonal users.

V. Permits Under the Model Water Code

Having discussed some of the more significant features of the consumptive use permit system proposed in the Model Water Code, it may be appropriate now to examine the permit section of the code in more detail. These permit provisions are found in chapter two of the pro-

87. E.g., Model Water Code §§ 2.02(3), 2.06.
posed code, which follows *in extenso* with commentary by the authors on the individual sections.

A. Section 2.01 Permits Required

(1) No person shall make any withdrawal, diversion, impoundment or consumptive use of water without obtaining a permit from the governing board. However, no permit shall be required for domestic consumption of water by individual users.88

This subsection declares that no consumptive use of water for other than a domestic use as defined in section 1.03(6)89 shall be made without first obtaining a permit from the governing board. The phrase "withdrawal, diversion, impoundment" has been inserted to include such activities as hydroelectric power production where water is not permanently removed from the source of supply. Under the Model Code, all withdrawals of water for other than domestic uses will be subjected to some degree of regulation. The domestic use exemption was included because: (1) it is impractical to regulate numerous small users; (2) domestic use is permitted at common law under both the natural flow doctrine and the reasonable use modification; (3) individual domestic users collectively account for a relatively small amount of water used; and (4) regulation of municipal waterworks and other public water suppliers can effectively control domestic consumption in urban areas.

Waters that constitute the boundaries of the state are exempted in some state statutes.90 In most cases control would be difficult because some users would lie beyond the jurisdiction of the regulating state. Nevertheless, political boundaries are not relevant to hydrologic problems, and no such exemption was included in the Model Water Code. It is hoped that the state will employ its power under section 1.06(11) (b)91 to regulate boundary waters by means of interstate compacts.

88. Chapter one of the proposed code creates a State Water Resources Board and several regional water management districts administered by governing boards.

89. MODEL WATER CODE § 1.03(6) Domestic use: Any use of water for individual personal needs or for household purposes such as drinking, bathing, heating, cooking or sanitation.

90. E.g., FLA. STAT. ANN. § 373.091(2) (1960).

91. MODEL WATER CODE § 1.06 General Powers and Duties of the State Board. In addition to its other powers and duties the state board is authorized to:

    (11)(a) Provide such coordination, cooperation or approval as is necessary to the effectuation of any plan or project of the Federal Government in connection with or concerning the waters of the state.

    (b) The state board, subject to confirmation by the legislature, shall have the power to approve or disapprove such federal plans or projects on behalf of the state.

    (c) No other agency or department of the state shall assume those duties delegated to the state board in subsection (a) and (b) above.
This subsection is original.92

(2) In the event that any person shall file a complaint with the governing board that any other person is making a diversion, withdrawal, impoundment or consumptive use of water not expressly exempted under the provisions of this code and without a permit to do so, the governing board shall cause an investigation to be made, and if the facts stated in the complaint are verified the governing board shall order the discontinuance of the use.

Subsection (2) authorizes the governing board to investigate complaints of illegal uses of water. The governing board is authorized to use its powers of entry and inspection under section 1.16(2)93 when investigating such a complaint. No specific procedure is provided for the issuance of an order to discontinue use, but the provisions of section 1.1994

92. All provisions of chapter two are original unless otherwise indicated in the text.

93. MODEL WATER CODE § 1.16 In addition to the other powers and duties allowed by this code, the governing board is authorized to:

(2) Enter at all reasonable times upon any property other than dwelling places for the purpose of conducting investigations and studies or enforcing any of the provisions of this code, being liable, however, for actual damage done.

94. Id. § 1.19 Proceedings Before the Governing Board

(1) All proceedings before the governing board concerning the issuance, modification and revocation of permits or the enforcement of any provision of this code by the governing board shall be conducted in accordance with the provisions of this section.

(2) Parties affected by action of the governing board shall be timely informed by the governing board of the time, place and nature of any hearing; the legal authority and jurisdiction under which the hearing is to be held; and the matters of fact and law asserted. In fixing the time and place for hearings, due regard shall be had for the convenience and necessity of the parties or their representatives.

(3) The governing board is authorized to administer oaths to witnesses, make findings of fact and determinations of law, and otherwise regulate the course of the hearing.

(4)(a) The governing board may require the production of books, papers or other documents and issue subpoenas to compel the attendance and testimony of witnesses.

(b) If any person shall refuse to obey any subpoena as issued or shall refuse to testify or produce any books, papers or other documents required by the subpoena, the governing board may petition the circuit court of the county where such person is served with subpoena or where he resides to issue its rule nisi to such person requiring him to obey the same unless such person shows sufficient cause for failing to obey said subpoena. The governing board shall deposit with said court when such subpoena is issued in its behalf, the per diem and mileage allowable to secure the attendance of such witnesses.

(5) The governing board or any party to a proceeding before it may cause the deposition of witnesses residing within or without the state to be taken in the manner prescribed by law for depositions in a civil action before the circuit courts of this state.

(6) A full and accurate record of proceedings before the board shall be taken and shall constitute the sole records for the purposes of judicial review.

(7) Each witness who appears by order of the governing board shall receive for his attendance the same fees and mileage allowed by law to witnesses in civil cases,
would be applicable in the event the defendant wished to contest the order. The governing board could also initiate a criminal prosecution under section 1.22(3). The subsection is modeled after a provision of the Iowa Code.

(3) No provision of this chapter shall apply to coastal waters as defined in section 1.03(13) of this code.

No consumptive regulation of salt water, such as control over desalinization plants, is intended under the permit system established in chapter two. Coastal waters as defined in section 1.03(13) are expressly excluded from the purview of this chapter even though such waters are included within the general definition of waters of the state in section 1.03(8) and are subject to regulation under chapter five (water quality). Neither does chapter two attempt to regulate the consumptive use of rain. Once the rain falls to earth, however, it becomes subject to the provisions of chapter two as surface or ground water.

which shall be paid by the parties at whose request the witness is subpoenaed.

(8) The governing board shall not be bound by the technical rules of evidence but may exclude irrelevant, inmaterial or unduly repetitious evidence. Parties to the hearing shall have the right to present their case or defense by oral or documentary evidence, to cross-examine, and to submit rebuttal.

(9) The governing board is authorized to hold conferences for the purpose of consolidating applications for a hearing, selecting dates for a hearing satisfactory to the parties, exploring all feasible methods to eliminate surprise and delay and to shorten the hearing, including arrangement for the parties in advance of the hearing to exchange written qualifications of professional expert witnesses, and maps, charts, engineering analyses and other items contemplated for introduction as evidence and to encourage stipulations among the parties directed toward the same or similar ends.

(10) When a number of applications are pending on a water source having a common factual background, the governing board may consolidate such applications for hearing and report the hearing by a common transcript.

(11) An agent of the governing board may preside over any proceeding under this section before the governing board regarding issuance of a permit and, subject to final approval by the governing board, exercise in its name any and all of the powers enumerated in this section.

95. Id. § 1.22(3) Any person who violates any provision of this code shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment not exceeding six months, or a fine not to exceed $1,000, or both. For a continuing offense each day during which the offense is committed shall be considered a separate violation.


97. MODEL WATER CODE § 1.03(13) Coastal Waters: Waters of the (Atlantic Ocean) (Pacific Ocean) (Gulf of Mexico) within the jurisdiction of the state.

98. Id. § 1.03(8) Water or waters of the state: Any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state.
B. Section 2.02 Conditions for a Permit

(1) To obtain a permit pursuant to the provisions of this chapter, the applicant must establish that the proposed use of water (a) is a reasonable-beneficial use as defined in section 1.03(4) of this code; (b) will not interfere with any presently existing legal use of water; and (c) is consistent with the public interest and the provisions of the State Water Plan.

The proposed statute is similar to the Iowa Water Permit Statute in that there is only one type of permit available, and the basic criteria are the same for all permit users. This means that, in general, available water will be assigned on the basis of priority to any qualified applicant. Subpart (a) requires that the proposed use meet the requirements of the reasonable-beneficial use standard. Subpart (b) requires that the proposed use not interfere with presently existing legal uses of water. This category would include domestic uses exempted under section 2.01(1) of the Model Code, as well as existing uses exercised under the authority of a valid permit. Subpart (c) requires that the use not conflict with the public interest. For example, a proposed use, otherwise valid, that would have an unreasonably harmful effect on fish or wildlife might well be rejected as being inconsistent with the express statement of public interest in the protection of fish and wildlife found in section 1.02(2). Subpart (c) also requires that the permit be in accord with the State Water Use Plan and the State Water Quality Plan which together constitute the State Water Plan. There must always be compliance with the elements of the State Water Plan, such as stream flows. Prohibited uses under the State Water Use Plan will also operate to deny a permit, and sufficient water must be left in a watercourse to maintain the standards designated for the particular source of supply.

99. For the text of section 1.03(4) see note 65 supra.
100. This is analogous to the issuance of fishing licenses. As Hines has pointed out:

"The license-permittee receives a permit to carry on an activity illegal without the permit. Some restrictions are placed on his conduct of the licensed activity (daily creel limits) but there is no notion of competition for the right to carry on the regulated activity. No real inquiry is made concerning whether the applicant is more or less deserving of his permit than other applicants." Hines, A Decade of Experience Under the Iowa Water Permit System, 7 NAT. RES. J. 499, 506 (1967).

101. This standard is set forth in section 1.03(4) at note 65 supra.
102. MODEL WATER CODE § 1.02(2) The State Water Code shall be liberally interpreted to obtain maximum beneficial use of the waters of the state for such purposes as domestic uses, irrigation, power development, mining and industrial uses. However, adequate provision shall be made for the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the state for navigation, public recreation, municipal uses and public water supply; such objectives are declared to be in the public interest.
by the State Water Quality Plan.

A permit application would not necessarily have to be denied for failure to meet the conditions of subpart (c). Restrictions on the use of water could be inserted in the permit which would provide adequate safeguards to insure the user's compliance with the section. For example, a permit authorizing a diversion or impoundment without restrictions as to time of year might be harmful to a particular species of fish or wildlife during its breeding period. This objection could be removed, however, if the permit forbade the diversion or impoundment during this crucial period but permitted the use at other times when no harm to the species would occur.

(2) The common law of the state to the contrary notwithstanding, the governing board may allow the holder of a use permit to transport and use ground or surface water beyond overlying land or outside of the watershed from which it is taken if the governing board determines that such transport and use is consistent with the public interest.

This subsection modifies the common law to allow transportation of surface water beyond riparian or overlying land. If a system of water law is to be efficient, it must permit the use of water on nonriparian land. The same principle applies to use of ground water beyond overlying land. Many of the existing eastern permit statutes are silent on this point so that it is not certain whether the common law place-of-use restrictions remain in force in those jurisdictions.\textsuperscript{103}

An Illinois statute allows nonriparian use under permit for industrial, manufacturing or public utility purposes.\textsuperscript{104} The Wisconsin irrigation permit statute allows irrigators to use water on contiguous nonriparian land provided the total quantity of water used does not exceed that which is authorized for use on the riparian tract alone.\textsuperscript{105} The present Florida statutes provide for such transfer,\textsuperscript{106} although only for "excess" waters. Other riparian states such as Kentucky,\textsuperscript{107} Minnesota\textsuperscript{108} and Wisconsin\textsuperscript{109} have used the excess or surplus water approach. The Model Water Code, however, imposes no "excess water" limitation on transfer of water beyond riparian land. Permits will be issued to qualified users regardless of whether they plan to use the water on overlying

\textsuperscript{103} Davis, subpr note 62, at 700.
\textsuperscript{104} ILL. STAT. ANN. ch. 19, § 65 (Supp. 1970).
\textsuperscript{109} Wis. Stat. § 30.18(1) (1967).
or riparian land. This provision is primarily intended to assist municipalities, which are seldom considered riparian owners at common law.\textsuperscript{110} There is considerable evidence that many municipal users in the past have made extensive consumptive use of surface and ground water in violation of the common law limitations.\textsuperscript{111}

This subsection is a modified version of Florida Statutes section 373.141(1) (1967).

\begin{enumerate}
\item The governing board by regulation may reserve from use by permit applicants, water in such locations and quantities and for such seasons of the year as in its judgment may be required to implement a provision of the State Water Plan. Such reservations shall be subject to periodic review and revision in the light of changed conditions; provided, however, that all presently-existing legal uses of water shall be protected.

This provision is designed to integrate the operation of the permit system with the State Water Use and Water Quality Plans. Under this subsection the governing board by regulation may set aside a fixed quantity of water; no future permit application can be made for water reserved in this fashion. Subsection (3) would be of particular value in connection with the maintenance of water quality standards, as it would provide a margin of safety during periods of low flow. This subsection was taken in modified form from California Water Code section 1259. Reservation of water under the California provision, however, may only be made to implement water quality control plans.\textsuperscript{112}
\end{enumerate}

C. Section 2.03: Existing Uses

\begin{enumerate}
\item All existing uses of water, unless otherwise exempted from regulation by the provisions of this code, may be continued after the effective date of this code only with a permit issued as provided in section 2.04 of this code.

The drafters have taken the position that so-called "vested rights" arising from ownership of riparian or overlying land are subject to reasonable regulation under the state police power in the same manner as any other property right.\textsuperscript{113} Therefore, nondomestic uses of water in

\begin{itemize}
\item\textsuperscript{110} City of Emporia v. Soden, 25 Kan. 588 (1881); Town of Purcellville v. Potts, 179 Va. 514, 19 S.E.2d 700 (1942). \textit{Contra}, City of Canton v. Shock, 60 Ohio St. 19, 63 N.E. 600 (1902).

\item\textsuperscript{111} See Dufer & Becker, \textit{Public Water Supplies of the 100 Largest Cities in the United States}, in \textit{GEOLOGICAL SURVEY WATER SUPPLY PAPER 1812} (1964).

\item\textsuperscript{112} \textit{CAL. WATER CODE} § 1258.

\item\textsuperscript{113} Where use of water on nonriparian land is allowed, the problem of non-riparian users' lack of access to water can arise. Adoption of the "easement and aqueduct" concept would alleviate that problem. The concept empowers a water user to condemn a right-of-way for a ditch across a third person's land to gain access to water. This principle was incorporated into European water codes in the 19th century.
\end{itemize}
existence at the time of enactment may be continued only upon compliance with the provisions of section 2.03.

(2) The governing board shall issue an initial permit for the continuation of all uses in existence before the effective date of this code upon application without further proceedings under section 2.04 of this code if the existing use is a reasonable-beneficial use as defined in section 1.03(4) of this code and is allowable under the common law of this state.114

Several alternative methods of treating existing water uses were considered by the drafters. One possibility is to exempt presently existing uses from the provisions of chapter two entirely. This approach avoids the vested rights problem altogether and has been adopted in a number of water law statutes in the East.115 Wholesale exemption of present users, however, is contrary to the concept of comprehensive regulation of water resources. A second alternative is to grant a perpetual permit to existing users for the amount of water being used at the time the statute becomes effective. This concept was incorporated into an earlier Michigan proposal.116 The irony of this approach is that riparian rights are converted into a species of prior appropriation. While this approach is feasible, in theory at least, to the extent vested rights are rendered exempt from regulation, the overall effectiveness of a state water resources program is reduced. Even greater difficulties would be encountered if riparian rights were not reduced to a specific quantity of water. This situation exists in several western states where riparian and prior appropriation rights are both recognized.117

A final alternative, other than refusing to recognize any distinction at all, is to give existing rights priority in the granting of a permit. The Mississippi prior appropriation statute follows this approach by giving


114. For the text of section 1.03(4) see note 65 supra.


riparian owners the first opportunity to perfect their rights. Existing users are given a somewhat similar advantage under the provisions of this section of the Model Water Code since the requirements of section 2.02(1)(c) are waived. This treatment is admittedly not as generous as the Mississippi statute, since the riparian rights are exchanged for a 20-year permit rather than one of unlimited duration.

It should also be noted that to qualify under this provision the existing use must be "allowable under the common law of this state." This is intended to preclude all uses in violation of the riparian doctrine, particularly those involving use beyond riparian or overlying land. The code makes no express mention of water uses in violation of the riparian doctrine to which prescriptive rights have attached. Such rights have been recognized in some jurisdictions and would therefore qualify as an existing use under the Model Code.

In essence, subsection (2) will do little more than guarantee existing users a 20-year extension of their use. This approach will do nothing to alleviate the loss of a riparian owner who has purchased his property at a price reflecting the potential value of undeveloped water, but who has not yet exercised these rights. While it is quite likely that such a person could successfully apply for a permit at a later time, the Model Code makes no provision for compensation in the event his permit application is denied.

Applications for permit under the provisions of subsection (2) above must be made within a period of three years from the effective date of this code. Failure to apply within this period shall create a conclusive presumption of abandonment of the use, and the user, if he desires to revive the use, must apply for a permit under the provisions of section 2.04 of this code.

Since the total amount of water assigned to existing users under section 2.04(2) must be known before the provisions of the State Water Use Plan and the State Water Quality Plan can be implemented, this subsection provides for a 3-year grace period after which further applications for a permit under section 2.03 are precluded by a conclusive presumption of abandonment. This is a prior appropriation feature; ripar-
ian rights did not lapse through non-use under the common law. The Model Water Use Act has adopted a similar abandonment provision, although the abandonment period is four consecutive years of five out of seven years. The code provides for a more stringent 3-year period.

(4) In the event that the governing board refuses to issue a permit upon timely application under subsection (2) above for a use allowable under the common law of this state, the user shall be allowed reasonable compensation amounting to reimbursement for any damages attributable to the lessening of his water supply and any expenses related thereto.

Those existing uses which are valid under the common law riparian doctrine of the state but fail to meet the requirements of the reasonable-beneficial use standard will be terminated, but the user will receive compensation for the impairment of his property right. The burden of proof is upon the water user to establish that he is entitled to compensation under the provisions of this subsection. The Massachusetts Wetland Statute employs a similar approach. Under its provisions, any person damaged by action of the special district’s activities may obtain compensation under the state eminent domain statute.

D. Section 2.04: Application for a Permit

(1) All permit applications filed with the governing board under this chapter and notice thereof required under section 1.18 of this code shall contain the name and address of the applicant (in the case of a corporation, the address of its principal business office), the date of filing, the date set for a hearing if any, the source of the water supply, the quantity of water applied for, the use to be made of the water and any limitation thereon, the place of use, the location of the well or point of diversion, and such other information as the governing board may deem necessary.

This subsection sets out the information that must be included on the permit application. The governing board may require additional

125. Model Water Code § 1.18 Application and Notice

(1) Applications for a permit required under provisions of this code shall be filed with the water management district on an appropriate form provided by the governing board.

(2) Upon receipt of the application the governing board shall cause a notice thereof to be published in a newspaper having general circulation within the affected area. The notice shall be published at least once a week for two consecutive weeks. In addition, the governing board shall send a copy of such notice to any person who has filed a written request for notification of any pending applications affecting this particular designated area. This notification shall be sent by regular mail prior to the date of last publication.

(3) This section shall not be applicable to permits or licenses issued under the provisions of chapters three and six of this code.
information from all applicants or from a particular applicant at its discretion. This provision is modeled closely after section 1301 of the California Water Code.

(2) The notice shall state that written objections to the proposed permit may be filed with the governing board by a specified date. The governing board at its discretion may request further information from either applicant or objectors, and a reasonable time shall be allowed for such responses.

Objections initially must be made in writing. The governing board at this time may screen out frivolous or completely unsubstantiated objections while acquainting the applicant with any remaining ones.

(3) If the proposed application does not exceed 150,000 gallons per month, the governing board may consider the application and any objections thereto without a hearing. If no objection to the application is received, the governing board, after proper investigation by its staff, may at its discretion approve the application without a hearing if the proposed application does not exceed 150,000 gallons per month. Otherwise, the governing board shall set a time for a hearing under section 1.19 of this code.126

No public hearing is required if the proposed use involves a minimal amount of water even though an objection has been filed under subsection (2). The Iowa statute exempts entirely all uses of water under 5,000 gallons per day.127 This figure would amount to 150,000 gallons per month, and was regarded by the drafters as minimal. In some states a substantially larger figure might be realistic. A monthly total was used rather than an annual one to avoid a situation where a permittee makes use of his annual total (about 1½ million gallons) within a relatively short time. The monthly total represents an absolute limit, which may not be exceeded in any month. It should be noted that the governing board may still refuse to grant a permit under these circumstances. Though waiver of the hearing is at the board’s discretion, a hearing probably should be held if the governing board is of the opinion that the permit application should be denied. An administrative appeal under section 1.20128 is available to all interested parties

126. For the text of section 1.19, see note 94 supra.
128. MODEL WATER CODE § 1.20 Administrative Review

(1) Upon petition by any aggrieved persons or upon its own motion, the state board shall at any time review any action or failure to act by a governing board.

(2) The evidence before the state board shall consist of the record before the governing board and any other relevant evidence which, in the judgment of the state board, should be considered to effectuate and implement the policies of this code.

(3) The state board may find the governing board’s action or inaction to be appropriate and proper. Upon a finding that the action of the governing board, or the failure of the governing board to act, was inappropriate or improper, the state board
whether a hearing under section 1.19\textsuperscript{129} is held or not.

If the quantity of water desired is between 150,000 and 1,500,000 gallons per month, the governing board may waive a hearing only if no proper objections are received. A hearing will always be required whether or not an objection is made to the application if the quantity of water involved exceeds 1,500,000 gallons per month.

This subsection is original although provisions of the same general type may be found in Texas,\textsuperscript{130} Minnesota\textsuperscript{131} and Iowa statutes.\textsuperscript{132}

E. Section 2.05: Competing Applications

(1) If two or more applications which otherwise comply with the provisions of section 2.02 of this code are pending for a quantity of water that is inadequate for both or all, or which for any other reasons are in conflict, the governing board shall have the right to approve that application which best serves the public interest.

This subsection provides for determination of water rights when two or more parties have filed permit applications for the same source of supply. Ordinarily, priority in time results in priority of right. When an objection is filed to an initial permit application and the objector immediately files an initial application, however, there would be a simultaneous filing. Also, an application filed to appropriate water currently being used in accordance with a valid permit would be considered only at the time the current permit expired, and this could be competing with other applications for the same source. In a state where water is plentiful, this situation would be relatively uncommon. However, in certain highly developed areas water needs might well exceed available supplies, or at least exceed those supplies which are economically most attractive.

Since water rights under the prior appropriation system are based

may:

(a) direct that the appropriate action be taken by the governing board,
(b) refer the matter to any other state agency having jurisdiction,
(c) take the appropriate action itself, or
(d) any combination of the foregoing.

In taking any such action, the state board is vested with all the powers of the governing board granted under this code.

(4) In the event of a dispute between two or more water management districts, the state board shall decide the issue on its own motion or on the motion of one of the districts.

(5) In case of review by the state board under the provisions of this section, the state board may stay in whole or in part the effect of a decision or order of a governing board.

\textsuperscript{129} For the text of section 1.19, see note 94 \textit{supra}.


\textsuperscript{132} \textit{Iowa Code} § 455A.25(1) (1966).
on priority alone and are granted in perpetuity, the problem of competing applications seldom arises in western states. The Iowa statute does not expressly consider the problem at all. The Model Water Use Act provides that "in granting permits when there are competing applicants for the supply of available water, the Commission shall give no preference or priority to application first time, but shall be governed by the standard of beneficial use." This suggests that some review is given to the permit at the time of renewal but does not indicate what action the agency must take when both proposed uses are beneficial. The definition of "beneficial use" under the act appears to be an absolute standard, not a comparative one. Therefore, the water resources agency could not conveniently determine which use was "more beneficial," and the provision does not suggest such an approach.

Since the Model Water Code does not establish a preference system, each application receives the same consideration if the proposed use is beneficial. Therefore, the governing board must first examine the applications to see if each one meets the requirements of section 2.02. If the state water plan has established a preferred use for the particular source of supply, the permit will be granted on that basis if one of the proposed uses fits into the preferred category. The problem may also be solved by rejecting one or more applications for failure to qualify as a reasonable-beneficial use. Since the governing board need not grant the entire amount of water requested, it may also apportion available water between two applicants by granting less than either has requested.

If the amount of water requested causes an otherwise reasonable-beneficial use to fail to meet the requirements of the standard, the board may see fit to reduce the amount requested. The application might be approved as amended and the water saved made available to the other applicants to satisfy their needs. Thus, the governing board, through a process of negotiation, may be able to apportion the water among all of the competing applicants and satisfy each one's demands.

If the governing board determines that both proposed uses meet the requirements of section 2.02, it becomes necessary to apply an additional test to decide which user will be granted the permit. Under the provisions of this subsection, the governing board must consider the relative benefits to be derived by the public from the proposed uses of water. This language, while undeniably vague, does suggest general cri-

135. See id. § 102(a).
teria for the board to consider. Public bodies, such as municipalities, governmental agencies and public utilities should be preferred over private users. Economically more productive uses should normally be preferred over less productive uses since the economy of the area would benefit more from the former. Certain purposes such as protection of fish and wildlife, navigation, public recreation, municipal uses and others are expressly declared to be in the public interest in section 1.02(2). It would seem also that uses which do not substantially impair water quality might be preferred over those that do. Despite these general guidelines, however, the governing board retains considerable discretion in such cases and may be expected to also take into account additional factors of a similar nature. In any event, the board's decision is subject to administrative and judicial appeal and may be overruled if it appears to be arbitrary or unfair. This subsection is original, although a similar approach is followed in section 14 of the Michigan proposal.

(2) In the event that two or more competing applications qualify equally under the provisions of subsection (1) above, the governing board shall give preference to a renewal application over an initial application.

Only when the proposed uses are equal in every respect will the governing board award the permit on the basis of priority. There appears to be a sound equitable basis for preferring a renewal applicant over a newer user under these circumstances. Priority should also be considered, all things being equal, when both parties are initial applicants.

F. Section 2.06: Duration of Permits

(1) Permits may be granted for any period of time not exceeding twenty years. The governing board may base duration of permits on any reasonable system of classification according to source of supply, type of use, or both.

The Model Water Code provides each permit user with a secure right to a specific amount of water for a specific length of time. While other alternatives are available, most statutory modifications of the riparian system have adopted a similar approach. The Model Water Use Act provides for a permit period of up to 50 years. The Iowa statute allows only a 10 year maximum.

The 50 year period would probably be excessive for most water

136. For the text of section 1.02(2) see note 102 supra.
138. See text accompanying notes 72-86 supra.
139. MODEL WATER USE ACT § 406 (1958).
uses. Such a long period would allocate the prime sources of water supply to present uses for a long period of time, while limiting more productive future water uses to less desirable sources of supply. A lesser period with frequent renewals would impart more flexibility to the permit system and provide more opportunities for future users to share in available water supplies. The 10 year maximum allowed under the Iowa statute, however, has been criticized as being insufficient to allow amortization for many investments.

A period of 20 years was selected as the maximum permit duration in the belief that it would provide reasonable security to water users and allow sufficient time to at least partially amortize capital investment, while providing for some degree of flexibility in the administration of the permit system. Although the normal permit period is 20 years, the governing board is authorized to grant permits for a lesser time on the basis of source of supply and type of use.

(2) The state board may authorize a permit of duration of up to fifty years in the case of a municipality or other governmental body where such a period is required to provide for the retirement of bonds for the construction of waterworks and waste disposal facilities.

Discussions with officials in the Department of Housing and Urban Development revealed that federally-supported projects involving public water supply systems frequently required local bond issues with maturity dates in excess of 30 years. The fact that no such projects had been approved in Iowa since the 1956 water statute suggested that a short permit term with respect to municipalities might have an adverse effect on applications for federal assistance. Therefore, this subsection was inserted to allow the state board to waive the normal 20-year permit term when a longer period is required for the retirement of bond issues in connection with public water supply projects.

G. Section 2.07: Modification and Renewal of Permit Terms

(1) A permittee may seek modification of any terms of an unexpired permit.

(2) If the proposed modification involves an increase in water use of 150,000 gallons per month or more, the application shall be treated under the provisions of section 2.04 in the same manner as the initial permit application. Otherwise, the governing board may at its discretion approve the proposed modification without a hearing provided that the permittee establishes that (a) a change in conditions has resulted in the water allowed under the permit becoming inadequate for the per-

141. Id.
143. Interview with officials of the Department of Housing and Urban Development, August 1969.
mittee's need, or (b) the proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

These provisions are designed to cover modifications during the term of the permit. The same standards are applied to modifications as are applied to the original permit application. A hearing is required only where it would have been required under section 2.04.

No formal procedure is established for a modification which involves only the use of a smaller amount of water. The governing board, however, might provide by regulation that the user notify the governing board of such a modification.

(3) All permit renewal applications shall be treated under section 2.04 of this code in the same manner as the initial permit application.

A renewal is treated in the same manner as an original application. As a practical matter, the existing user would normally encounter little difficulty in obtaining a renewal. The renewal applicant would have a strong equitable position unless changed conditions have intervened. In that event, the governing board would be completely free to allocate available water in a manner that is best suited to these new conditions. If, for example, the State Water Use Plan or the State Water Quality Plan have been modified in such a way as to affect the use, a hearing would be required to establish whether the use is still compatible with the new provisions. A hearing should also be required if another application for the same water has been received. A renewal procedure is provided under the Model Water Use Act and under the Iowa statute.

H. Section 2.08: Revocation of Permits

After a hearing under section 1.19 of this code the governing board may revoke permits as follows:

(1) For any material false statement in an application to continue, to initiate or to modify a use, or for any material false statement in any report or statement of fact required of the user pursuant to the provisions of this code, the governing board may revoke the users' permit, in whole or in part, permanently or temporarily.

(2) For willful violation of the conditions of the permit, the governing board may permanently or temporarily revoke the permit, in whole or in part.

(3) For violation of any provision of this code, the governing board may revoke the permit, in whole or in part, for a period not to exceed one year.

(4) For nonuse of the water supply allowed by the permit for a period of two years or more, the governing board may revoke the permit per-

146. For the text of § 1.19 see note 94 supra.
manently, in whole or in part, unless the user can prove that his nonuse was due to extreme hardship caused by factors beyond his control.

(5) The governing board may revoke a permit permanently, in whole or in part, with the written consent of the permittee.

Although an impressive array of civil and criminal sanctions are available to the governing board under section 1.22, revocation of permit rights will probably prove to be the most effective tool in enforcing the provision of this chapter. Under this section revocation may be total or partial, temporary or permanent. In addition to its use as a sanction, revocation may also be employed to formalize a complete or partial abandonment of permit rights. As under western permit systems, water rights do not remain dormant but must be exercised.

Of course, a permit may also be revoked with the consent of the permittee. This would happen when such a person has decided to obtain his water from another water supply. The section is original, although subsection (4) is comparable to provisions in the Arizona and Texas statutes.

I. Section 2.09: Declaration of Water Shortage

(1) The governing board by regulation shall formulate a plan for implementation during periods of water shortage. As a part of this plan the governing board shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

Both the Model Water Use Act and the Iowa Code have provisions dealing with water shortages. Under the former, there are two classes: water shortage and water emergency. Either of these conditions enables the agency to restrict water uses and apportion water. In effect, the permit system is suspended for the duration of the water shortage or

147. Model Water Code § 1.22 Penalties; Common Law Remedies
(1) The state board may enforce its regulations and orders adopted pursuant to this code by suit for injunction or for damages, or both.
(2) The governing board may enforce its regulations and orders adopted pursuant to this code by suit for injunction, or for damages, or both.
(3) Any person who violates any provision of this code shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment not to exceed six months, or a fine not to exceed $1,000, or both. For a continuing offense each day during which the offense is committed shall be considered a separate violation.
(4) The code shall not bar the right of any injured person to seek legal or equitable relief against a water user for actions in violation of this code.

151. Id. § 502.
emergency. Under the Iowa statute, if it is found necessary in an emergency to protect the public health and safety, the public interest in lands or waters, or to protect persons or property, the commissioner may suspend operations under the permit.\(^{162}\) As this power involves only temporary suspension of operations, no provision is made for an immediate hearing.\(^{163}\) A critical look at the provisions of both statutes, however, reveals that this approach is essentially crisis-reactive rather than preventative.

Section 2.09 is designed to facilitate advance planning for periods of water shortage. The first step toward proper planning is a system of classification. The governing board by regulation will establish a reasonable system of classification and then formulate a plan for its use during any future period of shortage. Since restriction on water use will be applied on a class basis, individual users will know in advance their relative priority in time of shortage. These classifications, while predetermined, would be used only during crisis periods and would not serve as criteria for issuance of permits or for any other purpose.

(2) The governing board by regulation may declare that a water shortage exists within all or part of the district when insufficient water is available to meet the requirements of the permit system or the State Water Plan, or when conditions are such as to require temporary reduction in total water use within the area to protect water resources from serious harm.

This subsection delineates those conditions under which a condition of shortage must be declared. It should be noted that, unlike the permittee in a prior appropriation system, the holder of a permit under the Model Water Code is assured of the full amount of water allowed under the terms of his permit. A declaration of water shortage may be made whenever even one permit holder is unable to obtain water. Since the declaration is made by regulation, the notice and hearing provisions of section 1.17\(^{154}\) are applicable.

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\(^{152}\) IOWA CODE § 455A.28(3) (1966).

\(^{153}\) Hines, supra note 44, at 516.

\(^{154}\) MODEL WATER CODE § 1.17 Adoption of Regulations by the Governing Board

(1) In administering the provisions of this code the governing board shall adopt, promulgate, and enforce such regulations as may be necessary to carry out its functions.

(2) Regulations affecting the public interest other than regulations relating to the internal organization and operation of the district shall be adopted as follows:

(a) The proposed regulation shall be contained in a resolution adopted by the governing board at a regular or called meeting and included in the minutes of its proceedings.

(b) Within ten days of the adoption of the resolution of the board, notice of the regulation in the form of a summary thereof (or in full, at the discretion of the governing board) shall be published once in four newspapers of general circulation in
(3) In accordance with the plan adopted under subsection (1) above, the governing board may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

No express limitations are placed on the governing board by this subsection except that it proceed on the basis of the classification established under subsection (1) above. Considerable discretion may be vested in the governing board since the plan of action is known in advance and its provisions would have been subject to administrative review by the state board under section 1.20.155

(4) A declaration of water shortage and any measures adopted pursuant thereto may be rescinded by regulation by the governing board.

(5) When a water shortage is declared, the governing board shall cause notice thereof to be published in a prominent place within a newspaper of general circulation throughout the area. Such notice shall be published each day for the first week of the shortage and once a week thereafter until the declaration is rescinded. Publication of such notice shall serve as notice to all water users in the area of the condition of water shortage.

(6) The governing board shall notify each permittee in the district by regular mail of any change in the condition of his permit, any suspension of his permit, or of any other restriction on his use of water for the duration of the water shortage.

Once conditions return to normal, the declaration of water shortage should be rescinded by regulation. The emergency plan adopted under subsection (1) again becomes inactive and the permit system resumes its normal operation.

The notice provisions of subsections (5) and (6) are designed to keep both permittees and the general public fully informed of water conditions during the entire period of water shortage. Immediate notice is...
essential to the plan. All users in the affected area would have to be constantly informed of the situation and its effect on them. Public notice can be by publication, but affected users need postal notice both during and after the crisis.

It should be emphasized that such a crisis would be an emergency only in the sense that the water supply was critically deficient; there would be no suddenness or surprise. All concerned would know what was happening, when it was happening, what to expect at each stage of the crisis and how they were to be affected. The reserve-emergency plan would provide a mechanism for orderly adjustment of consumptive uses in periods of water shortage, thus in the long run mitigating the otherwise costly effects of such a situation.

**Conclusion**

Up to the present time, doctrines and remedies developed by the common law courts have played a major role in the regulation of the consumptive use of water in the eastern United States. But explosive population growth and rapidly increasing use and contamination of eastern water supplies are placing burdens on those supplies beyond the capabilities of common law regulation.

The result is a strong movement in the eastern states toward statutory modification of riparian doctrines. The statutes, however, with perhaps two exceptions, have been piecemeal attempts to superimpose a layer of administrative regulation on common law riparianism, generally with a mixture of certain elements of appropriative doctrine. Such half-hearted legislation may well be worse than none at all, particularly if it has the effect of lulling the people of a jurisdiction into a false sense of security until their water supplies are being so heavily overdrawn and polluted that the situation can be rectified only at great harm to presently existing water users.

The drafters of the Model Water Code present as an alternative to such piecemeal approaches a comprehensive and fully integrated system designed for the management of the water resources of an eastern state. In seeking to provide for the most effective use of the state's water resources they have drawn on the experience of the West as well as the East, on appropriation doctrines as well as the best elements of riparianism. The system takes into account the close interrelationships of sur-

face and ground water as well as the relationship between the maintenance of water quality and consumptive use patterns. It provides for and emphasizes overall planning for the optimum use of the entire water resources of the state, not only at the time of its adoption but in future years.

Such planning and regulation must necessarily call for the creation of an administrative agency with full powers to implement the provisions of the regulatory enactment. The heart of any such overall regulation is the permit system administered by that agency. While it has not been possible in the limited space available to present the Model Water Code in its entirety, its permit system has been presented here in the hope that all or parts of it may be found useful in any jurisdiction, eastern or western, that is considering revision of its system of water resources regulation.

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158. The Model Water Code will be published shortly in book form by the University of Florida Press.