Hybrid Water Law Systems: Would One Be Advantageous for Michigan?

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CHAPTER I

INTRODUCTION

The sources of law (both formal and informal) include constitutions, court cases, statutes, administrative regulations, and the behavioral patterns of those who participate in activities governed by the law. As applied to water resources, legal principles (doctrines and relationships) may be found in each of these sources of law. Collectively these principles represent the body of water law for Michigan and for the other states of the Union, with particular variations for each state.

In Michigan, water authorities and commissions have been proposed in various bills and pieces of draft legislation, but to date no statute has been adopted which creates an institution with the authority for water management and planning (as defined later in this report). Existing state agencies currently have the authority to study water-related problems, but none of these have the power to control water use, enjoyment, or access; to allocate water rights; to have a comprehensive impact on the behavioral patterns of water users and participants on a statewide basis; to plan statewide for the future of water use (both quantity and quality); or to have an impact on existing property rights in Michigan's waters and related land resources.

In the American constitutional form of government, such powers for management or planning purposes can be generated only through legislative enactment. They cannot be self-created by

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[The reader should note that this document is not intended to serve as a comprehensive treatise on Michigan water law. It should be looked upon as an introduction for the novice or as a refresher for the well versed in this subject.]

administrative agencies or by the court system. Each branch of government (legislative, executive, and judicial) is a part of this system. Substantive management and planning for water use are chiefly done in the legislature. Although these activities are not totally foreign to the other two branches in other states, Michigan's courts and administrative agencies, as extensions of the executive branch, simply do not currently engage in water management or water planning (as herein defined) in any meaningful or significant manner. This latter statement is not a criticism of these institutions, but rather a descriptive observation of the current status of Michigan water law and its implementation.

It is important to note that although courts do not manage water resources in a proactive manner, they are involved in defining how the resource can and can not be used. Common law, in the absence of legislative action, either has developed or will develop. As cases are appealed, the enumerated rights or interests associated with water use and their scope are reactively defined. Case law creates, destroys, and/or changes these property rights in response to individual disputes. Judicial decisions describe these rights in the form of relationships, not absolute interests. Appellate opinions define water uses which are reasonable. So, the courts set up reactive protocols in the absence of proactive management.

It is sufficient to note here two points: (a) Michigan administrative agencies do not currently have the authority to plan or manage water resources on a plenary basis and (b) Michigan courts have the narrow jurisdiction or role of deciding cases and controversies. This falls far short of statewide management or planning. Moreover, "management" and "planning" are terms which elude and defy definition. These terms will be given a special contextual set of meanings for purposes of this report (see Appendix A). In a nutshell, Michigan courts and executive agencies do not have the authority to manage or plan for the use of water resources.

The primary purposes of this report are (1) to give an overview of water law in the Michigan context, (2) to examine the development and implementation of hybrid water law systems in some other states, and (3) to lay the groundwork for consideration of Michigan water law in the context of hybrid water law.

CHAPTER II

TYPES OF STATE WATER LAW

Riparian Water Law

"Riparian rights" (from Latin ripa: shore of a stream or river) are collectively a set of property rights which attach to riparian land. "Riparian land" is, by definition, real property which physically touches a lake or watercourse. Properly, it should only refer to rights of persons on streams or rivers; lake or sea shore owners should be referred to as having "littoral rights", but this terminology is rarely used. The riparian (a legal person) may exercise riparian rights so long as the person owns the land. However, these are not personal rights and cannot be exercised separate and apart from land ownership itself. The set of rights must be shared equally with co-riparians on the lake or stream, and a smaller subset of these riparian interests must also be shared with the general public when the water resource is public water.

The primary set of riparian rights includes:

1) the right to domestic pumpage and related household uses;

2) the right to access to the water;

3) the right to wharf out to navigable water;

4) the right to both the benefits and the burdens of accretions to the shoreline and reliction (recession of water, leaving uncovered land); and

5) the right to recreational uses of the entire surface of the water.

Riparian rights are not absolute and all-encompassing with regard to waters. Along with rights, certain duties are attached to being a riparian. Each riparian has the duty not to interfere with the rights of fellow riparians, within the parameters defined by reasonable use. Riparian rights are delimited by public rights, including those involved with navigability and public trust; and riparians have a duty to respect these public rights while exercising their riparian rights.

The Riparian Doctrine arose from the courts and from case law. This "common law" is, by definition, a body of legal rules (decisions) which are court-made (judicially-created concepts). The common law anchors itself to traditions, to cultural and economic developments of a community, and to prior precedents. Although the precedents are normally older court cases on similar facts and legal issues from the same jurisdiction (e.g. Michigan), precedents or points of departure may also be selected by modern courts from ancient English traditions (cases and statutes of Parliament), from judicial opinions from federal courts or other state courts, and/or from currently acknowledged developments (economic, social, physical natural resource, etc.).

The riparian doctrine for water rights and water use is an excellent example of this common law phenomenon. The courts of early England developed the riparian theory of water use, giving special benefits to those whose land physically touched the lake or stream. The American colonies were settled by those who brought this tradition with them; they made it part of their basic jurisprudence. The English version of riparian theory was called the "natural flow doctrine." As applied, this approach prohibited every riparian from diminishing water quality or water quantity in even the slightest degree, even though within the boundaries of their riparian lands they had absolute rights to the water. Co-riparians could claim damages or obtain court injunctions for even the smallest of changes in quantity or quality.

The early law of several eastern states adopted the natural flow doctrine. By contrast, other states found this approach

unworkable in the context of the need for economic growth and development. Therefore, the "reasonable use doctrine" (sometimes called the American version of riparian theory) began to emerge in the common law. Under the reasonable use doctrine, a riparian could change, impair, and even destroy water quantity and/or quality so long as the action was reasonable in the particular factual context. Obviously litigation has helped to define reasonable in different contexts.

Some types of standards (with considerable variation between states as to what each of these concepts mean) that have arisen for determining "reasonable" use are:

1) the purpose of the use;

2) the suitability of the use to the watercourse or lake;

3) the economic value of the use;

4) the social value of the use;

5) the extent and amount of harm it causes;

6) the practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other;

7) the practicality of adjusting the quantity of water used by each proprietor;

8) the protection of existing values of water uses, land, investments, and enterprises; and

9) the justice of requiring the user causing harm to bear the loss.

(Getches, Water Law in a Nutshell, West Publishing Co., pp. 53-54, 1984).

Riparian theory and practice continue to evolve, despite some scholars' view of it as a static concept.

Appropriation Water Law

The riparian water law system evolved in places where surface and ground water are fairly plentiful. When the American West was

opened, a new set of water resource dynamics was confronted. Water was scarce and, therefore, proportionally more precious. It was much easier to deplete and otherwise diminish the supply and quality of water. Alternate sources of water were much more difficult to obtain, if they were available at all. Because of these conditions, a different type of water law evolved, based on customs that had developed in the West before the states established systems for regulating water usage.

The system developed was termed "prior appropriation." Instead of linking water rights to riparian property ownership, proof of use was the key factor determining who had rights to the water. People could establish a stake in a source of water, be it surface or ground water. The first person to demonstrate use of water was the one who had continuing rights to use that water. This "first-in-time, first-in-right" concept is the origin of the term prior appropriation, and is the basis for the current institutionalized legal system. The primary requirement for maintaining rights to the water is to continue to use the water. Water rights are transferable, provided that other users with established claims are not impaired by the transfer.

With the establishment of strong state governments, a new dynamic evolved. State governments took the stance that all waters in the state were public property. Although the theory of state ownership of water is not all that much different than in the East, the practice is very different. Private rights to water can only be established <u>through</u> the state. This type of system was deemed necessary in light of the level of conflict (actual and potential) that the states had to cope with over these scarce resources.

Thus, the Appropriation Doctrine (prior appropriation) came into being. Rights of a person to water are determined by alteration of flowing waters (capture, impoundment, diversion, etc. from natural course or channel) from the public domain for some private or personal use to the partial or total exclusion of other users. Appropriation must be prior (first in time, first in right) and generally must be regular and beneficial (i.e. users can't sit

on their rights and must be using water for some generally socially acceptable purpose). Prior appropriation generally includes some considerations of:

1) intent to apply water to a beneficial use;

2) actual diversion of water from the natural source; and

3) application of the water to a beneficial use within a reasonable period of time.

As the practice matured, states established and empowered, through constitutional amendments and statutes, regulatory structures and practices. Most states now use some form of a regulatory permit system to regulate water rights (allocation and distribution), as opposed to granting permanent ownership. This allows for periodic review of the reasonable and beneficial character of particular users' activities.

Hybrid Water Law

Until a few years ago, hybrid water law could not have been considered a distinct category. The term "hybrid water law" has a wide variety of interpretations. Some would include states that combine parts of a non-English legal system with Anglo-American law; e.g. Louisiana (French civil code) or Hawaii (land tenure dating from the time the State was a Kingdom). Others point to the California system which springs from an appropriation base and adopts parts of the riparian and Spanish systems. For purposes of this report, hybrid water law systems will be defined (as they often are elsewhere) as systems in states that began with the Riparian Doctrine and added permit systems similar to those found in states using the Appropriation Doctrine. There is a great amount of variation in how states implement such a system, and a considerable amount of disagreement among scholars and practitioners as to when and if a state is using a riparian or a hybrid system.

As a practical matter, few permit systems in the East are very comprehensive. For example, Indiana, New Jersey, North Carolina, and South Carolina regulate only ground water and require permits only in those areas where ground water supplies are inadequate to meet existing demand. Moreover, Indiana, Minnesota, and North Carolina exempt existing users, either partly or entirely, from regulation; while Kentucky, Delaware, and Maryland exempt other classes of users as well.

Only Iowa and Florida have truly comprehensive water regulation systems, with Maryland possibly moving in this direction. The Iowa statute, enacted in 1957, established a permit system under the control of the Natural Resources Council, administered by a water commissioner, which regulates rights to both surface and ground water. Although the law purports to leave unimpaired all vested rights, it regulates both existing and unused rights to water. The Iowa law requires that all substantial uses of water be "beneficial." The term beneficial is defined to mean the application of water to a useful purpose inuring to the benefit of the water user and subject to his dominion and control. Permits are issued by a water commissioner. The seat of authority for granting water permits has changed over time, with the task of water management shifting position within the state agency system. The internal structure and proceedure have remaind essentially the same. These permits have a general limitation of ten years. The law prohibits the diversion, storage, or withdrawal of water for most substantial uses from any natural watercourse, underground basin or watercourse, drainage ditch, or settling basin (except for ordinary household purposes and use for domestic animals) without a permit. The water commissioner may suspend the operation of permits if necessary during an emergency, and establish priorities for water distribution. This is to protect the public interest.

In Florida, the Water Resources Act of 1972 established an elaborate structure for the regulation of consumptive water uses. At the State level, the Department of Environmental Regulation oversees the administration of the Act. The State is divided into

five Water Management Districts and the governing boards of these districts are primarily responsible for the operation of the permit system.

Permit applications under the Florida Act must demonstrate that the proposed use is reasonable and beneficial, and will not interfere with any presently existing legal use, and is consistent with the public interest. "Reasonable-beneficial use" is defined as "the use of water in such 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." A permit may be issued for up to twenty years, and as long as fifty years, if the permittee is a municipality, public works, or public service corporation. Also, a permit may be modified or renewed prior to the expiration date. Finally, each District is required to formulate a plan of classification to determine which users are to be given priority of use during periods of water shortage. A shortage, within the meaning of the Act, exists when there is insufficient water to satisfy permit requirements; or when reduction in water use is necessary to protect water sources from serious harm.

In Maryland, the general assembly enacted Natural Resources Article 8-801 in 1933. This technically pre-dates similar acts in Iowa and Florida. This act created the base for Maryland's transition from a pure riparian law state to one which uses a hybrid water law system. Article 8-801 relies upon a concept of used and unused riparian rights, and establishes that protection of riparian rights applies only to waters where usage has been established prior to the legislature deciding to take action. This has evolved into the current interpretation in which there is no private ownership of water. The State acts as trustee for the citizens of the State. Riparian rights are maintained in that landowners are entitled to make reasonable and beneficial use of surface and ground waters within the boundaries of their property.

The statute remained basically unused until 1969. Review of permits for water use went forward without benefit of precedent.

In 1969, the Calvert Cliffs Nuclear Power Plant case established precedent and instigated action by State regulatory authorities. However, the Maryland Water Resources Commission did not establish standards for permits until December 1987. Applications for permits from 1969 through 1987 were handled under interim guidelines. Even under these guidelines, there were a considerable number of applications (1500 per year). Current proposed modifications and codifications of the water permit system will encompass all heavy volume users under the management schema, including agriculture. The systems in Iowa, Florida, and Maryland are examined in greater depth in the following chapter.

CHAPTER III

EXAMPLES OF HYBRID WATER LAW STATES

IOWA

History of the Legislation:

Water law in Iowa is the result of legislative committee action dating back to 1947. In that year the Interim Flood Control Committee was created to study, among other things, the need for legislation to control the use of water. In 1949, the State Water Control and Resources Council was established in response to the recommendations of this committee. The Council was given the authority to establish a statewide plan for the control and protection of water resources. The Council is composed of nine members, appointed by the governor for overlapping six year terms. Members are selected on their abilities without regard to political affiliation. Meetings are held quarterly in Des Moines and interim meetings are held at various locations across the state. From 1952 through 1958, the Council reviewed the nature and condition of water resources within the State and confirmed the possibility of shortages in several areas. In 1950, and again in 1955, the Council recommended that Iowa's water law would need changing. From 1949 to 1955, shortages in water for irrigation and the impact of such use on municipal water supplies brought to the forefront the inadequacies of the Riparian Doctrine. In response to these conditions, the Committee on Water Rights and Drainage Laws was created. The Committee presented a comprehensive report on the current and future problems in water supply. The committee also drafted a bill as an amendment to the legislation which created the Natural Resources Council. As a result of the preceding years of water shortages, the bill was passed through both houses of the

State Assembly without dissent. The Iowa Legislature relied heavily upon the Model Water Code drafted by Professor William Hines of the Iowa University Law School. (Hines, "A Decade of Experience Under the Iowa Water Permit System." Agricultural Law Center Monograph #9, The University of Iowa, September 1966).

Implementation of the Legislation:

The Iowa water permit statute does not define precisely what sort of regulatory policy is to be employed. In general, the nature of the policy is one in which a permittee receives a license to carry on an activity that would otherwise be illegal (much the same as a fishing license). The regulatory lower limit of 5000 gallons a day was established in the initial legislation. In 1975, the Natural Resources Council promulgated rules as to organization, practices, and methods. In 1977-78, these rules were revised to place a 3.5-year moratorium on the issuing of irrigation permits to withdraw water from the Dakota Sandstone Aquifer. Permits for withdrawal were subject to quantification of the aquifer by the Iowa Geological Survey. In addition, restrictions were placed on withdrawals from the Jordan Sandstone Aquifer that limited maximum withdrawals to 200 gallons per minute for irrigation and 2000 gallons per minute for industry. Restrictions were also placed on alluvial well withdrawals based upon their connection to primary watercourses. It is assumed that the closer such wells are to the watercourse the greater the drawdown effect.

Iowa's regulations place limits on the withdrawal of allocated water to the minimal instream flow that is determined for each watercourse. New permits for uses deemed to be consumptive (water is not returned to the watershed) are to be limited to 200 gallons per minute. All such permits in effect prior to July 5, 1978, were to be "grandfathered" until December 31, 1988, and then made subject to the same restriction. (Borofka, "Water Resources Planning in Iowa." Prepared for the Missouri Basin States Association Water Resources Planning Seminar, (January 20-21, 1983).

In 1981, dredging operations which returned water directly back to the source were exempted from permit requirements. In addition, soil conservation plans were made requisite to permitting of irrigation on soils which show moderate to high potential for erosion.

In 1983, The Natural Resources Council was merged with the Department of Environmental Quality. As a result, the authority for issuance of water use permits was shifted to the Iowa Department of Natural Resources-Water Supply Division (DNR/WSD). In addition, a new regulatory lower limit of 25,000 gallons a day was established. (The reader should note that the seat of authority for control/management of water resources has shifted since 1957 and some name changes have taken place. The State Water Control and Resources Council was in charge during the early days, the Geologic Survey/Water Resources Council in between, and the DNR/Water Resources Council currently.)

Impact on Water Users:

Application for a water use permit carries a $25 fee for initial processing. No further cost is accrued if testing is not required. The most frequent procedure requested is the standard pump test; the average cost of which is approximately $1500. The cost of the procedure is dependent upon the time necessary to complete the test. The DNR/WSD evaluates each application on a case-by-case basis and information is often available from previous testing. (Victor Okereke, Iowa Department of Natural Resources. Personal Communication. April 14, 1988).

Impact on Agency:

Currently, the DNR/WSD employs four personnel who devote approximately two-and- one-half person hour full-time-equivalents to review of water use permits. (Okereke, supra.). There have been some changes in placement of administrative authority with regard to the permitting process. At various times, permitting was done

by the State Geological Survey, the Natural Resources Council, and finally the State DNR/WSD.

Initially after passage of the legislation in 1957, the agency was flooded with permit applications. Currently, most permits are renewals. The WSD handles fifteen to twenty applications per month as of this writing. This is mere trickle in comparison to the initial inflow of applications.

Normal Operation of the System:

The Iowa Department of Natural Resources-Water Supply Division is responsible for review and issuance of water use permits. Only uses in excess of 25,000 gallons per day are required to obtain a permit. Users of lesser amounts may obtain a permit (to be included in the water use planning of the agency) as a protection of their water interests. Although not formally articulated, the general policy of the agency is that any applicant, upon showing that the water will be put to reasonable and beneficial use, will be granted a permit. The actual terms of the permit are, however, a matter of agency discretion. While the permit may be granted, the amount of water withdrawn, the time of withdrawal, or the rate of withdrawal allowed may be substantially different from the initial request. This fine tuning of the permit may be required to correct the applicant's mistaken estimate of the amount of water needed for the proposed use. Most often, however, modifications are made to protect the flow of the river. Put differently, withdrawals may only be made when the water level exceeds some statutory level set for the protection of the integrity of the watercourse.

An essential characteristic of the permit is that it does not convey rights to water in perpetuity, unlike the situation found in some of the prior appropriation states. The regulatory agency may revoke water rights if there is a violation of the permit or of the law, or for the protection of the public health and safety. Normally, suspension of the permit requires notice and hearing, but in times of emergency, revocation is at the discretion of the

agency. (Louis Gieseke, Iowa Department of Natural Resources. Personal Communication. October 1987).

Pending Changes:

Iowa went through a period of drought in the early 1980's and considered the situations created by water shortage in a new light. Proposals were floated, but not passed, to add fees for water usage as a market-oriented control of excessive water use. Citizen displeasure with these proposals forestalled any action on the part of the legislature to implement a user fee system. Some parts of the state, however, are at or near their upper user limits during low-flow or drought periods. A weather-induced situation in the future could very well bring these proposals up again. There currently remains an "if-it-ain't-broke-don't-fix-it" attitude among the constituents. Current water law development seems to be in a period of stasis in Iowa. The best experts in the State on the subject of environmental law do not anticipate any changes in the near future. This stasis has been the case for the last decade.

Conclusions:

Although Iowa presents an archetype for much of the hybrid water law in the United States, the lack of controversy generated in this relatively water-abundant State presents some problems for interstate comparison. Although Iowa shares many of the characteristics of Michigan in climate and hydrogeology, the political and social characteristics of the period in which a permit system would be instituted are greatly different. Iowa experienced a drought period just prior to the institution of its permit system. The public was calling for action by their representatives to protect State water supplies, for the general welfare, from the "threat" of intensive irrigation.

Lawmakers had the support of the public for an action that could have been perceived as an undue taking by government of water resources out of the public domain. Because Iowa had the luxury of instituting its system at such a time, it was able to implement it

without a great deal of legal controversy, and without the expenditure of significant political capital by lawmakers. Iowa's code and permit system were never challenged up to the level of the Iowa Supreme Court. Professor Hines of the University of Iowa's Law School's work on the Model Water Code gave State authorities a ready source to go to when "fortuitous" circumstances of 1956 arose.

Although Iowa presents an interesting case for Michigan in its consideration of a permitting procedure, there are certain differences that much be taken into account. First, a centralized system works well for Iowa in that it is a single land area with ready access to a central capital city. Iowa's population is relatively small with a lower number of potential applicants then might be found in another State. Its permit system is heavily devoted to dealing with agricultural, municipal, and residential users, with considerable exemptions from the process for small users. Iowa is not geared to handle significant large-scale commercial and industrial users. A balancing consideration is that adjacent Midwestern states that have dealt with these concerns using a model based on Iowa have had success in implementing it; with, however, a significantly greater amount of legal controversy.

[Most of the commentary in this section was confirmed by telephone contacts within Iowa on the subject of water law. A list of these experts can be found in Appendix D.]

MARYLAND

History of the Legislation:

Maryland is an area abundant in both surface and groundwater. The intent of State legislation, therefore, is not the allocation of a scarce commodity, but rather to provide the statutory framework for resource planning and protection.

Water rights in Maryland have evolved from the common law doctrine referred to in Finley v. Teeter Stone, Inc., 251 Md.428 (1967) as the English Rule, through the American or Reasonable Use Rule, to a mixed or hybrid system. The English Rule held that a

landowner had absolute rights to any water flowing on the surface of the land, as well as to any percolating or flowing groundwater, in the same manner as rights to soil or minerals were exercised. (It is important to note that the facts of Finley vs. Teeter Stone dealt with a situation of injury to property of an adjacent landowner.) This system led to many abuses and was abandoned, for the most part, in favor of the American Reasonable Use Rule. This concept is based on the landowner's right to obstruct or divert water over or under the surface of the land providing that there is no injury to the ability of neighboring landowners to exercise similar rights. The landowner is not liable for damages incurred by such neighbors providing that the use to which the water is put is reasonable. The test of reasonable use is dependent upon the circumstances of the situation and custom of usage.

In 1933 the General Assembly of Maryland enacted Natural Resources Article 8-801, which makes illegal the use of State waters without a permit. In doing so, the legislation relied upon dicta of the Maryland Court of Appeals which in 1875 stated "...these principles of common law, governing the rights of riparian owners, however well established, are subject to change and modification by the statute law of the state...." (Baltimore & O.R.R. v. Chase, 43 Md. 23, 35 (1875)). This regulation draws upon the distinction between used and unused riparian rights, and suggests that protection to riparian rights under common law extends only to those rights which were exercised prior to such time as the legislature decides to take action. This interpretation is consistent with the statutory grandfather exemption which provided for continuation of general uses which had been consistent prior to Jan. 1, 1934. (Power and Bronstein, Chesapeake Bay in Legal Perspective. U.S. Department of the Interior, 1970).

Under the current system of water law in Maryland, there is no private ownership of water. The State acts as trustee for the citizens of Maryland who hold water in common ownership. The concept of reasonable use is preserved in that landowners are

entitled to make reasonable use of surface and groundwater located within the boundaries of their land.

Implementation of the Legislation:

Maryland water law was intended to provide prior administrative adjudication of riparian rights relative to the impact of a proposed use on the resourse and on other users. In many cases, this precludes the necessity for court adjudication after damage has occurs. Prior to 1969, the statute remained principally unused, and no precedents existed for review of applications for permits. On December 12, 1969, the Baltimore Gas and Electric Company (BG&E) filed an application with the Maryland Department of Water Resources (DWR) for the use of 3,500,000,000 gallons of water per day in the Calvert Cliffs Nuclear Power Plant. The lack of prior precedent for the conduct of such a review and associated public hearing made the job of the DWR a difficult one. It was seen as being likely to result in the setting of standards for future review. (Bronstein, "State Regulation of Powerplant Siting." Environmental Law, Vol. 3, No. 2, Summer 1973).

In the years following Calvert Cliffs, the agency (now called the Maryland Water Resources Administration (WRA)) developed policies and guidelines for both the application and review processes. On December 4, 1987, the WRA published their proposed action on regulation in the Maryland Register. These regulations represent a codification of long-standing regulatory requirements for the implementation of the Water Use Act. The WRA invited public comment through January 15, 1988, and a public hearing was to be scheduled for January 6, 1988. Specific requirements codified into these regulations will be discussed later in this report.

Impact on Water Users:

Since enforcement of the permitting requirements did not take place until the 1970's, no great impact was felt until the WRA began to formulate regulations. Application for a water use permit

does not accrue a cost to the permittee if the use is for less than 10,000 gallons per day (averaged annually) or if no test procedures are required for issuance. The WRA staff evaluates each application on a case-by-case basis. In many instances, information as to source and quality are known from previous applications on neighboring property, and new testing is not required. The impact on the average user is therefore minimal. (Robert Miller, Maryland Water Resources Administration. Personal Communications. October 16, 1987 and April 13, 1988).

Approximately 1500 applications are processed each year. Perhaps 20 of these applications require extensive testing. Costs may vary widely dependent upon the nature of the use, the source, and the area of application. The average cost of the most common test procedure, a standard pump test, is $3,000. Much of the initial cost is recoverable in operation costs, since the well drilled may be used subsequently for normal pumping. Applications for water use in connection with large-scale land uses, such as stone quarries, may require much more elaborate procedures and costs may run as high as $100,000. The cost to the average business is approximately $200 to $500 (Miller, supra).

Aside from testing, the major economic cost to consumers is for monitoring equipment on water use permits which require monthly reports. The meter required is usually standard in nature and not extraneous to the normal function of the pumping equipment. The average cost is $200-$300 per meter. Large users such as stone quarries may require master flow meters which cost approximately $500 (Miller, supra).

The chief remaining cost to users is that of time. While the permitting procedure (paperwork, filing, etc.) is not arduous, the monitoring procedures require monthly devotion of time and manpower. Typically, the waiting period between application and issuance is three weeks.

Impact on Agency:

The WRA employs five full time personnel who deal exclusively with permit evaluation. It is anticipated that two additional positions will be required to handle agricultural permits, bringing the total to seven. No figures are available as to the annual budget of the Water Supply Division; however, it is projected that the addition of agriculture to the program will cost approximately $100,000/year. (Proposal for Legislation/Agricultural Water Appropriation or Use. 1988 Legislative Session, Maryland General Assembly).

Normal Operation of the System:

The Maryland Department of Natural Resources' Water Resources Administration (DNR/WRA) is responsible for planning and development in the area of water supply. Local county jurisdictions are required to submit water and sewer plans to the State for approval. These plans are then used as a basis for water supply decisions at the statewide level. (Booth, "A Directory to Water Supply Planning and Management in Maryland." Cooperative Extension Service, The University of Maryland, 1984-85). The WRA water permitting program is administered under the Water Supply Division. Applications for permits may be obtained from the WRA. When submitted, the application must contain maps and plans of water use, alternative sources of water, test data when required (both quantity and quality), and information on the impact of appropriation on other users. Applications must be consistent with county water and sewer plans as well as State and local ordinances; such as health department regulations and State water discharge permits. In particular, if the zoning of the area in question is not consistent with the requested water use, the WRA may deem that the intended use is not rational under the Reasonable Use Rule. (Pitt et al., "Regulation of Water Resource Appropriation." Cooperative Extension Service, The University of Maryland, 1986-87).

Currently, permits are not required for agriculture, domestic use, or public safety uses such as fire fighting. Uses which require permits include:

1) an appropriation prior to January 1, 1934 if the quantity has increased or the source of the water or area served has changed;

2) a municipality making a use of state water prior to July 1, 1969 if the quantity of use has increased or the area served has changed;

3) subdivided land whether the source of water is from a central well or a source located on each subdivided lot;

4) any structure or impoundment which will move water from its source of natural occurrence;

5) use of surface or ground water for domestic heating or cooling; and

6) any other commercial, institutional, industrial, or municipal use.

(WRA Proposed Regulations, 1987)

Test data is rarely required on applications of less than 10,000 gallons per day. For requests in excess of that figure, however, aquifer test procedures may be required. These procedures involve the construction of test wells to determine such characteristics as the ability to convey water, storage capacity, the potential for salt water and/or groundwater intrusion, and water quality. The information gained by the test wells may be required to be made available to the WRA for groundwater mapping. (WRA Aquifer Test Procedure 1986). This information as well as water withdrawal reports are stored using a computer program referred to as the Water Appropriation Network (WAN). For each appropriation permit the WAN system stores:

1) file or permit number;
2) permitee's name or mailing address;
3) permitted quantity; source of use;

4) location of the withdrawal on a grid coordination system;

5) use of the water; and

6) whether the permittee is required to report monthly withdrawal amounts.

(WRA, "Maryland Water Withdrawal and Use Report for 1985," 1987).

Application for water use in excess of 10,000 gallons per day requires the WRA to publish a Notice of Application and Opportunity for Public Hearing in the Maryland Register. The applicant must then inform neighboring landowners of the application. Any interested party may then request a hearing within 15 days. Requests for hearing must be honored before a permit may be issued. Hearings must be scheduled within thirty days of receipt of the application. (WRA Proposed Regulations, 1987).

Opportunity for public hearing is not generally required when (1) permit is requested for less than 10,000 gallons per day, (2) a permit is temporary or involves minor changes to an existing permit, (3) or water use is continuous since Jan. 1, 1934, for municipalities, or July 1, 1969.

Violations of existing permits are handled by the WRA by (1) issuing an order for corrective action, (2) requiring a written report, and/or (3) requiring appearance at a WRA hearing to answer the charges. Upon proof of violation, the WRA is empowered to modify or revoke a water permit. Request for motion on a punitive action must be filed within 10 days of the receipt of the action and a decision regarding the matter must be delivered within 10 days of the hearing. The WRA reserves the right within the Water Use Permit to restrict water consumption in time of supply stress (Pitt et al., supra).

Dam construction or alteration also requires a Waterway Construction Permit. Well construction requires an additional permit from the Department of Health. Power plant construction only requires a Permit of Public Convenience (Pitt et al, supra).

There are (as of 1987) 15,000 active water appropriation permits, many of which are in excess of 10,000 gallons of water per

day and therefore subject to monthly reporting requirements. Applicants are rarely denied a permit, due to current abundance in supply and willingness of the WRA to work with applicants to find alternative water sources (Miller, supra).

Pending Changes:

The issue currently of most interest in Maryland is the exemption of agriculture from the permitting system. In 1985, a Water Use Task Force recommended agriculture be required to obtain water permits. The committee included representatives from the Department of Agriculture, the Farm Bureau, the State Grange, and the University of Maryland. It was the consensus of the Task Force that the interests of the farmers could be best protected by inclusion in the planning programs of the WRA. (Brodie, "Proposed Changes in the Maryland Water Law Will Affect Agriculture." Cooperative Extension Service, The University of Maryland, 1986-87).

Water use for agricultural irrigation is rapidly expanding in Maryland. In 1982, virtually all 48,000 acres of cropland in the State employed some level of irrigation, an increase of 22,000 acres from 1975. It is projected that irrigation in Maryland will more than double by the year 2000. It is estimated that in the height of the farming season, 70-80% of all water withdrawals in the Eastern Shore counties are for irrigation. The current exemption of farming from permit requirements also bars comprehensive accounting of the amount of water used for irrigation. Since no record in currently kept as to amount, source, or area of use, water currently used by agriculture may legitimately be appropriated to other users. In addition, since farmers do not participate in the process, they may not be aware of aquifers and other sources which provide long term reliability (Proposal for Legislation, supra).

Implementation of this plan for agriculture requires amendment of the current law by the State Legislature. This issue was brought before the Legislature in the 1987 session and referred to

summer study. (Maryland has a part time State Legislature.) The bill amending the Water Use Act requires a water appropriation permit to be obtained for farming use in excess of 10,000 gallons of water per day averaged over a year. Smaller users who wish to be included in planning may voluntarily obtain a permit. Existing users would be grandfathered into the permit system without need of hearing or notice over a five-year span. Agriculture would also be exempt from provisions in the original statute for revocation of the permit, should the water not be used for three years. (Lynn Hoot, Maryland Department of Agriculture. Personal Communication, October 16, 1987).

The amendment also provides a priority system for drought emergencies as follows:

1) domestic or public health uses;
2) agricultural use;
3) all other uses.

In addition, the bill removes other grandfather clauses originally included in the statute for municipalities and other uses (Proposal for Legislation, supra).

Conclusions:

Characteristics of the water supply situation in Maryland are in some ways very similar to that of Michigan. Both states are rich in water resources, however the availability of water in a particular area is a function of precipitation, geology, topography, and vegetative cover. In addition, the patterns of population and urban development are a major force to be considered.

To date the Water Use Act has had little if any impact on the average permittee in Maryland. It may be foretold, however, that when demand exceeds supply, the impact will be felt to a much greater extent. Although regulation of water resources during times of abundance may appear to be a waste of tax dollars, the

justification lies in the principles which are established by such regulation. First, the precedent of centralized control of a valuable resource is firmly established in the mind of the public. Second, the information gained from permitting concerning location, quantity, and quality of groundwater supplies may be invaluable when real competition among water users arises. Lastly, regulation encourages efficient use of the resource as well as the development of new sources. Thus, the benefits of comprehensive planning to both present and future users may be immeasurable in terms of resource protection.

The greatest drawback to transfer of a centralized system such as Maryland's to Michigan is Michigan's greater size and diversity. The impracticality of a water user in the northwestern region of the Upper Peninsula being required to submit an application to an office in Lansing are apparent. The issue of quantity of water supply is intrinsically bound to that of water quality. Just as Maryland must at all times consider the effect that water use will have on Chesapeake Bay, Michigan must keep protection of the Great Lakes to the forefront of conservation efforts. The issue is not simply one of how many users can be supported on the system, but rather what effect will such use have on the viability of that system.

[Most of the commentary in this section was confirmed by telephone contacts and interviews within Maryland on the subject of water law. A list of these experts can be found in Appendix D.]

FLORIDA

History of the Legislation:

Florida has a water law system firmly planted in the Riparian Doctrine. Prior to becoming a U.S. Territory, Florida was a possession of Spain. Although agreements under the Treaty of Cession (the Adams-Onis Treaty of 1819) made it clear that Spanish land grants were to be recognized, this never had a significant

impact upon the legal regulation of allocation of water (unlike the situation found in California). From entry into the Union in 1845 until passage of additions to the State Water Code in 1972, the State kept the focus of its legal management of water clearly within the traditions of the eastern United States and England. (Water Management Plan for the Northwest Florida Water Management District : Vol. II Legal/Institutional Framework, Northwest Florida WMD).

In 1972, Florida incorporated into its statutory code some features of an appropriation system, for the purpose of controlling allocation of water resources. Even with the 1972 provisions of the State Water Code (Florida Water Resources Act; Ch. 373, Florida Statutes), Florida lawmakers and regulators still view their hybrid water law system as being primarily in the riparian tradition, adhering strongly to public trust, natural flow, and reasonable-beneficial use doctrines.

Florida's legislative-regulatory water management history can be viewed as an ongoing process of matching an abundant, yet fragile, resource base to growing human needs and expectations. Except for those acts passed in response to Federal legislation, all major changes in Florida's water law have been made in the aftermath of some weather-based trauma, an overuse of the water resource base, or a combination of the two conditions. Florida's first two regional Water Control Districts were initially created as flood and drainage control authorities following hurricanes and floods in the 1920's and 1940's. Comprehensive State water districting took place after a two-year drought in the early 1970's. Development of regional water authorities took place in response to "water wars," periods in which areas tried to tap into inland groundwater sources away from their established territories. This occurred when well sources within a region's boundaries became contaminated through salt water intrusion after excessive drawdown. Rapid population growth and development in the 1970's and 1980's lead to passage of laws for the coordination of water and land resource planning and the regionalization of water quality

management. (Blake, Land into Water - Water into Land, University Presses of Florida, 1980); Maloney et al, Florida Water Law 1980, Water Resources Research Center, University of Florida, 1980).

Florida continues to develop its approach to legal and institutional management of water as population pressures mount and the resource base becomes more intensively utilized. Water management has not been approached historically as a holistic task in the State. Water management strategies have varied with perceptions of what the problem of water management was at the time. Several key tasks evolved for State authorities. Flood and drainage control emerged first. Water supply was the next issue to emerge, linked with some water quality concerns (especially saltwater intrusion). Currently, compatible blending of population growth and economic development with the realities of the water resource base are the key focus.

In the first part of the State's history, Florida dealt with the classic situations involved in water law: ownership and right of passage. Common law remedies were then considered to be sufficient to deal with any conflicts arising with regard to water. When the U.S. Federal Government passed the Swamp and Overflowed Lands Act of 1850, Florida received possession of more than 20 million acres of wetlands. To manage these resources, Florida established the Board of Internal Improvement in 1851 at the State Cabinet level. Although ambitious plans for navigation development and wetland drainage were proposed in the 1800's, the advent of the Civil War and the economic depression that followed forestalled any of these plans. (Canter and Christie, "Water Regulations and Policies." In Water Resources Atlas of Florida, Fernald and Patton (ed.), Florida State University, 1984).

In the early part of the 20th century, drainage and flood control were the key problems, and creation of usable farmland in the Everglades region was a clear goal. Initially, infrastructural changes were the primary water management tools. The construction of levees, drainage canals, and floodways for water control was a key task for public and private agencies. Laws were instituted to

aid in the creation of such changes; allowance for Special Use Districts was made and taxing authority was transferred to fund such changes. Florida has spent a considerable amount of its history attempting to drain wetlands to convert them to agricultural and residential lands. The creation of a governmental unit in 1907, later called the Everglades Drainage District, began what has evolved into Florida's largest water drainage project. Passage in 1913 of the General Drainage Act established a process whereby adjacent landowners could form Water Management Districts to deal with their management problems (Cantor and Christie, supra).

In 1948, the Federal government became seriously involved in Floridian flood control. In response to passage of the Flood Control Act of 1948, the Army Corps of Engineers constructed a large network of flood control structures. Management of these facilities was turned over to the newly created Central and South Florida Flood Control District (CSFFCD).

In 1955, Florida established the Water Resources Study Commission to examine the State's overall water problems and what needed to be done to address them. In 1957, the legislature passed the Water Resources Act. It created a State-level Department of Water Resources and empowered it to grant permits for excess water withdrawals and to use water conservation as a tool to prevent salt water intrusion into aquifers. Performance of this agency was somewhat less than optimal in achieving these water management goals. A parallel process was undertaken at the same time to deal with water quality issues. Because of State and Federal efforts continuing through the mid-1970's, these pollution control efforts were substantially more successful.

Despite this long history of dealing with water issues, Florida was once again faced with water supply problems in the early 1970's. In 1970-71, Florida experienced its worst drought in recorded history. Gov. Reuben Askew called for a comprehensive effort to deal with water and land use problems, and the impacts on them of the State's rapid population growth. The Legislature

passed a four bill package to address these concerns. (Blake, supra). The statutes are:

1) The Environmental Land and Water Management Act
2) The Comprehensive Planning Act
3) The Land Conservation Act and
4) The Water Resources Act.

The Water Resources Act (Fl. Stat. Ch. 373, Sect. 012 et seq) was largely based on the Model Water Code work done by Dean Frank E. Maloney and his working group at the University of Florida Law School. (Maloney and Ausness "A Modern Proposal for State Regulation of Consumptive Uses of Water." Hastings Law Journal, Vol. 22, p.523, 1971). The Act created the groundwork for a regionalized water management system with six Districts (two in existence, four newly created) comprehensively covering the State. The Act also called for coordination with the local land use districts created under the Comprehensive Planning Act, and for the creation of a comprehensive State water use plan. Seven key tasks were delineated under this act:

1) provide for the management of water and related land resources;

2) promote the conservation, development, and proper utilization of surface and ground water;

3) develop and regulate dams, impoundments, reservoirs, and other works and provide water storage for beneficial purposes;

4) prevent damage from floods, soil erosion, and excessive drainage;

5) preserve natural resources, fish, and wildlife;

6) promote recreational development, protect public lands, and assist in maintaining the navigability of rivers and harbors; and

7) otherwise to promote the health, safety, and general welfare of the people of the State.

The Districts are to coordinate with Regional and Special Purpose Water Authorities (Fl. Stat. Ch. 298: Drainage and Special Purpose Water Management Districts) to accomplish these tasks as well as these smaller units' goals.

The Districts were to have regulatory oversight by the State Department of Natural Resources. This initial oversight arrangement did not meet expectations, primarily because of split authority between different State agencies on environmental matters. In 1976, this oversight function was shifted to the newly created Department of Environmental Regulation (DER) under the Florida Environmental Reorganization Act of 1975 (FERA), and the statutory authorization of ad valorem taxing authority was granted to the Districts. The Environmental Reorganization Act officially established the current Chapter 373 District plan.

With the responsibilities for water supply and allocation passed on to the Districts, Florida entered a new era in terms of water management. Under the Chapter 373 provisions, the Districts were empowered and directed to develop water permitting systems for surface and ground waters, and to implement such plans for the reasonable-beneficial use and conservation of State water resources. In a sense, Florida is no longer one political unit with regard to water. The degree of autonomy for the Water Districts is high. They have governing boards which are appointed by the Governor and confirmed by the Legislature and which act in a fairly independent fashion and have considerable fiscal resources of their own.

Although there is an implied oversight function, central authority over these Districts has always be relatively minor, and seems to be decreasing even further with proposed changes brought up under the "sunset" review being undertaken on Chapter 373. Regionalization of water authority is working so well that much of the authority and responsibility to regulate water quality is being passed on to the Districts as well.

The five present Districts created or included in the comprehensive plan are:

1) South Florida Water Management District (SFWMD; 1949);

2) Southwest Florida Water Management District (SWFWMD; 1961);

3) St. John's River Water Management District (SJRWMD; 1972);

4) Northwest Florida Water Management District (NWFWMD; 1972); and

5) Suwannee River Water Management District (SRWMD; 1972).

Each of these Districts was created to conform as closely as possible to the boundaries of major State watersheds and keep to county boundaries. A sixth District (the Ridge and Lower Gulf Coast Water Management District) created in the original plan was dissolved in 1977.

The Districts are governed by boards whose members are appointed to four-year terms by the Governor and confirmed by the Senate. Day-to-day operation of the Districts is done by an executive director and technical/legal staffs.

Implementation of the Legislation:

The key transition periods to look at are those just after passage of the Florida Environmental Reorganization Act of 1975 and implementation of water control strategies within the Districts in 1976. Transition costs so far have been minimal due to one key factor: the water allocation stratagem implemented has been primarily one of accounting, not limitation. Florida's Water Districts have been interested in determining who is using water, how much is being used, and for what purpose. Except during periods of actual water emergency, any water saving that has been achieved has been through the implementation of more efficient methods of water use. It has not been achieved through the denial of water for any specific purpose.

Florida was able to pass and implement its hybrid water management laws because of a fairly unique convergence of natural events, social trends, and political developments. As mentioned before, Florida had undergone a severe drought in the early 1970's, which highlighted the fragility of the State's water resource base. Up until this time, people generally thought of the State as having abundant, if not excessive, supplies of water. Population growth had been explosive, and the rate continues at a level that brings 1000 new residents into the State every day.

In 1972, Florida had just elected a new group of legislators; the first after the reapportionment of the State following the 1970 Census. There was a clear Democratic majority in both houses willing to follow the lead of Gov. Reuben Askew and his environmental aid, Bob Graham. Environmental protection and conservation were clear goals of this administration. Strong constituent support made the passage of this act possible with minimal expenditure of political capital. (Tom Herbert, T.A. Herbert and Assoc. Personal Communication; Tallahassee, FL; Jan. 1988).

It is possible that Florida may not have yet experienced a true period of transition or incurred full transition costs. The Districts have yet to face a time when they will have to generally limit supply and use of water. Florida's rapid population growth and resultant rapid urbanization make this second tier transition period a near certainty. There has been an extensive amount of water regulation written since passage of Chapter 373. The foundational piece of Statewide regulation is the State Water Policy (adopted as Rule 17-40 of the Florida Administrative Code) in which reasonable-beneficial use is qualified for rulemaking by DER and the Districts. According to the State Water Policy, ten factors that need to be considered when granting a permit are:

1) whether the impact of the withdrawal extends to land not owned or legally controlled by the user;

2) the method and efficiency of use;

3) water conservation measures taken or available to be taken;

4) the practicality of reuse or the use of waters of more suitable quality;

5) the present and projected demand for the source of water;

6) the long-term yield available from the source of water;

7) the extent of water quality degradation caused;

8) whether the proposed use would cause or contribute to flood damage;

9) whether the proposed use would significantly induce saltwater intrusion; and

10) the amount of water that can be withdrawn without causing harm to the resource.

From these basic guidelines, each of the Districts has developed an extensive permitting system.

Impact on the Water Users:

In Florida, the introduction of a hybrid water system and the implementation of a permit system transpired in a fairly smooth fashion. Impact of the first enforcement on agency users was minimal. The greatest problems occurred in transfer of information: informing the public of the need to apply for permits, the rationale behind the permit system, and the procedures for permit applications. Although there was the usual amount of reluctance on the part of the public to accept a new set of government rules and guidelines, the shared experiences of water-related crisis helped the public to understand the need for change.

Legal controversies have centered primarily upon the State's and Districts' right to control/allocate water. The Florida Supreme Court settled this issue in its ruling in Village of Tequesta v. Jupiter Inlet Corp. 371 So. 2d 663: Fla. (1979), in which it confirmed that any right of a user to water is vested in the permit process.

Since it is general knowledge that the permit system exists more to inventory water use in the State and to vest rights to water supply than to restrict access to water, compliance is high with relatively little controversy. There continues to be a significant amount of adjudication ongoing at the State regulatory agencies and District levels, but the decisions are heavily in favor of the Districts.

General impact on stakeholders has been minimal so far, but is potentially great. The power of the Districts to protect water supply and quality is great, and it appears as though this will continue into the future. Florida is serious about water, land, and natural resource management. Conflicts and competition between users can only increase with the increasing population and development exhibited throughout all areas of the state and sectors of its society.

Costs are relatively low for users so far. Tax dollars (both ad valorem and general revenues) have covered costs of operation of the permit system in most Districts. Because of its constitutional revenue cap, the Northwest Florida WMD has had to seek "soft money" (i.e., grants) to cover its expenditures. Discussions of fees for water have taken place in Northwest Florida WMD and charges are levied for some users in Southwest Florida WMD. The key general costs to users now are in documenting the various points of information necessary to file a permit application and in submitting the permit to the Board. (Webster and Morgan, "Taxation and Regional Water Management in Florida." In Regional and State Water Resources Planning and Management, American Water Resources Association, Oct. 1983).

Impact on the Agencies:

Organizational impacts have been extremely significant. Unlike the highly centralized management system found in Iowa, Maryland, and Michigan, power is spread throughout a great number of State and regional agencies. Total State and regional staff dealing with water management and permitting numbers well over 1000 persons.

Each of the Districts have staffs that number from 85 in the Northwest to 560 in the South. There is a significant number of staff collectively in the State agencies interacting with the Districts on various aspects of water management. Staffing increases are taking place at all the Districts to meet their growing water supply responsibilities and their new water quality responsibilities. In a sense, the transition to the system continues because of these growing responsibilities.

Time is arguably the largest expenditure for all persons involved with the Florida water management schema: private users, municipal users, private-sector users, State agencies, and regional and local Districts all spend large amounts of time dealing with tasks to comply and assure compliance with State water laws and regulations.

There are several standing controversies in the Florida system. Decentralization of power is not as great a point of debate as one might expect. The successes demonstrated by the Districts in managing water has undercut most arguments about creating these semi-autonomous units of government. Some members of the Legislature would like to have a greater voice in the selection of members of the District governing boards. How the independent taxing authority of the Districts should be used is a key consideration (especially in light of Florida's recent legislative battles over "revenue enhancement").

The role of State agencies, especially DER, in the oversight of the Districts is a point of current contention. Although DER sees itself as the key regulatory agency, it has not had a great deal of success in bringing about changes in any of the Districts' policies. Inter-District transfer of water is one area in which DER sees that it will have an increasing role in the future. District personnel believe that they will be able to negotiate differences between themselves in the future, without Tallahassee intervention.

Normal Operation of the System:

Florida easily has the most complex permitting system of any of the states studied. A number of factors contribute to this complexity. Even with centralized oversight by DER, each of the Districts has its own set of permit rules and regulations. These rules vary significantly in length and complexity. The northern Districts have a small number of forms and procedures to follow for the different permit categories. The southern Districts have much more detailed permit systems with multiple-volume permit manuals and a variety of specialized forms and procedures (depending upon the proposed type and volume of water use).

There are some points that are common to all the Districts for permitting. Permits are generally required for any of the following activities:

1) water use;

2) construction, repair, and abandonment of water wells;

3) construction, alteration, or abandonment of dams, impoundments, reservoirs, or other works, for surface water management or stormwater systems;

4) connection to, withdrawal from, or discharge into District works; and

5) construction involving artificial recharge or the intentional introduction of water into any underground formation.

The use threshold level for granting a withdrawal permit of any type is generally an average flow rate of 100,000 gal/day.

Consumptive use was a key point of concern and reason for the permit system being introduced. Some standardization exists across the Districts regarding what is required to obtain a consumptive use permits. There are two basic categories for consumptive use permits: individual and general. Individual withdrawal consumptive use permits are required when the average daily withdrawal will exceed 100,000 gal/day, or the maximum daily withdrawal will exceed

1,000,000 gal/day. Permits are generally required for wells over 6 in. in diameter for any purpose.

There are some categories of information that are necessary for all permit applications throughout the Districts. Permit applications are required to list the maximum and average daily amounts of withdrawal, with some Districts requiring an indication of amount consumed and amount recharged. The source of water supply must be identified and, in some cases, specifics on its flows and capabilities need to be stated. The methods of withdrawal (size and type of pump, pipe, wells, motors, and other equipment) need to be listed. How the water is to be used must be cataloged (agriculture, residential, industrial, etc.). The point of withdrawal needs to be specifically described, satisfying all legal definition requirements including sketches of the site, measurements to boundaries, and relationship to existing wells. Statutory requirements under Chapter 373, section 229 need to be met, including the date of application and the date of hearing (if any). All applications must have a dated signature.

Fees are levied for permits in all Districts except SFWMD. Fees are generally nominal ($10-60 for an individual permit), but the assigned tasks or auxiliary fees can be quite substantial. Generally, the largest expenditure for any permit applicant is in person-hours and documentation. Site and source characterization can be extremely expensive, especially for large scale commercial, industrial, and residential development.

Many of the Districts have volume-size or multi-volume manuals for different classes of permit application. It is the rule, rather than the exception, that applicants need to seek outside help in preparation of their forms. The Florida Cooperative Extension Service in conjunction with the Soil Conservation Service has programs set up to aid agricultural applicants. Each of the Districts have staff to aid individual residential applicants in completing their forms. There is a thriving business among consulting and legal firms to aid larger operations in the permitting process.

Metering of water is a concept that has not been found to be acceptable in Florida. Southwest Florida WMD has had the longest history of dealing with metering programs, but even there compliance is low. Users perceive meters as a step toward having the Districts charge fees for water. Northwest Florida WMD has already proposed such fees. Meters have had their greatest utility as tools for making hydrogeological measurements in the process of applying for permits.

Competition for water is a problem in certain regions of the State (e.g., Tampa-St. Petersburg-Pinellas County), but has generally been dealt with by better management techniques. Tampa-St. Petersburg has an extensive water reuse program in place. So far, major use conflicts have been avoided due to the fact that (1) the Districts have not made substantial efforts to deny water, (2) significant efforts have been made to increase the efficiency of water usage, (3) pollution control has been a major priority (even with the considerable natural water treatment endowment found in the swamps and wetlands of southern Florida), and (4) water crisis management has been done in a fashion that is fair to all users.

Consumptive use permitting was implemented at different times in the various Districts. South Florida WMD and Southwest Florida WMD had their permitting structures in place prior to passage of the 1972 legislation. St. John's River WMD put their permit system into operation in 1980. Northwest Florida WMD and Suwannee River WMD put theirs into effect in the mid-1980's.

Water shortage plans differ somewhat between the Districts. All the Districts follow variations of the plans developed by South Florida WMD and Southwest Florida WMD. South Florida works on a user classification system: domestic, essential service, public supply, livestock, agricultural, industrial, mining, power, and recreational use. Priority categorization runs from domestic (the most important) to recreational (the least important). Water shortage situations are gauged by the total supply levels available. When shortage is declared by the Governing Board, seven

categories of action may be undertaken by the District to reduce the use of water and to maintain water supply. The District can:

1) allow water users in the affected area to make voluntary agreements among themselves for mutual reduction, sharing, or rotation of use;

2) allow distribution of water to permit holders who stop or reduce ground water withdrawals;

3) provide for metering and reporting of all water used;

4) make provisions for maintaining minimum flows and minimum levels;

5) make provisions for preventing deterioration of water quality from such causes as salt water intrusion;

6) restrict the total amount of water that may be used during any day, month, or year; and

7) restrict timing of use and pumping rates.

The Districts have been given broad authority to deal with water crises and can take these strategies to great lengths to protect water supply for priority users. During water shortages, uses are restricted by class of user.

When water supplies become so depleted as to present a threat to public water supplies, ecosystems, and competing water uses, the District can declare a water emergency. During water emergencies, water use can be restricted on a case-by-case basis in which individual users can be limited.

Southwest Florida has a user prioritization scheme similar to South Florida WMD: domestic, essential service, livestock, irrigation, industrial, mining, power, attractions, lawns, perishable food processing and recreational use. Southwest Florida WMD also has a source classification system: aquifers, streams, and lakes. This combined scheme allows the District to manage both water shortages and water emergency situations on an individual user basis.

Pending Changes:

There have been alterations made to and proposed for the Florida water management system that could significantly affect authority and operations. These changes are primarily directed toward water quality management, and therefore are not within the central focus of this report. In 1985, the Florida Legislature passed the Surface Water Improvement and Management Act (SWIM), amending sections of Chapter 373. The realized effect of this legislation was to transfer most of the State's water quality management authority from DER to the Districts. DER maintains a regulatory oversight capacity, but rulemaking and day-to-day management become the responsibility of District staffs. The greatest impact that this will have on water supply and consumptive use regulation is that it significantly broadens the scope of District activity and the scope of District authority to act on all manner of water issues. District resources have been strained to meet deadlines to develop plans for implementation of SWIM, and the funding of these activities has been a problem in some Districts.

Florida State government has appointed the Environmental Efficiency Study Commission and charged it to examine how well environmental protection is being done by various State agencies, and how their performance can be improved. The Commission has basically recommended that the Districts should continue to receive more power and responsibility with regard to water issues. It also recommends that the taxing\funding authority be made equal among the Districts (i.e. allow them all to come up to the one-mill cap allowed in the southern Districts). As it stands now, Districts must deal with a three-tiered tax cap: constitutional, statutory, and assessed property value. Adjustments in the first two tiers would allow the northern three Districts to more rapidly implement their programs and to meet new duties with regard to water quality. (Environmental Efficiency Study Commission Final Report, Feb. 1, 1988).

Conclusions:

To quote one District Executive Director, "Florida has absolutely, positively the best water management system in the United States ... for Florida." The Floridian hybrid water law and permit management system was created to deal with problems found in the State. Florida has a plentiful supply of water in a fragile ecosystem base. With the rapid development and population growth that the State has undergone in this century, Florida's system makes superb sense for it. The system is too greatly developed to have much utility for Michigan. It is efficient, but would vest too much power in regional authorities. The level of overkill (i.e. the amount of authority created over and above the needs of the situation) would create more problems than it would resolve for Michigan. It would be like going duck hunting with a howitzer; it would get the job done, but at a greater level of cost than reward.

[Most of the commentary in this section was confirmed by telephone contacts and interviews within Florida on the subject of water law. A list of these experts can be found in Appendix D.]

CHAPTER IV

MICHIGAN WATER LAW

Current Michigan Water Law

Michigan's interpretation and implementation of the Riparian Doctrine relies almost exclusively on common law. A rich heritage of case law may be found in Michigan legal history. In Michigan water law, nothing is more sacred than riparian rights. Landowners who legally have riparian rights commonly band together into relatively small groups known as lake associations. Individual riparians often treat non-riparians as "have-nots." Many riparians seem to be afraid to discuss the subject--as if to dissect and analyze the phrase "riparian rights" would be tantamount to the dismemberment of a religious idol or spiritual incantation.

Case law has ruled the day in Michigan. Michigan made the transition from the natural flow theory to the reasonable use approach in the case of Dumont v. Kellogg, 29 Mich. 420,422 (1874). The court in the Dumont case discussed the use of common law precedents. Since the Dumont case, the Michigan tradition has been to use the reasonable use doctrine for all State surface and groundwaters. Reasonable use is the essence of riparian rights in this State.

In Michigan, there is a need for a definitive statement of what is reasonable use as applied to the extraction of percolating (ground) waters. An answer was almost given in Jones v. East Lansing-Meridian Water & Sewer Authority, 98 Mich. App. 104, 296 N.W. 2d 202 (1980). However, following a remand to the trial court by the Michigan Supreme Court, the litigants (homeowners) ran out of money, and the case was settled out-of-court without the benefit of a useful precedent to define the concept of reasonable use.

Tradition and the doctrine of stare decisis have combined to lock Michigan water law into a system dominated by case law. Statutes cover some issues and subjects and do so with commendable efficiency and fairness, but the bulk of the relationships among water users, among co-riparians, and between the State and all water participants are created, defined, and/or implemented by court decisions--one case at a time.

Legislative attempts to modify riparian rights in the State of Michigan have met with little to no success. Legislative committees, over the years, have drafted definitions for this subject, but organized interest groups have successfully stifled any attempts to list or spell out exactly what these rights are or what applications might be expected (e.g. Sect.2 Michigan Inland Lakes and Streams Act, M.C.L.A. Section 281.952). Often there arise circular definitions, using "riparian" as a self-defining term. Citizens are left with basic questions that hamper resolution of problems and situations that arise over conflicting water use. What are "those rights" associated with ownership of the bank or shore? Who has title to an island in the pathway of the extension of boundary lines from a riparian shoreline? The list of unanswered questions is nearly endless. New legislation could provide answers and/or clarifications, but there is no guarantee that it will.

The legislature has a vast power in the authority resident in state "sovereignty" to create, change, destroy, or re-allocate basic property rights and ownership interests. Riparian rights are property rights and, therefore, cannot be confiscated (taken) without due process of law. This legislative authority (and obligation) is found in the Michigan Constitution. However, in the past, legislative committees have been too timid to articulate riparian rights with any degree of specificity. On several occasions (drafted into bills and/or enacted statutes), the legislative disclaimer has been stated that "this act" shall in no way interfere with or impinge upon existing riparian rights. Such statements are, for whatever political purposes, falsehoods. At

best they create a deception. The only way that the legislative processes will have no impact on riparian rights is for the legislature to do nothing, to enact no law at all concerning water use. The fact of the matter is that legislative products of Michigan currently do not provide State administrative agencies with the comprehensive authority required for management or planning functions.

The interests (rights) of Michigan riparians as they were established prior to any enactment will be expanded or contracted or at least changed. There is a finite set of these interests in each spatial (three-dimensional) segment of the water resources of Michigan. Re-allocation often means that the interests of the "haves" are reduced in favor of the "have-nots." For example, if agriculture secures by enactment "an equitable share" of Michigan's inland waters, this must be done at the expense of existing residential and recreational water users.

Another consideration that must be factored into discussions of Michigan water law is that of public trust. The public trust concept has been somewhat expanded in Michigan natural resources legislation. For example, Michigan's Environmental Protection Act (MEPA), 1970 PA 127, M.C.L.A. section 691.1201 et seq, is considered the legislative fulfillment of the duty imposed by Article Four (4), Section 52 of the Michigan Constitution (see State Highway Commission v. Vanderkloot, 392 Mich. 159, 220 N.W.2d 416 (1974)). The public trust is a critical aspect of the constitutional right of the State's citizens to protect their paramount public interest in the State's natural resources. See People ex rel Director of Conservation v Babcock, 38 Mich. App. 336, 196 N.W. 2d 489 (1972) for a case law exposition of this subject and Appendix A for a definition of Public Trust. Any changes in Michigan's water law/management/planning system should take into account the potential impacts of public trust, MEPA, and all the other State statutes that use this concept.

Major Riparian Issues in Michigan

General Quantity Concerns:

Riparian conflicts emerge in several categories. "Conflicts" here mean issues of sufficient importance to produce community-wide discussion, litigation, and/or the introduction of legislative bills. These categories may be listed as follows:

1) riparian v. riparian;
2) riparians v. non-riparians; and
3) riparians v. general public (which includes non-riparians as well as co-riparians).

Quantity (supply, distribution and allocation) issues constitute the bulk of current riparian questions and conflicts in Michigan. Quantity here means not only the mechanical volume of water (e.g., cubic feet) but also the numeric listing of rights in the water and also rights in the related land resources. These rights are frequently described metaphorically as a bundle of sticks--each stick representing a specific real property interest. To illustrate, the right of a riparian to wharf out to navigable water is one of these rights. It is one stick in the bundle of riparian rights. In short, the conflicts emerge as water quantity problems because competing interests make demands on the same subset (quantity) of rights (sticks) in the same water resource. "Quantity" as a mechanical volume problem usually involves the extraction or use of the water for consumptive purposes. On the other hand, "quantity" as a subset of the total bundle of riparian (land/water) interests, as part of a numeric list, normally involves water use which is non-consumptive or usufructuary in character. Construction of a dock to navigable water and swimming are two out of thousands of factual illustrations of water quantity rights which are usufructuary in character. A usufructuary interest (usufruct) is a right expressed in terms of use and/or enjoyment and is the opposite of consumption. To summarize, therefore, the set (bundle) of all riparian rights is the total

quantity of interests in that piece of real estate, that quantum of land/water interface. The set is fixed, and therefore, the quantity of riparian interests is finite. Hence, when there is competition for these interests, or when allocation of water rights is the issue, the problem is a problem of water quantity.

Experience is a key factor in the analysis of Michigan's situation. Hence, this section must be absorbed jointly with the last section above "Current Michigan Water Law." (See Leighty and Hunt, "Increased Agricultural Irrigation: An Evaluation of the Legal Issues," in Bartholic, Impact Evaluation of Increased Water Use by Agriculture in Michigan, Research Report No. 449, Agricultural Experiment Station, Michigan State University, August 1983). The better part of water law is experience and application. Law in the form of a court decision or opinion is part rule and part facts (experience). The reasonable use rule is applied to the "facts" as presented to produce the decision of the court. Rule + Facts = Decision.

Most riparian rights conflicts that focus on issues of quantity will never be ripe for legislative activity unless some body inside or outside of State government elects to propose sweeping changes in the existing common law relationships. The foundation for this statement is the collective impact of the following conclusions:

1) many of these water conflicts and issues involve decisions which are too insignificant individually for legislative activity;

2) a genuine water crisis may not in fact exist; and

3) reasonable men may differ, and therefore, "factual" determinations to establish reasonable use may become endless (see Thompson, "The Role of the Courts." In Federal Environmental Law, Environmental Law Institute, 1974).

Many riparian rights problems are too localiezed to be decided as a matter of Statewide policy. This includes most of the issues that fall under the categories listed above: riparian v. riparian; riparians v. non-riparians; riparians v. general public." These

neighborhood problems should be left to the courts. For these issues, the current judicial solutions (though frequently criticized and seldom satisfactory to every participant) appear to be adequate. Reasonable use implies that unreasonable interference with the property interests of neighbors should be avoided. However, this doctrine also implies that some interference (i.e., reasonable interference) is lawful.

Some examples of riparian conflicts which are too small or insignificant contrasted with some examples which have larger implications may be helpful. No conflict is "small" to the immediate participants or litigants, but the legislature must discriminate in its selection of subject materials out of which policy is created. The first category of conflicts is riparian v. riparian. In this category, overdevelopment of the shoreline and/or excessive use of the surface of lakes and streams are the primary situations which produce conflicts. "Keyhole developments" are a constant source of riparian unrest. In these developments, a relatively small length of riparian water frontage (the keyhole) is connected with a major land development by roads, buildings, and/or canals in an attempt to extend the riparian rights of the frontage land to non-riparian backlots or additional acreage. Representative court cases in this category include: Thompson v. Enz, 379 Mich. 667, 154 N.W. 2d 473 (1967) and 385 Mich. 103, 188 N.W. 2d 579 (1971); Pierce v. Riley, 35 Mich. App. 122, 192 N.W. 2d 366 (1971) and 392 Mich. 765, 219 N.W. 2d 434 (1974); Opal Lakes Ass'n v. Michaywe Ltd. Partnership, 47 Mich. App. 354, 209 N.W. 2d 478 (1973) and 63 Mich. App. 161, 234 N.W. 2d 437 (1975); McCardel v. Smolen, 404 Mich. 89, 273 N.W. 2d 3 (1978). (For futher discussion, see King, Lauer, and Zigler, "Water Law in Michigan," Water Resources and the Law 423, Univ. of Mich. Law School, (1958); and Bartke and Patton, "Water Based Recreational Developments in Michigan--Problems of Developers," 25 Wayne L. Rev. 1005; (1979).

The first category of conflict (riparian v. riparian) may not need new legislation when excessive shoreland development and

surface water uses are the issues. This is because (a) the issues are too small, (b) factual data and situations do not have enough common elements to draft a general policy for the State, and (c) existing legislation e.g., Inland Lakes and Streams Act, Condominium Act, Subdivision Control Act, covers the major problems, even though implementation may be weak. On the other hand, if extractive and/or consumptive uses of water are the focus of the conflict in the riparian v. riparian category, then legislative policy may be required. There is no permit system for water use in Michigan. Hence, the courts engage in water management under the reasonable use rubric (see Hoover v. Crane, supra, for a lake related conflict (riparian pear orchard v. riparian cottages); see Masterbrook v. Alger, 110 Mich. 414, 68 N.W. 213 (1896) for a stream - related conflict (riparian domestic pumpage v. riparian agricultural irrigation)).

Some of the extraction and consumptive use problems fall equally upon the riparian and the non-riparian. Among other burdens are the severance rule and the watershed rule. These rules destroy the original riparian character of land touching a lake or stream. Under the severance rule, voluntary transfer of title to part of the original riparian tract "severs" the riparian rights from the back acreage or lots which no longer have continuously maintained (through every moment in history) physical contact with the water resource. Under the watershed rule, even though no severance has occurred, the consumptive use of riparian waters is permitted (if at all) only in the same watershed. Hence, the owner of a sizeable riparian tract must be careful to divert and consume water only in one watershed, the one with existing co-riparians. (See Leighty and Pollard, "Complex Water Laws Entangle Irrigators," Michigan Farmer (July 1977).

The severance rule is also sometimes referred to as the "source-of-title rule." Even though land is within the same watershed, the parcel may be denied riparian rights under the "source-of-title" rule. This rule and the "unity-of-title" rule are discussed in Davis, "Australian and American Water Allocation

Systems Compared," 9 Boston Col. Ind. and Comm. L. Rev. 647, 680-682, (1968):

> Two major doctrines have emerged defining just which land that abuts a stream is to be considered riparian land. The "source of title" test states that water may be used only on land which has been held as a single tract throughout its chain of title. This means that any nonabutting portions of the original tract which have been severed forever lose their riparian character unless a contrary intention is manifested. Reuniting such severed tracts with the abutting tract will not reestablish their riparian status. The total amount of riparian land under this rule cannot be enlarged by the purchase of contiguous back tracts. [This is the Michigan rule.]
>
> Another rule followed in some states, the "unity of title" rule, provides that any tracts contiguous to the abutting tract are riparian if all of them are held under single ownership regardless of the times when the various tracts were acquired. This means that a riparian proprietor may enlarge the amount of his riparian land by purchasing contiguous back tracts within the watershed. The general rule that water may not be diverted to lands outside the watershed of the originating stream follows from the rule that water diverted for any extraordinary purpose must be returned to the stream above the next lower riparian's land.
>
> The difference in the amount of land available for riparian water use under these two rules can be considerable. A recent study in northwestern Wisconsin indicates that the "unity of title" test would encompass 64 percent more land than the "source of title" test. This substantial increase results from the fact that most farms today have different boundaries than the original farms and that many back tracts have changed hands.
>
> Although riparianism generally restricts use of water to riparian land, there is considerable authority for the proposition that in many instances water may be used by riparians on non-riparian land. These cases, admittedly the minority rule, state that water may be diverted to and used on nonriparian land provided that lower riparians are not damaged. Two states in this group allow use on nonriparian land even though riparians are damaged if the use is reasonable. To the contrary is the majority rule that riparian rights may not be exercised on nonriparian land. Many eastern states have not decided which rule to follow. [Here is a place for clarification by the Michigan Legislature.]

> Place-of-use restrictions have not yet raised any obvious problems in the East, where development of industry has been concentrated at streamside. The problem of locational restrictions probably will be more relevant for the East if irrigation becomes prevalent, or if severe water shortages should occur.

(See also Farnham, "The Permissible Extent of Riparian Land, "6 Land & Water L. Rev. 31, 1972; Levi and Schneeberger, "The Chain and Unity of Title Theories for Delineating Riparian Land: Economic Analysis as an Alternative to Case Precedent," 21 Buffalo L. Rev. 439; 1972; Ellis, Beuscher, Howard and DeBraal, Water-Use Law and Administration in Wisconsin Sect. 12.04c (1)-(5); 1970).

This report is not the first product of a research project on these interrelated subjects. After the 1977 Michigan drought, the Michigan Farm Bureau organized a task force. After three years of deliberation, the task force recommended some sweeping changes, including a new permit system and the abolition of the watershed and severance rules (see Leighty and Hunt, supra). The Michigan Farm Bureau Water Rights Task Force recommended that legislation be enacted to implement a permit system in critical areas of Michigan. The recommendations section of the report follows:

> ...SECTION 13 - RECOMMENDATIONS OF THE MICHIGAN FARM BUREAU WATER RIGHTS TASK FORCE
>
> The Michigan Farm Bureau (MFB) Water Rights Task Force recommends that enabling legislation be enacted to:
>
> 1. Implement a water-use permit program for surface and groundwater on a critical water area basis.
>
> 2. Identify critical water management areas on a watershed basis.
>
> 3. Allow the establishment of minimum in-stream flow standards and/or maximum groundwater withdrawal rates to protect the natural resources of the state from pollution, impairment, and destruction.
>
> 4. Clarify that commercial agricultural irrigation for food and fiber production is in the public interest and is a reasonable use of water. [This

recommendation was later drafted into H.B. 4198 of 1983 as discussed earlier.]

5. Allow interbasin transfer of irrigation water and modify the serverance rule by permitting irrigation water on land which is immediately contiguous and adjacent to lands which touch lakes, streams, or other watercourses so long as such land is held in the ownership of a single individual or other legal person and is held for the purpose of agricultural production of food and fiber.

For another example of earlier attempts to modify Michigan water law, see Barlowe, "Proposed Water Rights Legislation in Michigan," 26 Land Economics, Vol. 26, No. 3, August, 1950, (Journal article No. 1163 of the Michigan Agricultural Experiment Station).

The second category of water quantity conflicts is riparian v. non-riparian. Here the problems are similar to those in the riparian v. riparian category, except that one must be constantly reminded that the non-riparian landowner has no rights in the water whatsoever. See Thompson v. Enz, supra. The non-riparian is generally treated as a trespasser vis a vis water use, except when water use is limited to lawful access (riparian permission) and non-consumptive uses. When the use is consumptive (on non-riparian lands), the use is by definition unlawful. Many non-riparian lands, e.g., those in one ownership, logically could be irrigated for economically productive purposes such as crop production, golf courses, or amusement parks. However, as seen above, under the "severance rule," these uses are unlawful. Hence, over time, the above-described proposals for change have been made.

The third and final category of conflict is riparian v. general public. Of course the "general public" may also include co-riparians. The general public does not have the right to extract and consume riparian waters, but there are statutes which allow municipalities to extract riparian waters for public water supply. Therefore, the water quantity issues in this third category of rights usually are access, excessive use, and the balancing of interests, but include extraction when municipalities are involved.

By implication the statutes that allow municipal extraction for public water supply are a partial modification of the strict application of the severance rule. However, the law (cases and statutes) is somewhat ambivalent on this issue, and therefore, effort to produce new legislation to clarify riparian relationships when one riparian is a municipal body would seem to be justified. Under common law a city (even as a riparian) cannot divert water for the general use of its citizens. See Stock v. City of Hillsdale, 155 Mich. 375, 119 N.W. 435 (1909). However, some cities have lawfully violated this rule when they have engaged in the self-help procedure of taking water without asking permission and have done so for a substantial period of time. This is the "doctrine of prescription." Moreover a lakefront city may extract water from a lake by virtue of its riparian status so long as other riparians are damaged only in a reasonable manner. (See City of Battle Creek v. Goguac Resort Ass'n, 181 Mich. 241, 148 N.W. 441 (1914); see also 57 Mich L. Rev. 349 (1959)). The battle over change or even clarification is not without difficulties (see Oliphant, "A Return to Stare Decisis," 14 A.B.A.J. 71 (1928)). However, stare decisis is not always rigidly followed (see Friedman, "Legal Rules and the Process of Social Change," 19 Stanford L. Rev. 798 (1967)). Holmes again reminds us:

> It is revolting to have no better reason for a rule of law than that so it was laid down in the time of Henry IV. It is still more revolting if the grounds upon which it was laid down have vanished long since, and the rule simply persists from blind imitation of the past.
>
> Holmes, "The Path of the Law," 10 Harv. L. Rev. 457, 469 (1897).

By contrast, no new legislation appears to be necessary in the context of the other issues--access, excessive use, and balancing. The general public by force of common law may use all inland surface waters (natural lakes and streams) whether the waters are public or private. The concept of riparian rights does not apply to artificial surface waters (i.e., any inland water body besides

natural lakes and watercourses) and therefore these waters are not necessarily available for general public use, (see Thompson v. Enz, supra.) In any event, access is normally available to the general public or its members, even to "private" waters, through one of many potential sources or routes, e.g., public property owned by State or local government, or permission as a licensee (guest) of a known riparian, (see Barke & Patton, supra). Additional access or use intensity, if authorized by legislation adopted under the constitutional auspices of the "police power," may raise the issue of an unconstitutional taking of riparian property rights. Here a "balancing of interests" would be required--measuring the rights of privacy and real property ownership for riparians against the demands of the general public to enjoy the usufructs (benefits) of water-based recreation. State authorities should review these interests and recommend priorities. Even more important is the task of establishing standards and criteria behind each standard. If a balance is to be struck between competing interests for water use, then a minimum requirement of constitutional due process is that standards be stated in advance. Criteria for applying these standards give the balancing procedure the appearance of fairness. Finally, at least with respect to the intensity of recreational surface use of lakes and streams, the problems of use competition have an adequate remedy. This remedy is the Marine Safety Act, being M.C.L.A. section 28.1001 et seq. The concept of water use zones represents legislative enlightenment.

Water Shortages and Diversions:

Water shortages for agricultural irrigation and diversion of water from the Great Lakes are current issues. These are matters of genuine concern, but to label either issue as a crisis is an extreme reaction. As noted at the end of this chapter, some changes or modifications may be justified, but a "need" for sweeping changes in Michigan water law cannot be built out of the fabric of either of these two political movements. Except for isolated illustrations, Michigan farmers have enough water for

production purposes. The physical facts may be found in a number of reports. For example, see Leighty and Hunt, supra. In like manner, the economic facts do not support an immediate or large scale diversion of the waters of the Great Lakes to other states. Representatives from the states of the arid South and West attending recent water conferences in Michigan have repeatedly indicated that there is no organized movement to divert the Great Lakes. While the subject of diversion is frequently discussed, no action is contemplated.

Nonetheless, based on certain assumptions, political action is being taken in Michigan. These assumptions include:

1) a permit system is needed to replace current Michigan water law systems (cases and statutes);

2) agricultural interests are not fairly represented by these water law systems; and/or

3) Michigan is under an immediate crisis--the threat of the diversion of huge volumes of water from the Great Lakes.

For example, on August 2, 1985, the Michigan Governor signed into law Senate Bill No. 41 (1985), which became Public Act No. 130 (1985), the Great lakes Protection Act. This act prohibits the diversion of water out of the Great Lakes Basin. The legal merits of such legislation continues to be debated. The issue of "Who owns the Great Lakes?" has received endless reviews.

> Governor James Blanchard recently declared the "protection, enhancement, and wise utilization of the Great Lakes as a major priority of State government." Through Executive Order 1985-1, he ordered State agencies to: (1) resist all new or increased diversions of Great Lakes Basin water resources and to cooperate with the Attorney General's Office in accomplishing that objective; (2) review existing policies and practices for potential impacts on the Great Lakes and revise policies and practices if necessary to fulfill the order; (3) develop a written analysis about the impact of all major proposed Federal and State actions within or affecting Michigan or the Great Lakes; and (4) promote interagency, interstate, and international cooperation on Great Lakes matters.

> In the executive order, the Governor also established a Michigan Office of the Great Lakes within the Department of Natural Resources (DNR). The office will advise the Governor, the DNR Director, and the Directors of other State agencies on appropriate steps needed to coordinate State policy and actions on the Great Lakes, and to implement an ecosystem approach to Michigan's Great Lakes policies. Water Impacts, MSU Institute of Water Research, June 1985.

Also in 1985, Public Act 133 (1985), the Great Lakes Conservation Act, was enacted to promote water planning for the Great Lakes and other State waters. It provided for creation of a temporary 16-member planning commission. This commission was appointed to, among other things, develop a Statewide water management plan. (See Appendix B for the text of Acts 130 and 133 of 1985, as well as Act 128 of 1985; these three were companion acts designed to provide for Michigan Great Lakes and surface water protection and planning.) Since 1985, the actions of the newly created Great Lakes and Water Resources Planning Commission and the DNR's Office of the Great Lakes have taken Michigan along the path of policy development and planning, but much remains to be done.

A moving force behind Public Act 133 was the Sporhase case of the U.S. Supreme Court (458 U.S. 941, 102 S. Ct. 3456, U.S. Supreme Court, 1982). Some who have read Sporhase have concluded that the Supreme Court may allow states to continue some degree of control over their internal water resources, if a state has enacted a comprehensive plan for water use and water management. Planning for these purposes is a worthy objective, and even planning for its own sake may be justified.

However, planning in 1980's need not and probably will not lead to sweeping changes in Michigan water law before the end of this century. Weather flucuations, if very severe, might cause change. The drought of the summer of 1988 might be one such weather flux, but it may take a repeated pattern of such conditions to inspire change. An overview of the Michigan situation, its flucuations, and its response to the key factor of experience may be found in MSU Inst. Water Research Report No. 449 (August 1983),

supra. For example, the report describes the role of experience in defining drought, pointing out that the definition of drought is often subjectively determined, based on competing uses for water.

> Each definition of drought implies injury and/or monetary loss to some special interest. However, with the same amount of precipitation and with other identical waters available, another special interest group may be quite content with the circumstances and perceive no "drought" at all....the amount of water available is a key factor in the struggle to define reasonable use as determined on a case-by-case basis. Extending the analogy, under the riparian doctrine of reasonable use, one might humorously conclude that if there is enough water for all competing users, then no drought exists. The subject, of course, is not humorous, but to draft a definition of drought without recognizing all of the subjective and political factors can only lead to self-deception. There is no universally accepted definition of drought. (Bartholic, supra, pp. 152-153).

Nonetheless, drought frequently is the primary social, economic and political factor which leads organizations to pursue the call and clamor for changes in the basic doctrines of water rights. (See Water Rights Task Force, Report to the Board of Directors of Michigan Farm Bureau, March 1, 1980.)

In like manner, need for or acceptability of diversion of waters from the Great Lakes is relative to the current resource conditions. For example, during 1985-1987 Great Lakes was levels were well above average, resulting in less opposition to diversion than had previously been the case. In 1988 levels approached average, and Illinois' proposal during the drought of that summer to divert Great Lakes water to the Mississippi River was met with opposition. Some scientists think that the recent high lake levels were actually below the long-term average, and further studies are in progress to determine what the long-term (multi-century) mean lake levels are, and what this means in relation to current levels, diversions, and climate trends.

Moreover, some diversions of the waters of the Great Lakes are already in progress; as described in Water Impacts:

A recently released study on Great Lakes diversions and consumptive uses indicates that consumptive uses of water in the Great Lakes may increase from the 1975 rate of 4,900 cubic feet per seconds (cfs) to over 25,000 cfs by the year 2035 (1 cfs is approximately 7.5 gallons per second). The study, conducted by the International Joint Commission (IJC) was a result of a request from the governments of the United States and Canada for IJC to examine and report upon matters which have material effects on water levels and flows of the basin. Both existing diversions and patterns of consumptive use were examined.

"Diversions" were defined in the report as a transfer of water either out of or into the Great Lakes watershed to or from an adjacent watershed, or from the watershed of one of the Great Lakes into that of another. "Consumptive use" was defined as the portion of water withdrawn or withheld from the Great Lakes and assumed to be lost or otherwise not returned to them due to evaporation during use, leakage, incorporation into manufactured products, etc.

Diversions

The two significant diversions from the lakes are the Lake Michigan Diversion at Chicago, which has varied over time, but since 1970 has averaged 3,200 cfs; and the Welland Canal Diversion which averaged approximately 9,200 in 1980. The Lake Michigan Diversion takes water out of the Great Lakes system for purposes of domestic and industrial water supply and navigation through the Chicago Sanitary and Ship Canal and diverts it via the Illinois Waterway to the Mississippi River and into the Gulf of Mexico. The Welland Canal Diversion takes water from Lake Erie at Port Colborne, Ontario, and diverts it across the Niagara Peninsula to Lake Ontario at Port Weller, Ontario, bypassing Lake Erie's natural outlet through the Niagara River. The water is used to operate the deep-draft navigation canal and generate power at DeCew Falls. Water Impacts, MSU Inst. Water Research, July 1983.

Further, when water levels in the Great Lakes are high, legal scholars seem to doubt whether additional diversions may be prevented.

LEGAL RIGHTS IN DIVERTING GREAT LAKES WATER EXAMINED

The legal status of Great Lakes states in their efforts to prevent out-of-basin transfer of Great Lakes water was examined at a recent symposium held at the University of Michigan (U-M) in Ann Arbor.

Although there are no immediate plans for diversion, controversy surrounding proposals calling for water diversion to the Northern Great Plains for coal slurry pipelines or to arid regions of Texas for irrigation raises the question of who has the authority to control water in the Great Lakes. [Emphasis added.]

"The Great Lakes don't belong to anybody in the sense that most property belongs to people," says Joseph Sax, Professor of Law at U-M Law School. Sax, who served as Governor James Blanchard's representative to the Great Lakes Charter task force, says that rather than debating who owns the water, it would be wiser to consider what possible actions affected parties could take and how effective these actions would be.

While the State government of Michigan could control Michigan residents who try to divert water, Sax explained that Michigan by itself could not prevent transfer of water out of the Great Lakes basin by non-residents. Michigan cannot make laws which control other states. Other Great Lakes states are similarly limited. "Whatever power each state has over its own territory, it is subject to the policies of other states which it cannot directly control," he said. [Each state is a separate "sovereign"!]

All the Great Lakes states acting together could not necessarily prevent diversion of Great Lakes water either, according to Sax. The Great Lakes states could join together to write a interstate compact forbidding diversion, but any interstate compact must receive federal approval from the U.S. Congress to become legally recognized. [Arizona v. California, for example.]

In addition, a constitutional problem arises from what is called the "dormant commerce clause" which says that states cannot enact laws which discriminate against residents of other states. "In other words," said Sax, "the Great Lakes states can't say we can use the water but no other state can."

International treaties with Canada are not in themselves sufficient to prevent diversion either, Sax explained. Treaties are federal laws which, like all federal laws, can be changed by Congress. Furthermore, the impact of treaties may be limited. For example, the Boundary Waters Treaty, which created the International Joint Commission (IJC) for protecting water levels in the Great Lakes and the flow of boundary waters, does not cover Lake Michigan or tributaries to the Great Lakes.

From a strictly legal perspective, the United States federal government could conceivably transfer Great Lakes water from the Great Lakes region, Sax says. Federal diversion could be justified under the federal authority to tax and spend for the general welfare.

"If the federal government took so much water that existing uses were adversely affected, that might give rise to some claims for damages by property owners," said Sax, "but if there is surplus water in the Great Lakes which could be taken without affecting existing property rights, then in general there's nothing to stop federal diversion." [Emphasis added.)

Recent decisions by the U.S. Supreme Court may offer some protection against water diversion. Although the criteria for preventing diversion were vague, Sax inferred from the Court's written opinions that a state may be able to prevent out-of-state water transfer if there is a water shortage in the state and if water use within the state is already being regulated. (Emphasis added.) Because the Great Lake region is not generally viewed as a water-short area, Sax admits that the application of these rulings to the issue of Great Lakes water diversion is speculative.

The Great Lakes Charter may also be instrumental in preventing diversion. Signed in February 1985 by the eight Great Lakes states and the Canadian provinces of Quebec and Ontario, the charter is a voluntary agreement committing each of the parties to cooperate in developing better data bases and management strategies concerning the Great Lakes. [This is not a binding mandate.]

"The goals and the commitments of the Charter move the basin exactly in the direction which, if implemented, will put it in the best position to protect, conserve and maintain the waters in the Great Lakes basin," concluded Sax. He admitted that these efforts offered no guarantee, but said that this was the most the states can do to protect their own interests and that these efforts have a reasonable chance of being upheld as law. Water Impacts, MSU Inst. Water Research, June 1985.

For more background on the diversion issue, see Wisconsin v. Illinois, 388 U.S. 426, 87 Sup. Ct. 1774 (1967) (the Chicago Diversion Case); Hinds, "Growth Continues in Stressed South and West," The Other Side, p. 1, No. 42 May/June, 1985; Lindsey, "Arid West Realizing Water is a Salable Crop," N.Y. Times, June 10, 1985; Martin, Canada Weighs Projects to Sell Water to U.S.," N.Y. Times, June 27, 1985.

Regulation of Michigan Groundwater Resources:

Experience is a key factor in the analysis of Michigan water law, whether applied to surface waters or to waters under the earth. Michigan groundwaters are subject to virtually no public regulation. To the authors' knowledge, only one enacted public regulation exists in Michigan concerning the quantity or consumptive use of Michigan groundwaters. However, there are a number of ordinances under consideration in Huron County. This regulation is an ordinance adopted by Colfax Township, Huron County, Michigan, on September 3, 1985.

The Colfax Township Water Well Ordinance regulates only commercial, non-residential uses of groundwater for consumptive purposes. Any well with a capacity for extracting water at the rate of 40 or more gallons per minute requires an application and the granting of a permit from the township building inspector prior to well operation.

Without legislative guidelines, the focus of the law concerning Michigan groundwaters has been on case law. As stated earlier, the better part of this law is experience and application --the application of rules to the facts (experience) to produce a decision. Rule + Facts = Decision. Hence, the role of experience in Michigan has been to produce facts at trials to determine whether a particular use in that specific set of circumstances is reasonable or unreasonable. After the facts are presented, the trial judge or jury must determine the reasonableness of the use in that narrow context. This process is called "balancing of interests." Under the reasonable use rule (since groundwater law in Michigan also employs the riparian nomenclature), interference with a neighbor's well water is lawful, and injuries to the neighbor are lawful--so long as the interference is reasonable (Damnum absque injuria: a loss which does not give rise to leagal action for damages against the person causing it). The interests to be balanced are the rights of each landowner to use the waters of an underlying (hence riparian) aquifer in a reasonable and ordinary manner, with the understanding that all neighbors have the

same rights and expectations of land use and water use. The balancing process also considers the burden of each landowner, the burden being to give adequate recognition to and to honor this understanding. If the balancing-of-interests process indicates that the use is unreasonable, the finder-of-facts (judge and/or jury) determines what remedy to apply against the defendant water user--money damages to pay for losses and/or an injunction to stop the excessive use or to modify its impact and application. This process is called "balancing of equities."

In reality, there is very little case law upon which the next litigant may draw. Therefore, factual extrapolations are essentially unavailable, and stare decisis is of small value. The primary cases include: Jones v. East Lansing-Meridian Water & Sewer Authority, 98 Mich. App. 104, 296 N.W. 2d 202 (1980); Hart v. D'Agostini, 7 Mich. App. 319, 151 N.W. 2d 826 (1967); Bernard v. St. Louis, 220 Mich. 159, 189 N.W. 891 (1922); Schenk v. Ann Arbor, 196 Mich. 75, 163 N.W. 109 (1917) (reasonable use applied).

Groundwater, sometimes referred to as "percolating waters," has been defined as:

> ...Those waters which slowly percolate or infiltrate their way through the sand, gravel, rock or soil, which do not then form a part of any body of water or the flow of any watercourse, surface or subterranean, but which may eventually find their way by force of gravity to some watercourse or other body of water, with whose waters they mingle, and thereby lose their identity as percolating waters.
>
> Kinney, The Law of Irrigation and Water Rights 2150 (2nd ed. 1912).

The term "groundwater," therefore, lacks a single precise legal definition. Its meaning and coverage depend on the language of the traditional or pragmatic views announced by the common law. These waters ooze, seep, or filter through the soil without a defined channel or shape and are not discoverable from surface indications without excavation. Groundwater is found below the water table in the "zone of saturation". It is water contained in the

interstitial spaces of rock formations and unconsolidated sediments. Availability of groundwater is generally related to porosity and permeability of bedrock and unconsolidated materials in any given area. Moreover, groundwater (in general found in the top of the zone of saturation) may or may not coincide with the "water table," depending on the nature of the soil or composition of the aquifer. Water beneath the land surface is not all groundwater, and as Thomas states in Waters: Yearbook of Agriculture:

> The water beneath the land surface is not all groundwater. A man with his feet on the ground might assume that by picking up a handful of moist earth he obtains some ground water, or that in pouring a bucketful of water upon absorbent land he increases the groundwater resources by the amount. Those assumptions are incorrect.
>
> Groundwater is only the part of the subterranean water that occurs where all pores in the containing rock materials are saturated. The "zone of saturation" may extend up to the land surface in some places, notably in seep areas and in some stream channels, lakes, and marshes. At all other places, above the groundwater zone, "a zone of aeration" exists that may range in thickness from a few inches to hundreds of feet. Some water is in the zone of aeration at all times, held there by molecular attraction--in particular, soils may hold significant volumes of water against the downward pull of gravity. Wells cannot extract any of this water; they must be drilled through the zone of aeration and obtain their supplies from groundwater.
>
> The normal field of operations of the groundwater hydrologist is delimited only approximately by such a definition of groundwater. Thus the top of the zone of saturation cannot readily be identified from the land surface. The hydrologist therefore measures the water levels in shallow wells. From the measurements he constructs a map of the "water table," which is thus a phreatic surface--that is, pertaining to a well--where the water is at atmospheric pressure. The water table may coincide approximately with the top of the zone saturation in coarse gravel but is likely to be several inches or even several feet below it in finer-grained materials, because capillary rise results in the saturation of a zone above the water table (the capillary fringe).
>
> Often it is hard to identify or classify subterranean water on the basis of the definition above. There may be saturated flow, at least temporarily, in

> parts of the soil zone. A well driller may encounter a saturated zone and then continue on down into dry materials, obviously in the zone of aeration. Or he may find saturated materials that yield no water to his well, so that there is no water table. And he may drill through materials that yield no water, and then encounter a stratum from which water rises in the well to a level high in the zone of aeration, and the water may even overflow. All these are typical of the wide range in conditions of occurrence of groundwater. They reflect the great variations in porosity and permeability of the solid components of the earth's crust.
>
> Harold Thomas, "Underground Sources of Our Water," Waters: Yearbook of Agriculture, U.S. Department of Agriculture, pp. 64-65; 1955.

Water beneath the surface of the land is presumed by legal rules of procedure not to form a definite channel or watercourse; and percolating waters are normally discovered in a waterbearing stratum of permeable rock, sand, or gravel known as an aquifer. (See Clark (ed.), Waters and Water Rights, Vol. 1, 322-334 (1967)). Therefore, for legal purposes, underground streams are presumed not to exist, but the presumption is rebuttable. Hence the party seeking the benefits from asserting the existence of an underground watercourse has the burden of proof. In short, such a party must rebut (the burden) the presumption with evidence of the shape of the banks and of the direction of flow.

"Percolating water" is technically a more precise term for groundwaters. However, the courts employ these terms interchangeably. Therefore, the same definition and factual confusions that persist regarding other classes of waters also apply to this category. Once a specific water resource has been classified by a court, the set of relationships which attach to that classification (for legal purposes only) automatically apply without further thought, analysis, or reasoning. For example, what is a spring? Is it the headwaters of a stream? Is it groundwater? Diffuse water? Different courts have observed the physical characteristics of essentially the same water resource and have classified or labelled these resources differently. In different cases, separate courts, at separate times, have independently

"found" (declared by fiat) a specific resource of identifiable water to be each of these classifications. Physically the water is any of these types, but only one classification counts, the one provided by the court. For the finder-of-facts, the situation is truly relative to the eye of the beholder. The confusion is obvious.

To make classifications more complex, the use of both surface and groundwaters is usufructuary in character. An Ohio court, describing the interest of a landowner in the waters of a stream said:

> It is ancient learning that the right to flowing water is incident to the title to land, and that there is no right of property in such water in the sense that it is the subject of exclusive appropriation and dominion. The property interest is usufructuary...
>
> * * * *
>
> The impounding of water by means of a dam on a stream is not a reduction of the water to possession in such a sense as to change its legal character and make it property. The principles have been so well established that it requires no borrowed light to determine that water in a nonnavigable stream, or water from such a stream impounded in a lake by a dam, or water impounded from springs or surface drainage, is an incident to the land which gives to such owner of the land certain rights and privileges in the use of the water. If it flows over one's own land, it is identified with the realty in such a way as to be a corporeal hereditament, and if the right is to use it as it flows over the land of another it is an incorporeal hereditament. Under either circumstance the right of property is usufructuary only...
>
> * * * *
>
> ...[A] grant of the right to impound water is a grant of but one of several usufructuary rights that the owners of the underlying lands possess; and under no circumstances can it be a grant of property in the corpus of the water as a chattel.
>
> Akron Canal & Hydraulic Co. v. Fontaine, 72 Ohio App. 93, 50 N.E. 2d 897, 901 (1943).

Moreover, the division of surface and groundwater into separate categories in law contradicts hydrologic principles. Nonetheless, the old classifications remain embedded in the law and are the basis for constitutionally protected property rights.

> Man has coped with the complexity of water by trying to compartmentalize it. The partition committed by hydrologists--into groundwater, soil water, surface water, for instance--is as nothing compared with that which has been promulgated by the legal profession, which has on occasion borrowed from the criminal code to term some waters "fugitive" and others, a "common enemy." The legal classification of water includes "percolating waters," "defined underground streams," "underflow of surface streams," "watercourses," and "diffuse surface waters"; all these waters are actually interrelated and interdependent, yet in many jurisdictions unrelated water rights rest upon this classification.
>
> Thomas & Leopold, "Ground Water in North America," Science, Vol. 143, 1003 (1964) American Association for the Advancement of Science (AAAS).

Again, for legal purposes, groundwater has traditionally been divided into two types: underground streams and percolating groundwater. Clark, Waters and Water Rights, Vol. 1, Sect. 52.2 (1967). Underground streams are commonly said to be governed by the riparian doctrine, but the courts have not yet determined whether this rule will be followed in Michigan. In addition, it must be remembered that it is very difficult to prove the existence of an underground stream. For further information on the subject see Corpus Juris Secundum, "Waters," Sections 86, 89; Beuscher, "Appropriation Water Law Elements in Riparian Doctrine States," 10 Buffalo L. Rev. 448 (1961).

Michigan applies the Reasonable Use Rule to percolating groundwater. (See M.C.L.A. 600.2941; M.S.A. 27A.2941.) This statute makes an unreasonable or unnecessary use of groundwater from a well "subject to all the actions for abatement and damages in favor of the person or persons injured, as provided by law for other nuisances or tortious acts." The statute, however, leaves the definition (and application) of reasonable use to the court

system. Defined one case at a time on the particular circumstances of each individual suit, with only slight assistance from the doctrine of stare decisis (see cases listed previously in this section)--reasonable use leaves much to be desired as a standard. There is no predictability. Common sense is helpful, and monitoring wells are prophylactic. Yet, there is no basis for economic development or investment when the standard is so vague.

The choice for the consumptive user may be not to invest at all or simply to become a water thief--one who has no concern for his neighbor's needs, who has no appreciation for the doctrine of correlative rights or reciprocal relationships, or who simply knows the rules of the game and finds that selective, disguised, aggressive, and/or well-managed self-help makes profits. The water-thief, who obtains water from a riparian source (lake, stream, or aquifer) and applies it to non-riparian lands, may also have a consumptive program which is well-documented, with the intention of securing prescriptive rights. Prescriptive rights (usufructs), as distinct from adverse possession (gaining ownership interests through occupation), may become vested (beyond legal challenge) simply by long and continuous adverse water use, accompanied by laches (sleeping on one's rights) and/or by acquiescence by other potential water claimants. Moreover, the costs of litigation, in time as well as money, are a major deterrent to bringing every water thief to a forum for accountability. Hence:

> The informal legal system(s) also become important. In the informal system, balancing the "utility" of the defendant (water thief) against the "harm" to the lawful riparian plaintiff becomes significant. Moreover, if no one objects or complains, then there may be adequate supplies of water "legally" available for...consumption and applications. The "legality" here is founded upon the premise that litigation is an inferior method for resolving social and resource-management problems. The "deviance," unlawful appropriation and conversion of the water of another, is clear. It has the potential sound and fury of a thunderstorm, but if no one brings suit, the practical consequences of the misappropriation may produce little more noise than the sound of one hand clapping. Bartholic, supra.

Simply stated, the injured riparian cannot afford to pursue the claim.

Groundwaters have been used in Michigan since the pioneer period (1820-1860) with essentially no public regulation or control. Even today this water resource is largely allocated by the "law of neighbors," the basic law of nuisance litigation. Nuisance is the tort; reasonable use is the touchstone or measuring rule. From the words of Justice Oliver Wendell Holmes, one again finds the superiority of a page of history in its juxtaposition with logic. Over a century ago Holmes, the leading legal scholar of the time, stated: "The life of the law has not been logic; it has been experience." (See Holmes, The Common Law, 1881; Auerbach, Garrison, Hurst and Mermin, The Legal Process, 1961; Hurst, The Growth of American Law, 1950; Cardozo, The Nature of Judicial Process, 1921).

The Michigan experience has been that the scope of the controversy expands and contracts as a function of drought cycles. The level of water use by Michigan consumers has, in general, increased significantly in the last five decades. However, mere increased use, as a single and isolated analytical factor, has seldom been a large problem. Rather, competition is the problem. Therefore, the essence of a study of the reasonable use doctrine is to explore the implications of increased water use in the context of competition. Without competition there are no legal or social issues; without competition, only economic and technological issues remain.

If logic implies inevitable behavioral consequences or intellectual conclusions, or if logic suggests objectivity and/or scientific measurement, then logic is only partially relevant to the scope of the reasonable use controversy between the holders of current water rights--whatever the nature of the entitlement. This is not to suggest that the law applicable to reasonable use is totally irrational. However, a syllogism would not be relevant; engineering creativity and measurement have little value in the context of competition. Moreover, objectivity is only a myth. The

reasonable use concept itself is part rule (standard of conduct) and part fact (including some measurements but also customs and economic expectations). If the process for determining when water use becomes unreasonable were neutral, the rule applied to the facts would always produce the same scientific, legal consequence. In short, the process is political rather than neutral.

Some behavioral patterns are always unreasonable--e.g., total destruction of a neighbor's access to the riparian aquifer; malicious waste of water with no economic profit motivation; contamination of groundwater when a causal relationship is clear; application of riparian groundwaters to non-riparian lands (which do not overlie the common riparian source). These listed extremes at one end of the behavioral spectrum do not produce ambiguity or uncertainty as frequently as the gray situations between. No use at all is the other extreme and is always reasonable. Between the extremes the determination of reasonable use is a factoral process, reviewing a number of factors and placing subjective weights or values on each factor. In theory, however, the process is not blind subjectivism. Rather the theory of the measuring standard is that weight (heavy or light) is given to each factor in the context of an objective (but not neutral) community test. The measuring instrument is a hypothetical reasonable and ordinary person who always decides controversies by balancing the factors in favor of community-wide customs and expectations, who always is even-handed in the application of this community test to the evidence presented. The criteria are the water customs and expectations of that geographical area, and the question for the actual (not hypothetical) fact-finder to answer is: "What would the 'reasonable and ordinary' water user in that particular community expect as acceptable behavior from a defendant neighbor's conduct?" The answer to this question is the standard for reasonable use, in that community!

One should note the circularity of determining reasonable use by verbalizing a person who is always reasonable. The essence of this circularity is the essence of why the measuring instrument is

hypothetical. No such person exists, and therefore, informal norms (which seldom are articulated) take control of the process for determining reasonable use. Here, legislation may be justified, even if the effort only re-codifies the foregoing analysis. Moreover, reasonable men may differ, and therefore factual determinations to establish reasonable use may become endless. Reasonable men would not necessarily agree that "the whole state is a recharge zone." Similarly, some who read The Water Resources Act (1929 P.A. 245), would not conclude that amendments are needed to make authority more specific.

In any event, factors need to be listed either by the legislature or by the courts to evaluate any determination of reasonable use. Physical characteristics, conflicting uses, community economics, and local politics are just a few of the many diverse factors which must be considered when attempting to determine whether a use in the specific context is reasonable. Physical characteristics might include, without limitation, some of the data required on an application filed under the Colfax Township Ordinance described above--e.g., size of aquifer, recharge history, location of wells, drawdown expectations, transmissivity and storage co-efficients, recovery period, recharge boundaries, type of soil materials, porosity, permeability. In like manner, some factors may be listed from the recommendations of the National Water Commission made in 1973:

> [The Commission proposed permit legislation in riparian jurisdictions as follows:]
>
> 1. The permit system should apply to withdrawals existing at the time the legislation is enacted as well as to future withdrawals.
>
> 2. The permit system should apply to withdrawals of groundwater as well as surface water, whether or not the supplies are interrelated.
>
> 3. Any person or organization should be eligible to apply for and receive a permit for use of water at any location. Riparian restrictions on who may use water at what locations should be abolished.

4. The following information should be contained in each permit:

(a) the source of supply,
(b) the point of diversion or well location,
(c) the place of use
(d) the nature of use,
(e) the volume of the withdrawal and of consumptive use, on an annual or seasonal basis, as may be appropriate,
(f) the rate of withdrawal,
(g) the times of use, and
(h) if practicably ascertainable, the amount of return flow and the point at which it reenters the hydrologic system.

National Water Commission, Water Policies for the Future 281 (1973).

Finally, with all the foregoing factors and analysis available for instant recall, one is prepared to deal with the existing case law of Michigan. First, the concept of reciprocal relationships or correlative rights is important. Intrinsic to the usufructuary character of riparian waters is the concept of correlative rights. All riparians may use and enjoy the entire corpus of the common water resource--lake, stream, or percolating. However, this interest, though indeed a protected property interest, is a series of relationships, not an ownership right which implies exclusivity. No riparian is allowed to exclude other riparians from equal use and enjoyment. Hence, for every right there is a corresponding duty. This is the concept of correlative rights. The concept compels reciprocity because for every right there is a duty and for every duty there is a right. A primary example is interference with an aquifer. Each landowner has the right to use all the water in the aquifer in a reasonable manner: at reasonable times, in reasonable amounts, for reasonable purposes, etc. In parallel, each landowner also has the duty to limit resulting interference with neighboring uses to reasonable levels of damage. Moreover, in times of actual water shortage the correlative rights concept requires each water user to limit the extent of the common

drawdown by reducing the rate, time and/or total cubic volume of extraction. This stewardship relationship requires each riparian user to function as his neighbor's keeper or benefactor.

A second consideration in a review of Michigan case law is the proposition that all general water uses, as categories of use, are reasonable (see Schenk v. Ann Arbor, supra). There are no water priorities or preferences in Michigan except for the archaic distinction created by the common law between "natural" uses (those for domestic needs such as drinking and washing clothes) and "artificial" uses (all others, beyond basic domestic needs). (See Thompson v. Enz, 379 Mich. 667, 686-87, 154 N.W. 2d 473, 484 (1967); Hoover v. Crane, supra). Hence, mining, agriculture, manufacturing, irrigation, and other forms of consumption are all artificial uses but are all treated equally by the common law system.

In Schenk v. Ann Arbor (supra) suit was filed by a landowner to restrain the City of Ann Arbor from taking water from property adjoining the plaintiff's lands. The city pumped water for the use of its citizens. The plaintiff claimed that the pumping by the city caused the supply of water for wells on adjacent property to be seriously diminished. The area was agricultural in character, and the water was piped a substantial distance back to the city. Moreover, Ann Arbor planned to use the water on non-riparian lands, not the property from which the water was extracted. The plaintiff claimed, "The city proposed to use little or any of the water for the benefit of the land from which it would be taken, but on the contrary to pipe the water away from the land, to sell some of it, to use some for municipal purposes, and not to return any of it to the land from which taken." Schenk implies that if the water is used on the immediate riparian premises, the water may even be wasted.

Some waste is permitted in eastern riparian states because water is, in a relative sense, more abundant. Waste is strictly prohibited in western states under the appropriation doctrine of water use. For general references on this topic, see Beusher, 10

Buffalo L. Rev. 448 (1961), supra; Holmes, Simons, & Ellis, State Water-Rights Laws & Related Bibliography 1959 to 1967, Misc. Pub. No. 1249, ERS, USDA, 1972; Hutchins & Wells, Water Rights Laws in the Nineteen Western States (completed by Ellis & DeBraal) (3 Vols.), Misc. Pub. No. 1206, ERS, USDA, 1971; Hundley, Water and the West, 1975; Roberts, The Law and the Preservation of Agricultural Land, 1982; Beatly, Petersen, & Swindale (eds.) Planning the Uses and Management of Land, Agronomy Series No. 21, Am. Soc. of Agronomy, et al., 1979. Waste in this context does not include uses attached to a subjective malicious intent to damage neighbors, but it does allow for excesses. This excess or waste is reasonable because the use is on riparian land. There apparently is magic in the word riparian.

Moreover, it is sometimes "reasonable" to cut off a neighbor from the aquifer by drying up his well. In Hart v. D'Agostini, 7 Mich. App. 319, 151 N.W.2d 826 (1967), the defendant laid a sewer line through a public easement near plaintiff's home. In accordance with usual engineering practices, the defendant drilled wells along the construction trench in order to keep it dry. His pumping caused wells to dry up temporarily (about two weeks) and the plaintiff brought suit for damages. These damages could have been "intentional" or "unintentional" (legal terms of art from the Restatement of Torts), and liability at common law for interference with a neighbor's groundwater depends on this distinction. Thus, if the interference was unintentional, liability turns upon the theory of negligence. Did the defendant's conduct exhibit "due care"? On the other hand, if the interference was intentional, then liability occurs only if the conduct (water use) was unreasonable under the normal riparian rubric of reasonable use. An act is deemed intentional if the defendant knew or should have known that the harm to plaintiff might occur. Here the court held that the defendant's actions (a) had been intentional but (b) were reasonable under the circumstances because the utility of the defendant's activity (water use) outweighed the harm to the plaintiff's use. Therefore, the defendant's intentional injury of

the plaintiff's water supply was held to be lawful (reasonable), and the plaintiff in Hart v. D'Agostini was denied damages. See also M.C.L.A. section 600.2941.

By contrast, in Schenk v. Ann Arbor, supra, the plaintiff was allowed damages for such injury as he had actually sustained, but he was not granted an injunction. The Schenk court rules:

> "It does not follow that the city may not reasonably make use, for the purpose intended, of a large volume of water from this land. I have stated the rule by which the rights of the city and other landowners must be determined...There is no apparent reason for saying that, because defendant is a municipal corporation seeking water for the inhabitants of the city, it may therefore do what a private owner of the land may not do. The city is a private owner of this land, and the furnishing of water to its inhabitants is its private business. It is imperative that the people of the city have water; it is not imperative that they secure it at the expense of those owning lands adjoining lands owned by the city."
>
> "...[The common law rule of reasonable use] does prevent the withdrawal of ground waters for distribution or sale for uses not connected with any beneficial ownership or enjoyment of the land from which they are taken, if the result is to interfere with the reasonable use by a neighbor of the groundwater on his land, or if his land is thereby rendered less valuable for legitimate uses."
>
> "I have said that, in view of the circumstances, the right of defendant to make use of the water is a qualified right. It is qualified by this rule of reasonable user, a rule quite in harmony with the provisions of Act No. 190, Pub. Acts 1889, and Act No. 107, Pub. Acts 1905."

Although the Hart and Schenk cases have been criticized for not providing a sufficient heritage of specific criteria for future dispute applications, and for hiding behind the reasonable use rubric, these quotations seem to suggest that the existing cases dealing with groundwaters are not limited merely because all the defendants to date have been public institutions. Public and private landowners are treated on a equal footing. Nonetheless, some legislation to clarify rights, duties, relationships, priorities, and acceptable levels of user behavior is needed for

Michigan groundwaters. Simply to amend M.C.L.A. section 600.2941 to define state criteria for "tortious acts" would be helpful. The only current advice available to the potential groundwater user or extractor is either to locate monitoring wells and/or simply wait to be sued. In like manner, a state permit system could provide predictability. The Jones case originally gave the hope that criteria for defining reasonable use could be established by the courts. The case was settled out of court, and no criteria were forthcoming. See Jones v. East Lansing-Meridian Sewer & Water Authority, supra. Moreover, administrative agencies, through public regulation, cannot be everywhere.

For a fuller discussion of the character of Michigan Water Law, the statutes and case law that pertain to it, see Bronstein, Leighty, Vincent, and Grobbel, Water Management in Michigan: Legal/Institutional Issues in Michigan Water Planning and Inventory of Current Statutory Law, 1985.

SUMMARY

What then is the situation in Michigan and what options does the State have for using a legal system to manage its water resources? While water is generally plentiful (despite the drought of the summer of 1988), there are problems arising in certain parts of the State that center around water rights and managing water resources. In these regions there is competition (or at least perceived or potential competition) for water resources.

What are the options available to Michigan legislators and administrators? There are pathways that the State could follow to approach the problems in a Statewide, comprehensive fashion. One path might involve a property rights-institutional approach. Present statutes and regulations would be modified, with some additions to the codes. The changes would stop short of a transition to a hybrid law water management approach. Ownership of water rights would remain with individual riparians.

Modifications of interpretation/definition of certain terms in the law could be made, including statutory definition of reasonable use. Local water districts might be created under enabling legislation to carry out limited management functions, such as irrigation management. State agencies could be empowered and funded to expand their information gathering and monitoring capabilities, so that they could act under existing State statutory provisions in time of crisis to protect vital supplies. A piece of legislation that is currently in draft form in the Michigan Department of Natural Resources would help this agency at least account for major water usages throughout the State (see Appendix C).

Another path would be adoption of a hybrid water law system with some degree of centralized administrative management of State water resources. It would entail an explicit declaration by the legislature, probably under the public trust doctrine, that all State waters are the property of the State and any usufructs could only be obtained through specific permission of State authorities.

The final path would be the "do nothing" option. The current riparian doctrine/reasonable use common law system and extant statutory provisions do provide for management of State water resources. The only debate is as to how well this management is being done. All of the major pluses and minuses of the current Michigan system have been enunciated. If the experiences of the hybrid water law states examined in this study are indicative of what it takes to inspire legislators to change riparian systems, then it takes a crisis such as a major water shortage to bring about such change. Even with the past summer's drought, we simply do not have that type of Statewide water crisis.

Before moving on to recommendations, it is important to note that there are a set legal management options that have received only slight attention in this report: local options. County commissioners, city, town and (especially) township officials might adopt and enforce ordinances and regulations to control water management. Local officials have been hesitant to use these powers due to lack of local technical advice and monitoring capability,

but provisions for such help might be made with appropriate State agencies, if such agencies were both empowered to do so and received adequate funding. (See Sargent, Water Resources & Rights: Emerging Issues, CES Bulletin No. EC-594, Purdue University, 1984 for a parallel discussion of all of these issues as applied to Michigan's neighbor state, Indiana.)

CHAPTER V

RECOMMENDATIONS

THIS SUMMARY OF APPROACHES COVERS MANY OF MICHIGAN'S OPTIONS. FROM WHAT HAS BEEN SEEN IN STATES USING HYBRID WATER LAW SYSTEMS, THE CONDITIONS IN MICHIGAN CURRENTLY DO NOT WARRANT ADOPTION OF SUCH A SYSTEM. Michigan does not need sweeping new changes in the law. Existing cases and statutes on most issues can be employed together to provide the necessary rules for water use in Michigan. Some changes appear to be important enough to justify the effort to produce change. These changes are stated in various parts of this report and fall within the description of a property rights-institutional approach. For example, legislative clarification of vague common law terms such as "reasonable use," the "watershed rule," "unity-of-title," "severance," etc. would be a step toward enlightenment and predictability. This may be piecemeal, but piecemeal is not bad per se! If piecemeal includes the lack of purpose or fosters significant levels of confusion from the lack of clear answers or from the absence of essential coordinations of approvals or other functions, that is bad. On the other hand, when the desire to wipe the ledger clean--to start with a whole new system of water laws--is the sole motivation of the critic who cries "piecemeal" then the criticism is superficial and unwarranted. Raw desire to try something new for the sake of newness does not justify change. The urge to promote change because ambiguity places pressure on tolerances levels is not enough. Hostility toward slowing-moving administrative agencies with whom the critic may have professional differences of opinion is not a justification.

Water problems and issues must be dealt with from the perspective that not all questions or problems have absolute answers. Ambiguity is a part of life; ambiguity has an integrity of its own. It cannot simply be repealed. Any set of solutions that may be presented will have inherent flaws; flaws that might easily be seen if those proposing the changes will look at the costs and benefits derived by other states when they made sweeping changes. The water resource dynamics other states must deal with in their borders must always be looked at in determining the appropriateness of their legal/regulatory/social water management program.

All of the states studied present interesting examples for Michigan. Iowa has the longest history of operation of a permit system, the most static situation, and some of the closest conditions climatalogically and hydrologically to Michigan. Their experience holds valuable insights for us, but it must be remembered that they do not have to deal with the lake interface. Maryland is still in a state of evolution with regard to permitting and it would be most valuable to see how they deal with the newly introduced system over the next few years. That leaves us with Florida as a model of a fully evolved and implemented system. Florida has a truly impressive and efficient system--for Florida. In Michigan, it would most likely be a disaster. An analogy that may fit here is that of a water law system to an automobile. One does not want to pay for an engine replacement when a tune-up is what the car needs. Michigan's water law may very well need a tune up; it doesn't need replacement.

What do we do with regard to the system? It may be best for Michigan to take an incremental approach with regard to any alterations of the law. Take things one step at a time, and only move on to the next step if clear justification/need is demonstrated. Professor Sargent of Purdue laid out a usable progression for Indiana that Michigan might do well to examine:

Where are We Headed?

If we are correct in predicting that new and increasing water demands will put pressure on water supplies for certain uses and particular areas of the state, then we will continue to move away from custom and tradition determining water rights.

The western states faced up to water problems early in their history as water became an important limiting factor in their growth. The agricultural midwest is just now "feeling the pinch." The pattern of adjustment has often been as follows:

1. Perception of a problem and increasing appeals to the courts and the legislature.

2. Agreements on reform and conservation among competing users.

3. Protection and increased security of existing uses.

4. Authorization of inventory, reporting, and measuring programs.

5. Implementation of an allocation/permit system that affects large users and limits new uses.

6. Proposal and partial implementation of comprehensive management and planning programs.

7. Pursual of water supply augmentation if shortages are serious.

(Sargent, supra.)

These may be reasonable points to examine, but anything beyond point four (4) would not be justified, if the experience of the states examined are indicative of the conditions necessary for adoption of a full scale hybrid system. To quote a standard colloquialism, "If it ain't broke, don't fix it." Michigan water law probably does need changes, but not on the scale necessary to implement a hybrid water law management scheme.

APPENDIX A

KEY DEFINITIONS

The following definitions are provided for terms which appear with some frequency in this report and which have long-term implications for the Michigan water law system. The definitions have been drafted for this report and are not intended to have universal application.

1. Public Resource Management (water resources). Public resource management is a form of authorized, institutional behavior developed, administered, executed, and implemented by either the institution per se or by the larger water law system when the system or institution possesses more than two of the following characteristics:

   (a) ownership or some power or element of control over the resource or resource situation -- control over water use, enjoyment, and access; power to define, allocate and/or distribute water rights, duties, privileges, and liabilities;

   (b) the power to regulate both water quantity and water quality, as well as the environment of related land resources;

   (c) a decision-making structure;

   (d) authority to exercise discretion, to create standards and criteria, and to establish conditions;

   (e) a policy, program, and set of rules founded on data collection;

   (f) authority to create rules and to modify rules;

   (g) implementation of the resource policies and programs on the basis of reason;

   (h) adherence to constitutional standards for substantive and procedural due process;

(i) authority to impose penalties for violations of the resource management program.

2. Public Resource Planning (water resources). Public resource planning is a process through which goals, policies and purposes for resource management are identified and through which programs, solutions and/or alternatives for the achievement of those objectives, policies and purposes are designed. Planning is a generic term, not a word of art, unless its dimensions are expressly delimited by statute. The attributes or components of this process include:

(a) establishing goals and objectives;

(b) identifying issues and problems;

(c) collecting an up-to-date inventory of all facts relevant to an identified problem;

(d) coordinating activities with the planning efforts of other resource management programs (e.g., public health, land use, fish and wildlife);

(e) re-evaluating and revising goals, new data, alternatives, programs, and solutions on a continuous basis in light of changing circumstances.

Resource planning becomes comprehensive when all available goals and alternatives have been explored through this process. For example, as applied to water resources, the issues might include (but need not be limited to): use, access, development, preservation, conservation, degradation, quantity vs. quality, environmental enhancement, allocation of rights, distribution of liabilities, standards, criteria for each standard, exemptions, variances, conditions imposed, etc.

3. Navigable Water. For water to be public (as compared with private waters shared only among co-riparians), the water must be navigable. Hundreds of pages of cases and law review articles have debated what is (or should be) navigable water in Michigan. There is a federal test for navigability, but the federal test is different from many of the state definitions (tests). Michigan courts first employed the "log-float" test, changed briefly to the "recreational capacity" test, and have now retreated to the more comfortable position of the log-float definition (test). See Bott v. Commission of Natural Resources, 415 Mich. 45, 327 N.W. 2d 838 (1982); State

v. Summer School of Painting at Saugatuck, Inc., 126 Mich. App. 81, 337 N.W. 2d 322 (1983). Stated simply, if the water (in its natural and ordinary condition) has the capacity to float logs or to provide transportation for other commercial products, then the water is, by definition, "navigable." If the water is navigable-in-fact under this test or definition, then the water is declared to be navigable-in-law, or to be public water. Navigable waters are, therefore, available to the general public for recreational purposes (e.g., boating, fishing, aesthetics, body contact).

4. The Public Trust Doctrine: The federal constitution allocates certain parts of sovereignty to the federal government through an enumeration of expressed powers (e.g., the commerce clause discussed below). The balance of this authority is allocated to the individual states. In combination with the development of the common law (court-made law) in each state, this set of sovereign powers represents the link each state has with the past and creates, therefore, the authority for each state to express its commitment to the concepts which surround the public trust doctrine.

The legal institution known as a trust is composed of three (3) essential elements: a subject, a trustee, and a beneficiary. The trustee serves in a fiduciary capacity, managing the subject of the trust solely for the purpose of promoting the best interests of the designated beneficiaries. The role of fiduciary may be open-ended (total discretion), but is usually controlled by a written list of guidelines, a set of precedents (stare decisis), or simply by tradition. The public trust doctrine is guided by common law tradition, cases, and legal treaties going back to the Roman Empire.

The significance of this doctrine and the general concept of a public trust approach to state-level management of natural resources (water resources in particular) cannot be overemphasized. The basic idea of state government serving as the representative steward or trustee to protect state water resources is neither new nor difficult to understand. The application and scope of this authority, however, remains hidden in historical confusion and obscurity. Since the scope of this sovereign power (somewhere hidden in the police power) is limited only by the creativity and imagination of persons who occupy public office, the application of the public trust doctrine presents endless possibilities for the planning and management of Michigan water resources.

The ancient Romans did not have to address the taking issue when they codified their legal relationships. The Code of Justinian listed running water as part of the res communes concept, and today this concept (in Michigan water law) is described as the public trust doctrine. Res communes is translated as the negative community, i.e., a group of resources belonging collectively to the entire community for the use and benefit of all but not belonging exclusively to any one individual. Res communes in Roman codes included running water, air, fish and wild game, and the heat and light of the sun. All of these were owned (dominion or legal title) by the government in its sovereign or representative capacity. By contrast, the people were the true owners, the beneficiaries of equitable title, the ones with the usufructuary rights of use and enjoyment even though they held no legal title to these resources. This is the nature of public trust.

For further readings on the subject of Public Trust, see: Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention," 68 Mich. L. Rev., 474, 1970; "The Public Trust Doctrine: Procedural and Substantive Limitations on the Governmental Reallocation of Natural Resources in Michigan," Det. CL Rev. 161, 1975; Olson, "Toward a Public Lands Ethic: A Crossroads in Publicly Owned Natural Resources Law," 56 J. Urban L. 849-887, 1979. See also Olson, Michigan Environmental Law, 1981; Lake, Environmental Regulation-the Political Effects of Implementation, 1982; and Macdonald & Conway, Environmental Litigation, 1972.

APPENDIX B

MICHIGAN PUBLIC ACTS 128, 130, AND 133 OF 1985

These three pieces of companion legislation were designed to provide for Michigan Great Lakes and surface water protection and planing.

GREAT LAKES PROTECTION ACT

P.A. 1985, No. 128, Imd. Eff. Aug 2

AN ACT to establish the office of the Great Lakes within the department of natural resources and to designate the office as the lead agency within state government for the development of policies, programs, and procedures to protect, enhance, and manage the Great Lakes; to prescribe the powers and duties of state departments; and to require the governor to submit certain reports, analyses, and inventories.

The People of the State of Michigan enact:

323.31 Short title

Sec. 1. This act shall be known and may be cited as the "Great Lakes protection act". P.A.1985, No. 128, ss 1, Imd. Eff. Aug. 2.

323.32 Legislative findings

Sec. 2. The legislature finds that:

(a) The Great Lakes are a valuable resource providing an important source of food, fresh water, recreation, beauty, and enjoyment.

(b) The ecosystems of the Great Lakes which provide sustenance and recreation to the people of this state and other states and nations have been severely affected and are continually threatened by the introduction of foreign species into the lakes and by pollution of the Great Lakes waters.

(c) Careful management of the Great Lakes will permit the rehabilitation and protection of the lakes, their waters, and their ecosystems, while continuing and expanding their use for industry, food production, transportation, and recreation.

(d) This state, because it is surrounded by the Great Lakes and because the Great Lakes contribute in innumerable ways to the state's economy, recreation, and way of life, must act as a steward for the protection, enhancement, and wise utilization of the Great Lakes.

P.A.1985, No. 128, ss 2, Imd. Eff. Aug. 2.

323.33 Office of the Great Lakes; establishment; duties

Sec. 3. The office of the Great Lakes is established within the department of natural resources and is designated as the lead agency within state government for the development of policies, programs, and procedures to protect, enhance, and manage the Great Lakes. The office of the Great Lakes shall do all of the following:

(a) Advise the governor, the director of the department of natural resources, and the directors of other appropriate state departments on appropriate steps needed to coordinate state policy and state actions on the Great Lakes and to implement an ecosystem approach to this state's Great Lakes policies.

(b) Provide representation at the national level for this state's Great Lakes interests.

(c) Represent this state before Great Lakes policy development bodies such as the international joint commission.

(d) Ensure adequate research and staff work to maintain this state's regional leadership in resolving Great Lakes problems.

(e) Promote the wise use of the ports of this state and Great Lakes water transportation.

(f) Promote the Great Lakes tourism industry.

(g) Advocate the interests of this state in actions, policies, and legislation affecting the Great Lakes proposed in other Great Lakes states, Canadian provinces, Great Lakes policy development bodies, and the federal government.

P.A.1985, No. 128, ss 3, Imd. Eff. Aug. 2.

323.34 Governor's duties; annual report, analysis of recommended expenditures, program inventory, etc.

Sec. 4. The governor, with the assistance of the office of the Great Lakes, shall prepare and submit to the legislature the following:

(a) An annual report, submitted by December 31 of each year on the state of the Great Lakes.

(b) A comprehensive analysis, in the governor's annual budget message, of all the funds from state and federal sources that the governor recommends be expended for the protection, enhancement, and management of the Great Lakes.

(c) A comprehensive inventory, submitted within 1 year after the effective date of this act, of all state, federal, interstate, and international agencies, programs, and projects associated with the protection, enhancement, and management of the Great Lakes.

(d) A report, submitted within 18 months after the effective date of this act, on the status of the agreement between the United States and Canada known as the Great Lakes water quality agreement of 1978, and recommending steps to be taken to execute the state's obligations in that agreement and to promote the state's role and objectives in the renegotiation of that agreement.

(3) A report, submitted within 2 years after the effective date of this act, listing the priority research needs with respect to the Great Lakes.

P.A.1985, No. 128, ss 4, Imd. Eff. Aug. 2.

GREAT LAKES CONSERVATION ACT

Sections 323.51 to 323.57 of this act shall not apply after September 30, 1987 under the provisions of ss 323.58.

P.A.1985, No. 133, Imd. Eff. Sept. 30

AN ACT to create a temporary Great Lakes and water resources planning commission; to prescribe the powers and duties of the commission; and to prescribe the powers and duties of certain state agencies.

The People of the State of Michigan enact:

323.51. Short title

Sec. 1 This act shall be known and may be cited as the "Great Lakes conservation act."

P.A.1985, No. 133, ss 1, Imd. Eff. Sept. 30.

323.52 Legislative findings

Sec. 2 The legislature finds that the Great Lakes and the other waters of this state are natural resources critical to the future of this state. Consistent with the mandate of section 52 of article IV of the state constitution of 1963 that the legislature provide for the protection of the air, water, and other natural resources of this state from pollution, impairment, or destruction, the legislature enacts this and other laws reflecting the high priority given to the conservation and protection of the state's water resources and the state's commitment to the establishment of a comprehensive system of statewide, regional, and local water resource policies.

P.A.1985, No. 133, ss 2, Imd. Eff. Sept. 30.

323.53 Definitions

(a) "Commission" means the Great Lakes and water resources planning commission.

(b) "Consumptive use" means that portion of water withdrawn or withheld from its source that is assumed to be lost or otherwise not returned to the source of the water due to evaporation during use, leakage, incorporation into products during industrial processes, or assimilated by animals, humans, and plants.

(c) "Redistribution" means a use of water that alters the natural occurrence, distribution, movement, and properties of the water within a drainage basin or between drainage basins.

(d) "Water diversion" means a transfer of water either into the Great Lakes drainage basin from an adjacent drainage basin or out of the Great Lakes drainage basin into an adjacent drainage basin, or a transfer of water from the drainage basin of 1 of the Great Lakes into the drainage basin of another.

(e) "Waters of this state" means groundwaters, lakes, rivers, streams, and all other watercourses and waters within the confines of this state, and the Great Lakes bordering on this state.

P.A.1985, No. 133, ss 3, Imd. Eff. Sept. 30.

323.54 Great Lakes and water resources planning commission; creation; term

Sec. 4. Pursuant to section 4 of article V of the state constitution of 1963, a temporary independent commission to be known as the Great Lakes and water resources planning commission, is created for 2 years.

P.A.1985, No. 133, ss 4, Imd. Eff. Sept. 30.

323.55 Commission membership; chairperson; per diem compensation

Sec. 5 (1) The commission shall consist of 16 members to serve or to be appointed as provided in this section.

(2) Six members of the commission serve ex-officio, with vote. The director of each of the following state departments, or an employee of the department designated by the director, shall serve on the commission:

(a) Department of agriculture.

(b) Department of attorney general.

(c) Department of commerce.

(d) Department of natural resources.

(e) Department of public health.

(f) state transportation department.

(3) Nine members of the commission shall be public members. The members appointed pursuant to this subsection shall provide representation for the interests of industry and business, navigation and shipping, agriculture, conservation, tourism and recreation, local government, and the general public. The governor shall appoint 5 public members, the speaker of the house of representatives shall appoint 2 public members, and the senate majority leader shall appoint the remaining 2 public members.

(4) As soon as possible after the effective date of the 1986 amendatory act that adds this subsection the governor shall appoint 1 additional public member to serve with the public members appointed under subsection (3).

(5) The governor shall designate a chairperson of the commission from among the public members of the commission.

(6) The public members shall receive per diem compensation as established annually by the legislature.

P.A. 1985, No. 133, ss. 5, Imd. Eff. Sept. 30 Amended by P.A.1986, No. 122, ss 1, Imd. Eff. June 2.

323.56 Comprehensive state water plan; development; participation of regional and local government; submission to legislature and governor

Sec. 6 (1) The commission shall develop a comprehensive state water plan that does all of the following:

(a) Compiles the existing state and federal laws, rules, and regulations, and common law principles associated with the use and protection of the waters of this state.

(b) Compiles all available information on the existing consumptive uses, redistributions, and water diversions of the waters of this state and existing conservation practices.

(c) Compiles all available information on the hydrologic cycle in this state.

(d) Analyzes and projects the future water requirements of agriculture, industry, recreation, navigation, domestic consumption, and ecosystems in this state.

(e) Identifies the potential problems associated with meeting the projected demand for water described in subdivision (d).

(f) Analyzes the environmental and economic impacts of consumptive uses, redistributions, and water diversions on the waters of this state.

(g) Determines whether an additional economic benefit would accrue to the state from new or expanded use of the waters of this state, particularly through recreation and tourism.

(h) Analyzes the state's progress in meeting the objectives of the federal water pollution control act, Public Law 92-500, 86 Stat. 816, the agreement between the United States and Canada known as the Great Lakes water quality agreement of 1978, and Act No. 245 of the Public Acts of 1929, being sections 323.1 to 323.13 of the Michigan Compiled Laws.

(i) Recommends legislation or policy needed to promote comprehensive and optimal use, management, and protection of the state's water resources. The recommendations shall suggest means of establishing a partnership between the state government, regional governmental organizations, and local units of government in the governance of the state's water resources and of balancing the interests of the public and of private citizens.

(2) The commission shall assure that regional governmental organizations and local units of government have an opportunity to participate in the formulation of the plan required by this section.

(3) The commission shall hold public hearings to provide opportunities for public comment on the development of the plan and for public review of the plan.

(4) The commission shall submit the plan required by this section to the legislature and the governor on or before the date that is 2 years after the effective date of this act.

P.A.1985, No. 133, ss 6, Imd. Eff. Sept. 30.

323.57 Appointment of staff; administrative services; legal assistance; assistance from state departments

Sec. 7 (1) The commission may appoint a staff to assist the commission in formulating the comprehensive state water plan that the commission is required to develop by section 6.[3] The commission may appoint a staff director.

(2) The department of management and budget shall provide to the commission administrative services relating to personnel, payroll, and other housekeeping activities.

(3) The department of attorney general shall provide to the commission legal assistance relating to the duties of the commission.

(4) The commission may request any state department to provide staff assistance for the preparation of the comprehensive state water plan required by this act.

P.A. 1985, No. 133, ss 7, Imd. Eff. Sept. 30.

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[3] Section 323.56

323.58 Application of act

Sec. 8 Sections 1 to 7[4] shall not apply after the date that is 2 years after the effective date of this act.

P.A.1985, No. 133, ss 8, Imd. Eff. Sept. 30

P.A.1985, No. 133 was ordered to take immediate effect, and was approved and filed on September 30, 1985.

GREAT LAKES PRESERVATION ACT

P.A. 1985, No. 130, Eff. Sept. 30

AN ACT to limit the diversion of the waters of the Great Lakes out of the basin of the Great Lakes.

323.71 Short title

Sec. 1. This act shall be known and may be cited as the "Great Lakes preservation act".

P.A. 1985, No. 130, ss 1, Eff. Sept. 30.

For contingent effect provisions of this act, see ss 323.75.

323.72 Legislative findings

Sec. 2 The legislature finds that a diversion of water out of the basin of the Great Lakes may impair or destroy the Great Lakes. The legislature further finds that a limitation on such diversions is authorized by and is consistent with the mandate of section 52 of article IV of the state constitution of 1963 that the legislature provide for the protection of the air, water, and other natural resources of the state from pollution, impairment, and destruction.

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[4] Sections 323.51 to 323.57.

P.A.1985, No. 130, ss 2, Eff. Sept. 30.

323.73 Prohibition against diversion of Great Lakes' water from drainage basin

Sec. 3. Subject to section 4,[5] the waters of the Great Lakes within the boundaries of this state shall not be diverted out of the drainage basin of the Great Lakes.

P.A. 1985, No. 130, ss 3, Eff. Sept. 30.

323.74 Prohibition against diversion of Great Lakes' water from drainage basin; application of ss 323.73

Sec. 4 (1) Section 3[6] shall not apply to a diversion of the waters of the Great Lakes out of the drainage basin of the Great Lakes existing on the effective date of this act.

(2) Section 3 shall not apply after the date that is 1 year after the date on which the Great Lakes and water planning commission submits a comprehensive water plan to the governor and the legislature.

P.A. 1985, No. 130, ss. 4, Eff. Sept. 30.

323.75 Contingent effect

Sec. 5. This act shall not take effect unless Senate Bill No. 46 of the 83rd Legislature is enacted into law.

P.A. 1985, No. 130, ss. 5, Eff. Sept. 30.

Senate Bill No. 46 was enacted as P.A.1985, No. 133, and was approved and filed on September 30, 1985

P.A.1985, No. 130, was ordered to take immediate effect, and was approved and filed on August 2, 1985.

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[5] Section 323.74.

[6] Section 323.73.

APPENDIX C

PROPOSED STATE WATER PERMIT LAW

DRAFT IV 7/14/88

WATER USE REPORTING IN MICHIGAN

Legislative Proposal

Legislation is needed in Michigan to require reporting of water use by irrigators, industries, and thermoelectric power plants to meet the requirements of the Great Lakes Charter and the Michigan Water Use Information Program. Water use reporting is recommended by the state water management plan. It is required to assure Michigan's right to participate in the Charter consultation process when a Great Lakes diversion is proposed.

Key Provisions

The legislation would involve a two-step process for water users: 1) initial registration, and 2) reporting of water use annually. During the first 12 months after the law was passed, all industrial and processing establishments with the capacity to withdraw over 100,000 gallons/day of water in any 30-day period would be required to register with the Department of Natural Resources. Registration would also be required for irrigators that irrigate over 40 acres or have the capacity to withdraw over 100,000 gallons/day in any 30-day period.

After initial registration, water users would report their water use annually on forms provided by the Department of Natural Resources. Information reported would include actual or estimated water withdrawals, water sources, uses of water, and the location of any industrial or processing discharges. The measurement of

water withdrawals by metering would be encouraged. However, meters would not be required. Many industries presently meter their water use and could readily provide accurate information. Irrigation reporting would be based primarily on estimates.

Funding Support

It is essential that the water use data reported be made accessible to water users, planners, and managers. At the present time, there are no state funds for the Water Use Information Program. Therefore, the legislation proposes that water users pay a minimal annual reporting fee. The fee would be $35 for industrial and processing establishments and $15 for irrigators. This would generate about $60,000 annually, which would support one position in the Department of Natural Resources to ensure that water use data were compiled and reported to those who would benefit from the information. No fee would be assessed for the initial registration of water users.

A bill to provide information to wisely protect, manage, and develop the water resources of the state; to require registration and reporting by major water users; to provide for the collection, disposition, and use of certain fees; and to provide penalties.

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Sec. 1. This act shall be known and may be cited as the "water use reporting act".

Sec. 2. As used in this act:

(a) "Department" means the department of natural resources.

(b) "Industrial or processing establishment" means an operating plant or facility, including any thermoelectric power generation plant, carrying on a common manufacturing activity, trade, or business on a common site, including similar plants under common ownership or control located on contiguous properties. Plants or facilities under common ownership or control located on

separate sites shall be considered separate and individual establishments.

(c) "Irrigation facility" means all wells, pumps, intakes, gates, tanks, pipes, or other equipment under common ownership or control and located either on a common site or on separate sites, which are used to withdraw, convey, or distribute water for the purposes of irrigating crops, golf courses, parks, recreational areas, or other grounds.

(d) "Person" means an individual, sole proprietorship, partnership, corporation, association, irrigation district, municipality, this state, and instrumentality or agency of this state, the federal government, or an instrumentality or agency of the federal government, or other legal entity.

(e) "Public water supply system" means any water system that provides water for human consumption or other purposes to persons other than the supplier of water.

(f) "Registrant" means any industrial or processing establishment or irrigation facility registered under Sect 3 of this act.

(g) "Reporting fee" means a fee assessed annually to persons owning 1) industrial or processing establishments with the capacity to withdraw over 100,000 gallons of water per day from all sources in any 30-day period; or 2) irrigation facilities that presently irrigate an area equal to or greater than 40 acres, or have the capacity to withdraw over 100,000 gallons of water per day from all sources in any 30-day period.

(h) "Water withdrawal" means the removal or taking of water from the waters in the state. For the purposes of this act, the passage of water through, or storage of water for, a hydroelectric generation facility, plant, or structure is not considered to be a withdrawal.

Sec. 3. (1) Any person who owns 1) an industrial or processing establishment that has the capacity to withdraw over 100,000 gallons of water per day from all sources in any 30-day

period; or 2) an irrigation facility that presently irrigates an area equal to or greater than 40 acres, or that has the capacity to withdraw over 100,000 gallons of water per day from all sources in any 30-day period; shall register with the department on forms provided by the department. The information registered shall include the following:

(a) Name and address of the registrant.

(b) Source or sources of water supply.

(c) Total water withdrawal or irrigated acreage capability of the registrant.

(d) Use or uses to be made of the water.

(e) Location of industrial or processing discharge or discharges.

(f) Such other information specified by rule.

(2) Any person who owns an industrial or processing establishment or an irrigation facility under division (1) of this section which is constructed before December 31, 1988 shall be registered within 12 months after the effective date of this act. All registration forms received shall be considered effective on the final day of this period. Those industrial or processing establishments or irrigation facilities constructed after December 31, 1988 shall be registered within six months after they are completed.

(3) Any person who owns an industrial or processing establishment or an irrigation facility registered under division (1) of this section shall file a report annually with the department on forms provided by the department. The report shall be due three months after the end of the calendar year. The information required shall include the following:

(a) Amount and/or rate of water withdrawn on an annual and monthly basis.

(b) Source or sources of water supply.

(c) Use or uses of water.

(d) Location of the industrial or processing discharge or discharges.

(e) Such other information specified by rule.

(4) Any person who owns an industrial or processing establishment or an irrigation facility as defined in Section 2 and registered under division (1) of this section shall be required to pay a reporting fee at the time the report required under division (3) of this section is submitted to the department. The fee shall be $35.00 for each industrial or processing establishment and $15.00 for each irrigation facility.

(5) The fees collected under division (4) of this section shall be transmitted to the state treasurer, who shall credit the money received to the _____ fund. Money credited to the _____ fund shall be paid out by the state treasurer, pursuant to the accounting laws of the state, for administration and other activities in the water use Information Program of the department.

Sec. 4. Public water supply systems presently required to report water withdrawals under Public Act 399 of 1976 are exempt from the requirements of this act.

Sec. 5. Any person who violates this act or a rule promulgated under this act is guilty of a misdemeanor, punishable by a fine of not more than $500.00.

Sec. 6. The department may promulgate rules for the administration of this act. The rules shall be promulgated pursuant to Act No. 306 of the Public Acts of 1969, as amended.

APPENDIX D

RESEARCH FIELD CONTACTS

MARYLAND

Dr. William Bell; Center for Environmental Estuarine Sciences, Cambridge

Mr. James Durkay; U.S. Army Corps of Engineers, Washington DC

Ms. Lynn Hoot; Dept. of Agriculture, Annapolis

Mr. Robert Miller; Dept. of Natural Resources, Annapolis

Prof. Garrett Power, University of Maryland Law School, Baltimore

Dr. Richard Wisemiller; Dept. of Agronomy, University of Maryland, College Park

IOWA

Mr. Dennis Alt; Iowa Dept. of Natural Resources, Des Moines

Dr. Allen Austin; Iowa State University, Des Moines

Mr. Richard Bullard; Iowa Dept. of Natural Resources, Des Moines

Mr. Randy Clark; Iowa Dept. of Natural Resources, Des Moines

Mr. Dan Cooper; Iowa Dept. of Agriculture, Des Moines

Mr. Robert Drustrupt; Iowa Dept. of Natural Resources, Des Moines

Mr. Louis Gieseke; Iowa Dept. of Natural Resources, Des Moines

Prof. Neil Harl; Iowa State University, Ames

Prof. William Hines; University of Iowa, Des Moines

Mr. Jim O'Brien; Iowa Legislative Staff, Des Moines

Mr. Victor Okereke; Iowa Dept. of Natural Resources, Des Moines

Ms. Elizabeth Osenbaugh; Iowa Atty. Gen. Office, Des Moines

Rep. David Osterberg; Iowa House Natural Resource Committee, Des Moines

Mr. Mike Smith, Iowa Atty. Gen. Office, Des Moines

Mr. Ted Yanecheck; Iowa Farm Bureau, Des Moines

FLORIDA

Mr. Chuck Aller, Dept. of Environmental Regulation, Tallahassee

Ms. Paulette Beard, South Florida Water Management District, West Palm Beach

Ms. Patricia Bidol, South Florida Water Management District, West Palm Beach

Mr. L.M. (Buddy) Blain, Blain & Cone, Tampa

Mr. David Bracciano, West Coast Regional Water Supply Authority, Clearwater

Mr. Robert Bryant, Southwest Florida Water Management District, Brooksville

Mr. Mark Burgess, Soil Conservation Service, Tavares

Prof. Roy Carriker, U. of Florida, Gainesville

Mr. James Cason, Northwest Florida Water Management District, Havana

Prof. Donna Christie, Florida State University, Tallahassee

Ms. Dee Cotton, South Florida Water Management District, West Palm Beach

Mr. Terry Courneya, Soil Conservation Service, Tavares

Mr. W. Arthur Darling, Dairy Farmers, Inc., Orlando

Mr. Henry Dean, St. John's River Water Management District, Palatka

Ms. Roxane Dow, Dept. of Environmental Regulation, Tallahassee

Mr. David Fisk, Suwannee River Water Management District, Live Oak

Prof. Richard Hamann, U. of Florida, Gainesville

Ms. Gail Hankinson, St. John's River Water Management District, Palatka

Mr. Tom Herbert, T.A. Herbert and Associates, Tallahassee

Mr. Christopher Howell, Northwest Florida Water Management District, Havana

Mr. John Jackson, Cooperative Extension Service, Tavares

Mr. Mike Joyner, Florida Farm Bureau, Gainesville

Mr. Vance Kidder, St. John's Water Management District, Palatka

Mr. Kenneth Kuhl, Dept. of Agriculture and Consumer Services, Tallahassee

Mr. Gary Kuhl, Southwest Florida Water Management District, Brooksville

Mr. Charles Lee, Florida Audubon Society, Winter Park

Mr. Terry Lewis, Messer, Rhodes and Vickers, Tallahassee

Prof. Lawrence Libby, U. of Florida, Gainesville

Mr. Tom Luter, Southwest Florida Water Management District, Brooksville

Mr. Jack Maloy, A. Duda & Sons, Inc., Oviedo

Mr. Doug Mann, Florida Farm Bureau, Gainesville

Mr. William McCartney, Northwest Florida Water Management District, Havana

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Mr. Mike Powers, Soil Conservation Service, Tavares

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Mr. Stephen Walker, South Florida Water Management District, West Palm Beach

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Ms. Naomi Whitney, St. John's River Water Management District, Palatka

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