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## Preface

As a nation, the United States is in the early stages of a water crisis. Although the problem is more acute in some areas of the country than others, the population explosion, accompanied by great technological advances in industry and agriculture, has resulted in progressively increasing demands on an essentially limited resource. In addition to the requirements of industry, the seasonal needs of agriculture to provide water for crops and livestock at times of lowest streamflow and least natural replenishment are putting increased demands on eastern as well as western water supplies.

At the same time, as the demand for water for consumptive uses has been burgeoning, the interest of ecologists and recreational users in maintaining streamflows and surface and ground water levels has assumed greater importance in the minds of the public and the state legislatures. Concern over the adequacy of existing laws in the face of present and emerging water resources problems is leading many states to consider new methods of dealing with these problems.

In the East, the common law riparian system of water law has come under criticism for its restriction on the use of stream water to riparian owners and its requirement that the water be used only on riparian land. Many critics feel that better use frequently may be made at other places by riparian or nonriparian owners. A major criticism of the system concerns the element of uncertainty associated with the reasonable use of water for nondomestic purposes. Because the reasonableness of each use is determined by the needs of other riparians, unforeseen conditions may arise when others commence or enlarge uses despite long nonuse of their rights. A further uncertainty exists in those states where a riparian neither making nor intending to make use of water can enjoin an existing use as unreasonable with regard to his right.

Another criticism of the system relates to the lack of administrative controls. In many jurisdictions the extent of a riparian's right of reasonable use can be determined only by litigation. The critics maintain that this uncertainty results in needless loss when water use patterns of established industries are upset by later competing uses.

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Perhaps of greater concern is the water unused or devoted to less valuable uses when industries fearful of such losses refuse to locate in the area. Recognizing their lack of expertise and the inefficiency of a case-by-case approach, the courts have been reluctant to become involved. Also, the numerous courts are structurally not as capable of uniformity in the application of the law as a single, centralized agency.

A final disadvantage of the common law riparian system is the failure to deal adequately with the problems of ground water and to recognize its hydrologic interrelationship with surface water, both diffused and contained in lakes and watercourses.

The prior appropriation system which developed in the western United States also has its deficiencies. This system had its inception in the needs of the early gold miners for large quantities of water to carry on their operations. The water was at first "appropriated," sometimes at gunpoint; later the developing law in the West granted judicial recognition to these appropriations. Under this doctrine, a riparian or other owner can appropriate the right to use as much water as he can successfully divert and beneficially employ, as long as his appropriation is prior to that of others; his right, on a "first come, first served" basis, may extend, in an extreme case, to the complete appropriation of the available supply.

One of the principal advantages claimed for the appropriation system is that users of water are more certain of their rights under it than under the riparian system, since the appropriation doctrine includes establishment of priorities for use of water in time of shortage. As a result, it is argued, the appropriation system removes the insecurity involved in the riparian system and tends to protect and encourage investments in the development and use of water resources. But evidence indicates that this illusion of certainty is not borne out in the operation of the system in the West and that often the individual water user is no more certain of his water rights than a similar user under the riparian system.

It is further claimed that the appropriative system leads to the most beneficial use of water by placing primary emphasis on encouraging the sound development, wise use, conservation, and protection of water. But the western experience indicates that, in many cases, the effect of prior appropriation may be to waste water that otherwise could be put to beneficial use. To satisfy a senior appropriator at the mouth of the stream, junior upstream appropriators may have to let several times the amount of the appropriation pass by them to allow for channel losses. Moreover, once an appropriator has begun using a certain amount of water, he will frequently continue to draw that amount even though it may be considerably more than he really needs, since failure to do so may result in loss of his appropriative right to the excess.

A final criticism of the appropriation system is its tendency to freeze the initial pattern of water allocation. In a number of western states, the appropriation of entire stream supplies for irrigation has prevented industrial development that could produce far more wealth for the state per unit of water than does the highly consumptive use of water for irrigation.

Realizing that, because of these defects, neither the riparian nor the appropriation system in pure form is likely to work, the draftsmen of the Model Water Code have attempted to provide a model for the development of a comprehensive regulatory program in eastern states. This program is designed with three purposes: to take into account the hydrologic interrelationship of all types of water resources in the state; to provide greater certainty than is possible under a courtadministered reasonable use approach; yet to retain sufficient flexibility to make possible realistic long-range plans for the conservation and wise use of water resources and the elimination of waste. This last goal is to be accomplished through administrative regulation utilizing the best parts of the riparian and appropriation systems.

Since the Model Water Code is constructed in large part on a riparian base, its primary influence may come in eastern jurisdictions. But some of its provisions, particularly those dealing with planning, water quality control, and general administration, may be of equal interest in western states.

The work consists of six chapters of text and commentary. Chapter 1 contains the formulation of a state water plan and the establishment of a two-tiered state and local administrative structure. It provides for a state board to exercise a coordinating and planning function while actual administration at the local level is delegated to water management districts established along hydrologic lines.

The concern of chapter 2 is consumptive uses of water. These uses are regulated by means of a permit system modeled roughly after that of Iowa. The permit system is intended for use primarily in the East as a statutory modification of the common law riparian system. Permit rights are limited to a term of years, subject to renewal, and the permit system is used as a means of implementing the provisions of the state water use plan. Provision is made for competing applications and special powers of regulation in times of water shortage.

Chapter 3 is devoted largely to the construction and maintenance of wells, the mechanics of ground water use permits having been included in chapter 2. In addition, it provides for regulation of the well drilling industry.

Chapter 4 is parallel to chapter 3, providing for the regulation of dams, impoundments, and other structures to control surface water. Inventory provisions are designed to give a water management district knowledge of its surface water resources as a basis for control over works affecting it so as to be able to provide for efficient use and conservation as well as to protect public health and welfare.

Chapter 5 is directed toward the problem of water quality. It provides for a water quality plan, including the promulgation of water quality standards and construction and discharge permits. It is the intent of the draftsmen, insofar as practicable, to prevent pollution from occurring in the first instance, rather than merely to require remedial action. The authors relied heavily on the 1965 Suggested State Act, drafted by the Department of Health, Education, and Welfare and later adopted by the Department of the Interior, and the 1971 Tennessee Water Quality Act, drafted under the supervision of Professor Maloney.

Chapter 6, an optional chapter, provides for control over weather modification activities. The Model Water Code can stand as a unit without this chapter, but it is one of the most original parts of the code. It is almost solely the work of Roger D. Schwenke, now a practicing attorney in Tampa, Florida.

A few words about the format of the book: In the first part of the book, the text of the code is set out in its entirety, without commentary, to make it possible for the reader to consider the code as a whole, or to refer back quickly to sections cited in other parts of the book, and the second part consists of a detailed commentary on each section of the code. For the convenience of the reader, the individual sections of the code are presented again, set in bold-face type, with each section or subsection followed by commentary. In addition, introductory commentary of a general nature begins each chapter.

The approach of the authors of this code has been along pragmatic, problem-solving lines. They have attempted to draft the "strongest" provisions possible. Comprehensive coverage has been sought. They hope that this proposal will be of assistance to all jurisdictions facing the necessity of improved regulation to maximize the beneficial use of their water resources in the best interests of all of their citizens.

A substantial portion of chapters 1–4 of the Model Water Code were enacted into law by the Florida Legislature as the Water Resources Act of 1972, Fla. Laws 72–299.

#### PREFACE

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Maloney and Ausness, Water Quality Control: A Modern Approach to State Regulation, 35 ALBANY L. REV. 28 (1970).

Maloney and Ausness, A Modern Proposal for State Regulation of Consumptive Uses of Water, 22 HASTINGS L. J. 523 (1971).

Maloney and Ausness, Long-Range Planning under a Comprehensive State Water Code, 73 W. VA. L. REV. 209 (1971).

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> FRANK E. MALONEY RICHARD C. AUSNESS J. SCOTT MORRIS

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#### **§1.01** Model Water Code

This act shall be known and cited as the Model Water Code.

#### **§1.02** Declaration of Policy

(1) Recognizing that the waters of the state are the property of the state and are held in public trust for the benefit of its citizens, it is declared that the people of the state as beneficiaries of this trust have a right to have the waters protected for their use.

(2) There is urgent need for an accelerated program of comprehensive water resources planning to meet the rising water requirements of a growing population and expanding economy. The state water plan, with such future amendments, supplements, and additions as may be necessary, is accepted as the guide for developing and implementing this policy.

(3) The Model Water Code shall be liberally interpreted to obtain maximum beneficial use of the waters of the state for such purposes as domestic uses, irrigation, power development, mining, and industrial uses. However, adequate provision shall be made for the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the state for navigation, public recreation, municipal uses, and public water supply; such objectives are declared to be in the public interest.

(4) The Model Water Code shall be liberally interpreted to protect and improve the quality of waters of the state and to provide that no substance be discharged into such waters without first receiving the necessary treatment or other corrective action. The people of the state have a substantial interest in the prevention, abatement, and control of both new and existing water pollution, and the maintenance of high standards of water quality. The people of the state recognize the need for the state water resources board to cooperate with agencies of other states and the federal government in carrying out these objectives.

(5) The public interest, health, safety, and welfare require that

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scientific research and experimentation in the field of artificial weather modification and scientific efforts to develop, increase, and regulate natural precipitation be encouraged. A program for licensing, regulation, and control of interference by artificial means with the composition, behavior, or dynamics of the atmosphere must be established in order to develop, conserve, and protect the natural resources of the state and to safeguard life and property.

#### **§1.03** Definitions

When appearing in this code or in any rule or regulation adopted pursuant thereto, the following words shall mean:

(1) State Board—The state water resources board.

(2) Water management district—Any flood control or water management district operating under the authority of this code.

(3) Governing board—The governing board of a water management district.

(4) Reasonable-beneficial use—The use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose and in a manner which is both reasonable and consistent with the public interest.

(5) Person—Any and all persons, natural or artificial, including any individual, firm, association, organization, partnership, business trust, corporation, company, the United States of America, the state, and all political subdivisions, districts, municipalities, and public agencies thereof.

(6) Domestic use—Any use of water for individual personal needs or for household purposes such as drinking, bathing, heating, cooking, or sanitation.

(7) Nonregulated use—Any use of water which is exempted from regulation by the provisions of this code.

(8) Water or waters of the state—Any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state.

(9) Ground water—Water beneath the surface of the ground, whether or not flowing through known and definite channels.

(10) Surface water—Both contained surface water—that is, water upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other watercourses, lakes, reservoirs, and coastal waters subject to state jurisdiction—and diffused

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surface water—that is, water occurring upon the surface of the ground other than in contained waterbodies. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

(11) Stream—Any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. The fact that some part of the bed or channel shall have been dredged or improved does not prevent the watercourse from being a stream.

(12) Other watercourse—Any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted.

(13) Coastal waters—Waters of the (Atlantic Ocean) (Pacific Ocean) (Gulf of Mexico) within the jurisdiction of the state.

(14) Impoundment—Any lake, reservoir, pond, or other containment of surface water occupying a bed or depression in the earth's surface and having a discernible shoreline.

#### **\$1.04** Scope

(1) All waters of the state are subject to regulation under the provisions of this code unless specifically exempted.

(2) No state or local government agency, except the governing board of a water management district, may enforce any statute, regulation, or order affecting waters of the state controlled under the provisions of this code, whether enacted or promulgated before or after the effective date of this code, without the written permission of the state board.

(3) No state or local government agency or other person having the power of eminent domain or condemnation under the laws of this state, except the governing board of a water management district, may exercise that power with respect to condemning property if the condemnation will materially affect water resources in the state, without the written permission of the state board.

#### **§1.05** State Board

(1) There is hereby created the State Water Resources Board which shall be composed of five (5) full-time members appointed by the governor subject to confirmation by the senate at the next regular session of the legislature. Refusal or failure of the senate to confirm an appointment shall create a vacancy in the office to which the appointment was made.

(2) Each member shall be a resident of the state. One member

shall be an attorney who has practiced law in the state for at least five (5) years prior to his appointment; one member shall be a hydrologist or a professional engineer with experience in water management or conservation; one member shall be an experienced farmer or rancher; and the other two members shall be chosen from the public at large based upon their general education, business qualifications, and experience with problems relating to water resources.

(3) Each member shall serve for a term of five (5) years and shall be eligible for reappointment for only one additional term except that

(a) the terms of the members first appointed shall expire, as designated by the governor, one at the end of one year, one at the end of two years, one at the end of three years, one at the end of four years, and one at the end of five years, and

(b) any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of that term.

(4) The member of the initial state board who is appointed for a five-year term shall serve as chairman for the first year. Thereafter, members of the state board shall elect annually one of their number as chairman. In the event of the absence or illness of the chairman, the senior member of the state board shall act as temporary chairman.

(5) Each member of the state board shall be compensated at a rate not more than \_\_\_\_\_\_ per annum. In addition, each member shall be reimbursed for traveling and other necessary expenses incurred in the performance of his duties as a member.

(6) Regular meetings of the state board shall be held monthly. Special meetings may be called by the chairman or at the request of a majority of the board. Three (3) members in attendance shall constitute a quorum.

A complete record of the proceedings of the board shall be made and such record shall be open to public inspection.

(7) The state board shall employ an executive director as chief administrative officer and set his compensation. The executive director shall be a person experienced in the field of water management or water conservation and shall serve at the pleasure of the state board.

(8) The state board may employ a legal staff for the purposes of (a) providing legal counsel on matters relating to the exercise of its powers and duties; (b) representing it in all proceedings of an administrative or judicial nature; and (c) otherwise assisting in the administration of the provisions of this code.

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(9) For the purpose of administration, the board shall organize itself in the manner it deems necessary to segregate and conduct the work of the board properly. The work of the board shall be divided into at least three (3) divisions, known as the Division of Water Use, the Division of Water Quality, and the Division of Weather Modification. The state board shall appoint a director of each division who shall supervise the work thereof and act as technical adviser to the board on functions under his jurisdiction.

(10) The state board shall be responsible for the administration of this code at the state level, and is charged with exercising the powers and fulfilling the duties delegated to it by section 1.06 and other sections of this code.

#### **§1.06** General Powers and Duties of the State Board

In addition to its other powers and duties the state board is authorized to:

(1) Carry out topographic surveys, research, and investigations into all aspects of water use and water quality.

(2) Contract and cooperate with the various agencies of the federal government and with water management districts, state and local administrative and governmental agencies, or private persons.

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

(4) Cooperate with other state agencies, water management districts, county or other local govermental organizations, or agencies created for the purpose of utilizing and conserving the waters of this state, and to assist such organizations and agencies in coordinating the use of their facilities and participate in an exchange of ideas, knowledge, and data with such organizations and agencies. For this purpose the state board shall maintain an advisory staff of experts.

(5) Prepare, publish, and issue such printed pamphlets and bulletins as the state board deems necessary for the dissemination of information to the public concerning its activities.

(6) Appoint and remove agents and employees including specialists and consultants.

(7) Acquire, lease, and dispose of such real and personal property as may be necessary in the performance of its functions, including the acquisition of real property for the purpose of conserving and protecting water and water-related resources as provided in section 1.23.

(8) Identify by continuing study those areas of the state where salt water intrusion is a threat to fresh water resources and report its findings to the water management districts, boards of county commissioners, and the public.

(9) Conduct, either independently or in cooperation with any person or any county, state, federal, or any other agency, a program of study, research, experimentation, and evaluation in the field of weather modification.

The state board shall also license and regulate weather modification activities pursuant to the provisions of this act.

(10) Exercise general supervisory authority over all water management districts created under this code. The state board may review and rescind any regulation of a water management district to insure compliance with the provisions and purposes of this code.

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

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

(b) The state board shall, subject to confirmation by the legislature, act on the behalf of the state in the negotiation and consummation of any agreement or compact with another state or states concerning waters of the state.

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

(12)(a) Hold annually a conference on water resources developmental programs. Each agency, commission, district, municipality, or political subdivision of the state responsible for a specific water resource development program requiring federal assistance shall at such conference present its programs and projects and the needs thereof.

(b) Upon termination of the water conference, the state board shall select those projects for presentation in the state program of public works which best represent the public welfare and interest of the people of the state as required for the proper development, use, conservation, and protection of the waters of the state, and land resources affected thereby.

Thereafter, the state board shall present to the appropriate committees of the federal government a program of public works, requesting authorization for funds for each project.

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#### \$1.07 State Water Use Plan

(1) The state board shall proceed as rapidly as possible to study existing water resources of the state; means and methods of conserving and augmenting such water resources; existing and contemplated needs and uses of water for protection of the environment, procreation of fish and wildlife, recreational use, improvement of water quality, irrigation, mining, power development, and domestic, municipal, and industrial uses, and all other related subjects including drainage, reclamation, flood-plain zoning, and selection of reservoir sites.

The state board shall progressively formulate an integrated, coordinated program for the use and development of the waters of the state based on the above studies. This program, with such amendments, supplements, and additions as may be necessary later, shall be known as the State Water Use Plan.

(2) The plan shall be directed toward the achievement of the following objectives:

(a) the attainment of maximum reasonable-beneficial use of water for such purposes as those referred to in subsection (1) above;

(b) the proper economic development of the waters of the state;

(c) the control of the waters of the state for such public purposes as navigation, drainage, sanitation, and flood control;

(d) the attainment of adequate water quality as expressed in the state water quality plan; and

(e) the implementation of the water resources policies expressed in section 1.02 of this code.

(3) For the purposes of this plan the state board shall divide each water management district into sections which shall conform as nearly as practicable to a hydrologically controllable area and describe all water resources within the area. The state board shall determine:

(a) presently exercised domestic uses and water permit rights, and

(b) the quantity of water available for application to reasonablebeneficial uses in the future.

(4) Within each section the state board shall establish the following:

(a) Minimum flow for all surface watercourses in the area. The minimum flow for a given watercourse shall be the limit at which further withdrawals would be harmful to the water resources and ecology of the area.

(b) Minimum lake level for all fresh water lakes and ponds in the area greater than 25 acres. The minimum level of a given lake or pond shall be the level at which further withdrawals would be harmful to the water resources and ecology of the area.

(c) Minimum ground water level. The minimum ground water level shall be the level of ground water in an aquifer at which further withdrawals would be harmful to the water resources of the area.

(5) The minimum flow, minimum lake level, and minimum ground water level shall be calculated by the state board using the best information available. Where appropriate, minimum flows and levels may be calculated to reflect seasonal variations. The state board shall also consider and at its discretion may provide for the protection of non-consumptive uses in the establishment of minimum flows and levels.

(6) The governing boards shall condition permits under chapter 2 of this code in such a manner as to preserve minimum flows and levels established under this section.

(7) The state board shall give careful consideration to the requirements of public recreation, the protection of the environment, and procreation of fish and wildlife. The state board may prohibit or restrict other future uses on certain designated streams which may be inconsistent with these objectives.

(8) The state board may also designate certain uses in connection with a particular source of supply which, because of the nature of the activity or the amount of water required, would constitute an undesirable use for which the governing board may deny a permit under the provisions of chapter 2.

(9) The state board may also designate certain uses in connection with a particular source supply which, because of the nature of the activity or the amount of water required, would result in an enhancement or improvement of the water resources of the area. Such uses shall be preferred over other uses in any action pursuant to section 2.05 of this code.

(10) The state board may add to the state water use plan any other information, directions, or objectives it feels necessary or desirable for the guidance of the governing boards in the administration and enforcement of this code.

(11) During the process of formulating or revising the state water use plan, the state board shall consult with and carefully evaluate the recommendations of concerned federal, state, and local agencies, particularly the governing boards of the various water management districts.

(12) Each governing board is directed to cooperate with the state board in conducting surveys and investigations of water resources, to

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furnish to the state board all available data of a technical nature that might be useful to it in the formulation of the state plan, and to advise and assist the state board in the formulation and drafting of those portions of the state plan which are applicable to its district.

(13) The state board shall not adopt or modify the state water use plan or any portion thereof without first holding a public hearing on the matter. At least ninety (90) days in advance of such hearing the state board shall notify any affected governing boards, and shall give notice of such hearing by publication within the affected region pursuant to section 1.09 of this code.

#### \$1.08 State Water Plan

(1) The state water use plan and the state water quality plan, taken together, shall constitute a single unified plan for water resources use, conservation, and development. This overall plan shall be known as the state water plan.

(2) Respective portions of the state water use plan and the state water quality plan shall be developed together to achieve maximum coordination.

#### **§1.09** Adoption of Regulations by the State Board

(1) The state board shall adopt, promulgate, and enforce such regulations as may be necessary or convenient to administer the provisions of this code.

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

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

(b) Within ten (10) days of the adoption of such resolution, notice of the regulation in the form of a summary thereof (or in full, at the discretion of the state board) shall be published once in four (4) newspapers of general circulation in the state. This notice shall fix the time and place for a public hearing before the state board to be held not less than ten (10) or more than twenty (20) days from the date of publication.

(c) Opportunity shall be afforded interested persons to present their views at such public hearing either orally or in writing or both, at the discretion of the state board. Objections may be raised to both

the nature and form of such regulation. Following such hearing the state board may amend, revise, or rescind the resolution, which action shall be set forth in minutes of its proceedings, and by resolution adopt the regulation as proposed or as amended, or revised, or may determine that no regulation is necessary.

(d) Upon the adoption of any regulation as provided, a copy thereof certified by the chairman shall, within five (5) days of the adoption thereof, be filed in the office of the secretary of state and shall become effective fifteen (15) days after such filing except as hereafter provided.

(e) Regulations relating to the internal organization or management of the state board not affecting the public interest shall be adopted by resolution recorded in the minutes of its proceedings and shall become effective immediately upon the filing of a copy thereof, certified by the chairman, in the office of secretary of state.

#### **§1.10** Enforcement Proceedings before the State Board

(1) All proceedings before the state board concerning the enforcement of any provision of this code or any regulation adopted pursuant thereto, or the issuance, modification, or revocation of any permit or license under this code, by the state board, shall be conducted in accordance with this section. However, review of actions of the governing board pursuant to section 1.21 of this code shall not be governed by the provisions of this section.

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

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

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

(b) If any person shall refuse to obey any subpoena as issued or shall refuse to testify or produce any books, papers, or other documents required by the subpoena, the state board may petition the [appropriate] court of the county where such person is served with subpoena or where he resides to issue its rule nisi to such person re-

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quiring him to obey the same unless such person shows sufficient cause for failing to obey said subpoena. The state board shall deposit with said court, when such subpoena is issued in its behalf, the per diem and mileage allowable to secure the attendance of such witnesses.

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

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

(7) Each witness who appears by order of the state board shall receive for his attendance the same fees and mileage allowed by law to witnesses in civil cases, which shall be paid by the parties at whose request the witness is subpoenaed.

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

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

(10) An agent of the state board may preside over any proceedings under this section before the state board and, subject to final approval by the state board, exercise in its name any and all of the powers enumerated in this section.

#### **§1.11** Judicial Review of Regulations and Orders of the State Board

(1)(a) Any affected party may obtain a judicial declaration as to the validity, meaning, or application of any regulation of the state board by bringing an action for declaratory judgment in the [appropriate] court of the county in which the executive offices of the state board are maintained.

(b) In addition to any other ground which may exist, any regu-

lation of the state board may be declared invalid, in whole or in part, for a substantial failure to comply with the provisions of this code.

(2) Any party aggrieved by a final order in any proceedings before the state board under sections 1.10 or 1.22 may seek judicial review of such order by petition for certiorari to the [appropriate] court within the time and manner prescribed by the state appellate rules.

#### **§1.12** Appropriation of Funds to Water Management Districts

The state board shall allocate to the water management districts from funds appropriated to the state board such part thereof as may be necessary for the administrative expenses of such districts. The governing boards shall submit annual budgets to the state board.

#### \$1.13 Annual User-Surveillance Fee—Fee Scale—Collection

(1) Every person who requires a permit under chapters 2 or 5 of this code shall be subject to a user-surveillance fee. This fee shall be an annual fee based on a schedule established by the state board.

(2) The user-surveillance fee shall be collected on an annual basis by the state board or an appropriate agency designated by the legislature. All monies received under the provisions of this section shall be earmarked and allocated for the use of the water management districts, and shall be in addition to monies otherwise appropriated in the general appropriation bill; provided, however, that an amount not exceeding ten (10) per cent of such monies shall be used for the cost of collection and administration.

(3) The failure of any person to pay the user-surveillance fee established hereunder shall constitute grounds for revocation of his permit.

#### **§1.14** Water Resources Development Account

(1) There is hereby established a continuing fund in the general fund in the state treasury to be known as the water resources development account.

(2) The state board may, subject to any limitations otherwise imposed by law, receive and accept in the name of the state any funds which may be offered or become available from federal grants or appropriations, private gifts, donations, or bequests. Such funds shall be deposited in the water resources development account.

(3) Legislative appropriations, other than annual appropriations for the administration of this code by the state board, shall be credited to the water resources development account.

(4) In accord with the powers granted to the state board, it may

expend funds from the water resources development account for administration and to finance any project for the protection, conservation, and development of the water resources of this state.

(5) The state board by regulation shall establish a schedule of fees to accompany application for any permit authorized under chapters 2, 3, 4, and 5 of this code.

#### **§1.15** Water Management Districts: Boundaries

The state shall be divided into the following water management districts:

(Legal description of the boundaries of each district to follow.)

#### **\$1.16 Governing Board**

(1) The governing board of each water management district shall be composed of five (5) members who shall own real property within the district and shall reside within the district. Each member's term of office shall be for five (5) years or until his successor has been appointed and approved; provided, however, that of the members composing the initial board, one shall serve for a term of five years, one for a term of four years, one for a term of three years, one for a term of two years, and one for a term of one year. Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of that term. Members shall be eligible for no more than two (2) consecutive terms. Service for a partial term, while filling a vacancy, shall not count against the maximum length of service allowed a member. The governor may remove from office any officer in the manner and for cause defined by the laws of this state applicable to situations which may arise in the district.

(2) The member of the initial governing board who is appointed for a five-year term shall serve as chairman for the first year. Thereafter, the members of the governing board shall annually elect one of their number as chairman. In the event of the absence or illness of the chairman, the senior member of the governing board shall act as temporary chairman.

The members of the governing board shall annually elect from among their number a secretary and a treasurer.

(3) Members of the governing board shall be appointed by the governor, subject to confirmation by the senate at the next regular session of the legislature, and the refusal or failure of the senate to confirm an appointment shall create a vacancy in the office to which the appointment was made.

(4) The governing board shall appoint as its executive director an engineer or hydrologist who shall serve as the board's chief administrative officer. The executive director shall meet the qualifications set forth in section 1.05 (7) and other reasonable qualifications established by the governing board.

(5) The governing board may employ a legal staff for the purposes of: (a) providing legal counsel on matters relating to the exercise of its powers and duties; (b) representing it in all proceedings of an administrative or judicial nature; and (c) otherwise assisting in the administration of the provisions of this code.

(6) Members of the governing board shall be compensated at a rate not to exceed \_\_\_\_\_\_ dollars per annum. In addition, each member shall be reimbursed for traveling and other necessary expenses incurred in the performance of his duties as a member.

(7) Regular meetings shall be held quarterly. Special meetings may be called by the chairman or at the request of a majority of the members of the governing board.

(8) Three (3) members in attendance shall constitute a quorum. A complete record of the proceedings of the governing board shall be made and such record shall be open to public inspection.

#### **§1.17** General Powers and Duties of the Governing Board

In addition to the other powers and duties allowed it by this code, the governing board is authorized to:

(1) Make surveys and investigations of the water supply and resources of the district and cooperate with the state board in similar activities.

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

(3) Acquire, lease, and dispose of such real and personal property as may be necessary in the performance of its functions, including the acquisition of real property for the purpose of conserving and protecting water and water-related resources as provided in section 1.23.

(4) Acquire by purchase or condemnation according to law such lands, rights-of-way, and water rights as may be needed for flood control, recreation, conservation, and water resource development programs undertaken pursuant to the provisions of this code.

(5) Construct, maintain, and operate works for flood control and

water resource development and exercise all the rights of ownership over waters contained within such works.

(6) Appoint and remove agents and employees including specialists and consultants.

(7) Appoint and fix the salary of an executive director who shall be an engineer or hydrologist with at least five (5) years of experience relating to water resources. The executive director shall be chief administrative officer and serve at the pleasure of the governing board.

(8) Utilize the services or personnel of any state or local governmental agency with its consent, particularly the advisory staff of the state board.

(9) Expend funds for purposes of promotion, advertisement, and improvement of the program and objectives of the district.

(10) Contract with public agencies, private corporations, or other persons for the purpose of carrying out any of the powers of the district.

(11) Cooperate with any county, city, state agency, or public district in water resource development and, when requested, enter into cooperative agreements to prepare plans and specifications, construct or maintain and operate projects, or expend money in behalf of such county, city, state agency, or public district to accomplish the purposes of this code.

(12) Subject to the approval of the state board, cooperate or contract with agencies of the United States government whenever such cooperation or contract would be desirable for the district.

(13) Establish as it deems necessary local advisory boards to advise and make recommendations to the governing board concerning local or specialized problems.

(14) Consult and advise all users of water resources and permit applicants as to the availability of water resources and the most practicable method of water diversion, development, conservation, and utilization.

(15) Exercise such additional power and authority consistent with this code as may be necessary to perform such acts and duties and to decide and dispose of such matters as are not specifically defined in or covered by this code.

#### **§1.18** Adoption of Regulations by the Governing Board

(1) In administering the provisions of this code the governing board shall adopt, promulgate, and enforce such regulations as may be necessary to carry out its functions. (2) Regulations affecting the public interest other than regulations relating to the internal organization and operation of the district shall be adopted as follows:

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

(b) Within ten (10) days of the adoption of the resolution of the board, notice of the regulation in the form of a summary thereof (or in full, at the discretion of the governing board) shall be published once in four (4) newspapers of general circulation in the district. Such notice shall fix the time and place for a public hearing before the governing board, to be held not less than ten (10) or more than twenty (20) days from the date of publication.

(c) Opportunity shall be afforded interested persons to present their views at such public hearing either orally or in writing or both, at the discretion of the governing board. Objections may be raised to the nature and form of such regulation. Following such hearing the governing board may amend, revise, or rescind the resolution, which action shall be set forth in the minutes of the board, and it shall by resolution adopt the regulation as proposed, amended, or revised, or may determine that no regulation is necessary.

(d) Upon the adoption of any regulation as provided, a copy thereof certified by the chairman shall, within five (5) days of the adoption thereof, be filed in the office of the secretary of state and shall become effective fifteen (15) days after such filing except as hereafter provided.

(e) Regulations relating to the internal organization or management of the district not affecting the public interest shall be adopted by resolution recorded in the minutes of the governing board and shall become effective immediately upon the filing of a copy thereof, certified by the chairman, in the office of the secretary of state.

#### **§1.19** Application and Notice

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

(2) Upon receipt of the application the governing board shall cause a notice thereof to be published in a newspaper having general circulation within the affected area. The notice shall be published at least once a week for two (2) consecutive weeks. In addition, the governing board shall send a copy of such notice to any person who

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has filed a written request for notification of any pending applications affecting this particular designated area. This notification shall be sent by regular mail prior to the date of last publication.

(3) This section shall not be applicable to permits or licenses issued under the provisions of chapters 3 and 6 of this code.

#### **§1.20** Citizen Complaints

Any person may file with the governing board a signed complaint against any other person allegedly violating any provisions of this code. The governing board shall cause an investigation to be made, and if the facts stated in the complaint are verified, the governing board shall take appropriate action and notify the complainant thereof. If the complainant is dissatisfied with the action of the governing board, he may apply to the governing board for a hearing which shall be conducted pursuant to the provisions of section 1.21. Such application must be made within ten (10) days after receipt of the notification sent by the governing board. If the complainant is dissatisfied with the action taken under this section, he may take an administrative appeal to the state board under the provisions of section 1.22. Neither the governing board nor the state board shall be obligated to assist the complainant in gathering information, making investigations, or by providing counsel for the purpose of drawing his complaint.

#### **§1.21** Proceedings before the Governing Board

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

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

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

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

(b) If any person shall refuse to obey any subpoena as issued

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

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

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

(7) Each witness who appears by order of the governing board shall receive for his attendance the same fees and mileage allowed by law to witnesses in civil cases, which shall be paid by the parties at whose request the witness is subpoenaed.

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

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

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

(11) An agent of the governing board may preside over any proceeding under this section before the governing board regarding issuance of a permit and, subject to final approval by the governing

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board, exercise in its name any and all of the powers enumerated in this section.

#### **§1.22** Administrative Review

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

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

(3) The state board may find the governing board's action or inaction to be appropriate and proper. Upon a finding that the action of the governing board, or the failure of the governing board to act, was inappropriate or improper, the state board may:

(a) direct that the appropriate action be taken by the governing board,

(b) refer the matter to any other state agency having jurisdiction,

(c) take the appropriate action itself, or

(d) any combination of the foregoing.

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

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

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

#### **§1.23** Acquisition of Real Property

(1) The legislature declares it to be necessary for the public health and welfare that water and water-related resources be conserved and protected; the acquisition of real property for this objective shall constitute a public purpose for which public funds may be expended.

(2) The state board and the governing boards are empowered and authorized to acquire real property and easements therein by purchase, gift, devise, lease, eminent domain, or otherwise for flood control, water management, or water and water-related resource conservation.

(3) Lands, water areas, and related resources which may be acquired for this purpose shall include, but not be limited to, streams and watercourses, parks and recreation areas, beaches, submerged lands, and other open areas, as well as necessary access sites and rights-of-way.

(4) This section shall not limit the exercise of similar powers delegated by statute to any state or local governmental agency.

#### \$1.24 Salt Water Barrier Line

(1) The governing board may, at the request of the board of county commissioners of any county, municipality, or water district responsible for the protection of a public water supply or, having determined by adoption of an appropriate resolution that salt water intrusion has become a matter of emergency proportions, by its own initiative, establish generally along the seacoast, inland from the seashore and within the limits of the area within which the petitioning board has jurisdiction, a salt water barrier line. Inland of this line no canal shall be constructed or enlarged and no natural stream shall be deepened or enlarged which shall discharge into tidal waters without a dam, control structure, or spillway at or seaward of the salt water barrier line to prevent the movement of salt water inland of the salt water barrier line. Provided, however, that the governing board is authorized, in cases where salt water intrusion is not a problem, to waive the requirement of a barrier structure by specific permit to construct a canal crossing the salt water barrier line without a protective device and provided further that the agency petitioning for the establishment of the salt water barrier line shall concur in the waiver.

(2) Application by a board of county commissioners, a municipality, or a water district for the establishment of a salt water barrier line shall be made by adoption of an appropriate resolution agreeing to require compliance with the provisions of this law by county or district forces under their control; by those individuals or corporations filing plats for record; and by individuals, corporations, or agencies seeking authority to discharge surface or subsurface drainage into tidal waters.

(3) No final order establishing a salt water barrier line shall be adopted by the governing board until a public hearing shall be held, and the evidence presented at the hearing shall be given consideration in determining the location of the salt water barrier line.

#### **§1.25** Penalties: Common Law Remedies

(1) The state board may enforce its regulations and orders, adopted pursuant to this code, by suit for injunction, or for damages, or both.

(2) The governing board may enforce its regulations and orders,

adopted pursuant to this code, by suit for injunction, or for damages, or both.

(3) Any person who violates any provision of this code shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment not to exceed six (6) months, or a fine not to exceed \$1,000, or both. For a continuing offense, each day during which the offense is committed shall be considered a separate violation.

(4) No provision of this code shall bar the right of any injured person to seek other legal or equitable relief against a water user for actions in violation of this code.

#### **§1.26** Severability

If any section, subsection, sentence, clause, phrase, or words of this code are for any reason held to be unconstitutional, or invalid, such action shall not affect the validity of any remaining portion of this code.

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#### **§2.01** Permits Required

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

(2) In the event that any person shall file a complaint with the governing board that any other person is making a diversion, withdrawal, impoundment, or consumptive use of water not expressly exempted under the provisions of this code and without a permit to do so, the governing board shall cause an investigation to be made, take appropriate action, and notify the complainant thereof.

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

#### **§2.02** Conditions for a Permit

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

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

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

#### **§2.03** Existing Uses

(1) All existing uses of water, unless otherwise exempted from regulation by the provisions of this code, may be continued after the effective date of this code only with a permit issued as provided in section 2.04 of this code.

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

(3) Applications for permit under the provisions of subsection (2) above must be made within a period of three (3) years from the effective date of this code. Failure to apply within this period shall create a conclusive presumption of abandonment of the use, and the user if he desires to revive the use must apply for a permit under the provisions of section 2.04 of this code.

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

#### **§2.04** Application for a Permit

(1) All permit applications filed with the governing board under this chapter and notice thereof required under section 1.19 of this

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code shall contain the name and address of the applicant (in the case of a corporation, the address of its principal business office), the date of filing, the date set for a hearing if any, the source of the water supply, the quantity of water applied for, the use to be made of the water and any limitations thereon, the place of use, the location of the well or point of diversion, and such other information as the governing board may deem necessary.

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

(3) If the proposed application does not exceed [150,000] gallons per month, the governing board may consider the application and any objections thereto without a hearing. If no objection to the application is received, the governing board, after proper investigation by its staff, may at its discretion approve the application without a hearing if the proposed application does not exceed [1,500,000] gallons per month. Otherwise, the governing board shall set a time for a hearing under section 1.21 of this code.

#### **\$2.05** Competing Applications

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

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

#### **§2.06 Duration of Permits**

(1) Permits may be granted for any period of time not exceeding twenty (20) years. The governing board may base duration of permits on a reasonable system of classification according to source of supply, type of use, or both.

(2) The state board may authorize a permit of duration of up to fifty (50) years in the case of a municipality or other governmental body where such a period is required to provide for the retirement of bonds for the construction of waterworks and waste-disposal facilities.
### **§2.07** Modification and Renewal of Permit Terms

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

(2) If the proposed modification involves an increase in water use of 150,000 gallons per month or more, the application shall be treated under the provisions of section 2.04 in the same manner as the initial permit application. Otherwise, the governing board may, at its discretion, approve the proposed modification without a hearing provided that the permittee establish that (a) a change in conditions has resulted in the water allowed under the permit becoming inadequate for the permittee's needs, or (b) the proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

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

### **§2.08** Revocation of Permits

After a hearing under section 1.21 of this code the governing board may revoke permits as follows:

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

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

(3) For violation of any provision of this code, the governing board may revoke the permit, in whole or in part, until the permittee complies with all provisions of the code.

(4) For nonuse of the water supply allowed by the permit for a period of two (2) years or more, the governing board may revoke the permit permanently and in whole unless the user can prove that his nonuse was due to extreme hardship caused by factors beyond his control.

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

### **\$2.09** Declaration of Water Shortage

(1) The governing board, by regulation, shall formulate a plan for implementation during periods of water shortage. As a part of this

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plan the governing board shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

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

(3) In accordance with the plan adopted under subsection (1) above, the governing board may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

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

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

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

(7) If an emergency condition exists due to a water shortage within any area of the district, and if the executive director, with the concurrence of the governing board, finds that the exercise of the powers under section 2.09 (1) are not sufficient to protect the public health, safety, or welfare, or the health of animals, fish, or aquatic life, or a public water supply, or recreational, commercial, industrial, agricultural, or other reasonable uses, the executive director may issue orders reciting the existence of such an emergency and requiring that such action, including but not limited to apportioning, rotating, limiting, or prohibiting the use of the water resources of the district, be taken as the executive director deems necessary to meet the emergency.

(8) An affected party to whom an emergency order is directed under section 2.09 (7) shall comply immediately but may challenge such an order in the manner set forth in section 1.20 of this code. The governing board shall give such proceedings precedence over all other pending cases.

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#### **\$3.01** Definitions

When appearing in this chapter or in any rule, order, or regulation adopted pursuant thereto, the following words shall mean:

(1) Well—Any artificial excavation constructed by any method which is capable of extracting water from, or injecting water into, the ground. It shall include, but not be limited to, water-table wells, artesian wells, core-boring holes, recharge wells, drainage wells, geothermal wells, waste disposal wells, and all excavations made for the purpose of obtaining or prospecting for oil, natural gas, minerals, or quarrying, or for inserting media to repressure oil- or natural gasbearing formations, or storing petroleum, natural gas, or other products.

(2) Well driller—Any person, firm, or corporation which constructs, alters, or repairs wells.

(3) Well construction—The producing of any well, including the construction, alteration, or repair thereof, but excluding the installation of pumps and pumping equipment.

(4) Pumps and pumping equipment—Any equipment or materials utilized or intended for use in withdrawing or obtaining ground water, including, without limitation, seals, tanks, fittings, and controls.

(5) Pump installation contractor—Any person, firm, or corporation which is in the business of installing or repairing pumps and pumping equipment.

(6) Installation of pumps and pumping equipment—The procedure employed in the placement and preparation for operation of pumps and pumping equipment, including all construction involved in making entrance to the well, and establishing seals and repairs, as defined in section 3.01 (7), to existing installations.

(7) Repairs—Any change, replacement, or other alteration of any well, pump, or pumping equipment, which requires a breaking or opening of the well seal.

(8) Well seal—An approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the other terminal.

(9) Abandoned well—Any well whose use has been permanently discontinued. Any well shall be deemed abandoned which is in such a state of disrepair that continued use for the purpose of obtaining ground water is impractical.

(10) Artificial recharge—The intentional introduction of water into any underground formation.

## \$3.02 Powers and Duties of the Governing Board

In addition to other powers and duties delegated to it by section 1.17 of this code, and other acts authorized by law, the governing board shall:

(1) require registration of all existing wells, as provided in section 3.03;

(2) require registration of all well drillers and pump installation contractors, as provided in section 3.04;

(3) require permits for well construction, as provided in section 3.10;

(4) require permits for installation of pumps and pumping equipment as provided in section 3.11;

(5) require well completion reports, as provided in section 3.13;

(6) develop well construction standards, as provided in section 3.14;

(7) develop pump and pumping equipment installation standards, as provided in section 3.14; and

(8) adopt, modify, promulgate, and enforce all rules, regulations, and orders necessary to carry out the provisions of this code.

## **§3.03 Registration of All Existing Wells**

(1) Any person owning or operating any well shall register said well with the governing board of the water management district within which the well is located. Registration shall be on the forms provided by the governing board.

(2) The registration report shall include:

(a) the water use permit number,

(b) the legal description of the land upon which the well is located,

(c) the location of the well,

(d) the purpose of the well,

(e) the diameter of the well,

(f) the name of the well driller who constructed the well,

(g) the maximum capacity of the well,

(h) the name of the pump installation contractor who installed the pump and pumping equipment, and

(i) such other data as the governing board may require.

(3) The governing board shall maintain a permanent record in which shall be entered the information gathered from the persons owning or operating all wells reported.

(4) In addition to the penalties prescribed in section 1.25, a governing board may deny the issuance of a water use permit, as provided for in chapter 2, until such time as the applicant registers all wells which he owns or operates.

### **§3.04 Registration of Well Drillers and Pump Installation Contractors**

(1) Any person who wishes to engage in business as a well driller or a pump installation contractor shall be registered with the governing board of the water management district in which he intends to engage in such business and shall be the holder of a valid, current registration certificate.

(2) Qualifications for Well Driller's Certificate and Pump Installation Contractor's Certificate:

(a) To be qualified to receive a registration certificate the applicant must:

(1) be at least 21 years of age;

(2) be of good moral character;

(3) have not less than two (2) years' experience in the work for which he is applying for registration;

(4) have knowledge of the rules, regulations, and orders adopted under this code; and

(5) have passed a satisfactory examination conducted by the governing board.

(3) Certificates of Registration:

(a) shall not be transferable or assignable;

(b) shall be valid only within the water management district from which they are obtained; and

(c) shall be assigned an identification number.

## **§3.05** Issuance of Certificates and Bonds

When an application for a certificate of registration has been ap-

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proved by the governing board, the applicant shall be notified in writing, after which he shall have thirty (30) days in which to file with the governing board a performance and compliance bond in the amount of \$5,000.00 per certificate with a corporate surety authorized to do business in the state, conditioned that such applicant will comply with the laws of the state and the rules, orders, and regulations of the governing board while engaging in the business for which he is registered.

# \$3.06 Supervision of Well Construction and the Installation of Pumps and Pumping Equipment

(1) All well construction operations shall be performed under the direct and personal supervision of the registered well driller who received the permit for well construction, as provided in section 3.10.

(2) All operations connected with the installation of pumps and pumping equipment shall be performed under the direct and personal supervision of the registered pump installation contractor who received the permit for installation of pump and pumping equipment, as provided in section 3.11.

# \$3.07 Marking of Vehicles and Equipment

It is the duty of all registered well drillers and registered pump installation contractors to see that all vehicles, trailers, and rigs used by them or their employees in their business are marked with legible identification numbers at all times. The identification number to be used shall be the registration number which appears on the registration certificate. The governing board shall set out in detail in its rules, regulations, and orders the specific method and manner for marking vehicles and equipment.

# \$3.08 Grounds for Refusal, Suspension, or Revocation of Certificates

The governing board may refuse to issue or renew, or may suspend or revoke, a certificate of registration on one or more of the following grounds:

(1) material misstatement in the application for certificate of registration;

(2) failure to have or retain the qualifications required herein;

(3) intentional misrepresentation of a material fact by an applicant in connection with any information or evidence furnished the governing board;

(4) willfully aiding or abetting another in violation of any provision of this code or any regulation or order issued pursuant thereto;

(5) gross incompetency in the performance of his work;

(6) failure to apply for registration prior to beginning well drilling operations or pump installation operations within the water management district; or

(7) willful disregard or violation of any provision of this code, or rule, order, or regulation issued pursuant thereto.

### \$3.09 Proceedings to Refuse, Suspend, or Revoke Certificates

(1) Proceedings to refuse, suspend, or revoke a certificate of registration may be instituted by the water management district or by any other party by filing a written complaint with the governing board on forms provided by the board.

(2) The governing board, upon investigation and after a hearing, as provided in section 1.21 of this code, may refuse, suspend, or revoke the certificate of registration.

## **§3.10** Permit for Well Construction

(1) Prior to the beginning of construction of all wells, permission must be obtained from the governing board by making written application for the construction on forms to be provided by the board. The application shall be made by the well driller who will perform the work and shall contain the following:

(a) the name and registration number of the applicant,

(b) the name and address of the person who will control and operate the well,

(c) the number of the water use permit,

(d) the location of the well,

(e) the proposed depth and method of construction,

(f) the size and expected capacity of the well,

(g) the name and registration number of the pump installation contractor, and

(h) such other information as the governing board may require.

(2) The governing board shall issue a permit whenever it finds that an application is in proper form and contains the required information, provided that, on the basis of the information therein contained, the proposed construction will not be contrary to applicable law, rules, orders, or regulations. Receipt of the permit by the well driller will constitute permission to begin well construction. The permit will also direct the well driller to file a well completion report, as provided in section 3.13.

(3) The governing board shall issue a Notice of Rejection, as pro-

vided in section 3.12, whenever it finds that an application fails to meet the requirements of this code or any rule, order, or regulation adopted pursuant hereto.

(4) The permit shall be prominently displayed at the site of the well prior to beginning any work thereon and shall remain so displayed until construction is completed.

(5) The holder of a permit under this section who desires to change the location of his well before construction is completed shall apply to the board for an amendment of his permit. The application shall contain the same information as required for an original application, plus information as to the manner of sealing or plugging the incomplete and abandoned well. If the board determines that the proposed well at the proposed new location will both serve the same use as the original well and draw upon the same supply of water and that the incomplete and abandoned well will be sealed or plugged so as to prevent waste of water and damage to the water supply so as not to be dangerous to public safety, it shall approve the application and issue an amended permit therefor.

#### **§3.11** Permit for Installation of Pumps and Pumping Equipment

(1) Prior to the beginning of the installation of pumps and pumping equipment, permission must be obtained from the governing board by making written application for the construction on forms to be provided by the board. The application shall be made by the pump installation contractor who will perform the work and shall contain the following:

(a) the name and registration number of the applicant,

(b) the number of the water use permit,

(c) the number of the well construction permit,

(d) description of the pumps and pumping equipment to be installed, and

(e) such other information as the governing board may require.

(2) The governing board shall issue a permit whenever it finds that an application is in proper form and contains required information, provided that on the basis of the information therein contained, the proposed installation will not be contrary to applicable law, rules, orders, or regulations. Receipt of the permit by the pump installation contractor will constitute permission to install pumps and pumping equipment. The permit will also direct the pump installation contractor to file a well completion report, as provided in section 3.13.

(3) The governing board shall issue a Notice of Rejection, as

provided in section 3.12, whenever it finds that an application fails to meet the requirements of this code or any rule, order, or regulation adopted pursuant hereto.

(4) The permit shall be prominently displayed at the site of the well prior to beginning any work thereon and shall remain so displayed until the installation is completed.

#### **§3.12** Notice of Rejection, Suspension, or Revocation of Permit

(1) The governing board shall issue a Notice of Rejection whenever it determines that an application for a permit under sections 3.10 or 3.11 fails to meet the requirements of this code or any rule, order, or regulation adopted pursuant hereto.

(2) The Notice of Rejection shall:

(a) state the ground for rejection, and may state any remedial action which may be taken to make such application acceptable for approval; and

(b) be served in writing upon the persons signing the application by registered or certified mail.

(3) Any applicant receiving a Notice of Rejection may obtain a hearing before the governing board of the water management district by filing within thirty (30) days of the mailing of such Notice of Rejection a written petition requesting such hearing. The hearing before the governing board shall be conducted pursuant to section 1.21 of this code.

(4) The governing board may, upon investigation, suspend a permit and, after notice and hearing, may extend such suspension or may revoke the permit. Such suspension or revocation may be made on any one or more of the following grounds:

(a) material misstatement or misrepresentation in the application for a permit;

(b) failure to comply with the provisions set forth in the permit;

(c) willful disregard or violation of any provision of this code, or any rule, order, or regulation promulgated pursuant hereto; or

(d) material change of circumstances or conditions existing at the time such permit was issued.

#### **§3.13** Well Completion Report

Within thirty (30) days after the completion of the well, the well driller and pump installation contractor shall file, upon forms provided by the governing board, a written report with the board. The report shall contain the following information:

(1) a log containing the depth, thickness, and character of the different strata penetrated and the location of water-bearing strata;

(2) an accurate record of the work, including:

(a) statement of the date of beginning of work,

(b) the date of completion,

<sup>\*</sup>(c) length, size, and weight of the casing and how the same is placed,

(d) the size of the drilled hole,

(e) where the well is sealed off and the type of seal,

(f) number of cubic feet per second (cfs) or gallons per minute (gpm) of flow from the well when completed,

(g) pressure in pounds per square inch (psi) if it is a flowing well, and if nonflowing, the static water level and the water temperature, and

(h) a chemical analysis of a water sample drawn from the well; and

(3) such additional information as may be required by the governing board to establish compliance with the terms of the permit, the provisions of this code, and all rules, regulations, and orders promulgated pursuant to this code.

### **§3.14** Well Construction Standards and Pump Installation Standards

(1) The governing board shall adopt minimum standards for the construction of wells and the installation of pumps and pumping equipment.

(2) The minimum standards for the construction of wells shall include, but not be limited to, the following provisions:

(a) all wells shall be equipped with a device for measuring the amount of ground water being withdrawn from the well, such device to be approved by the governing board;

(b) all wells shall be capped or equipped with a control valve, such cap and control valve to be approved by the governing board;

(c) approved procedures for the plugging of wells;

(d) approved procedures for the grouting and sealing of wells; and

(e) criteria for the location of wells:

(1) with respect to possible pollution sources, and

(2) with respect to maintaining the well in a sanitary condition.

(3) Should any well not be equipped with a cap or valve as required in subsection (2) above, or should any well be allowed to

flow so as to waste ground water in violation of this section, or should any well be contaminated because of deficiencies as set forth in subsection (2) above, in violation of this section, then:

(a) The governing board shall, upon being informed of this fact, give notice to the owner of the land upon which the well is situated to correct the defect or waste as the case may be. If the defect or waste is not corrected within ten (10) days after notice is given, the governing board shall have the necessary valve, cap, plug, or other device installed upon the well.

(b) The cost of installation of the valve, cap, plug, or other device and the control of the flow from the well shall, if made or done by the governing board, be at the expense of the owner and shall be a lien against the tract of land upon which the well is situated until the expense is paid. Said lien may be foreclosed in a civil action in any court of competent jurisdiction, and the court shall allow the plaintiff a reasonable attorney's fee to be set as a part of the cost.

(4) The minimum standards for the installation of pumps and pumping equipment shall include, but not be limited to, the following provisions:

(a) The pumps and pumping equipment shall be installed so that the pumps and their surroundings can be kept in a sanitary condition.

(b) The pumps and pumping equipment shall be of a capacity consistent with the water need and the drawdown characteristics of the well.

(c) The pumps and pumping equipment shall be durable and reliable in character.

(d) The pumps and pumping equipment shall be constructed of material which will not create a toxic condition in the water.

(e) The pumps and pumping equipment shall provide reasonable protection against entrance of pollutants.

#### **§3.15** Well Construction Advisory Board

(1) The governing board of each water management district shall appoint a six- (6) member well construction advisory board. The advisory board members shall meet the following conditions:

(a) Three (3) of the members shall be registered well drillers.

(b) Three (3) of the members shall be registered pump installation contractors.

(c) Each member shall reside in the water management district on whose advisory board he serves.

(d), Each member shall have a minimum of five (5) years of experience in well construction or installing pumps and pumping equipment.

(e) No more than one member may be employed or own an interest in the same company, firm, or business association which is engaged in any phase of well construction or the installation of pumps and pumping equipment.

(2) The initial six (6) members shall be appointed for the following terms: two well drillers and two pump installation contractors for a term of one (1) year, and one well driller and one pump installation contractor for a term of two (2) years. Thereafter all subsequent appointments shall be for terms of two (2) years.

(3) The advisory board shall advise the governing board on the following:

(a) the registration requirement with respect to well drillers and pump installation contractors;

(b) the grounds for refusal, suspension, or revocation of certificates of registration;

(c) permits for well construction;

(d) permits for installation of pumps and pumping equipment;

(e) well completion reports;

(f) well construction standards and pump installation standards;

(g) the abandonment of wells;

(h) the marking of vehicles and equipment; and

(i) any other matter that the governing board requests.

#### **§3.16** Artificial Recharge

(1) No construction may be begun on a project involving artificial recharge as defined in section 3.01 (10) of this code without written permission of the governing board of any water management district within which the construction will take place. Such application shall contain the detailed plans and specifications for the construction of the project. Should the application be rejected, the applicant may obtain a hearing before the governing board by filing a written petition requesting such hearing. The hearing before the governing board shall be conducted pursuant to section 1.21 of this code.

(2) The governing board of a water management district may do any act necessary to replenish the ground water of said district. For the purposes of replenishing the ground water supplies within the district, the board may, among other things:

(a) buy and sell water;

(b) exchange water;

(c) distribute water to persons in exchange for ceasing or reducing ground water extractions;

(d) spread, sink, and inject water underground;

(e) store, transport, recapture, reclaim, purify, treat, or otherwise manage and control water for the beneficial use of persons or property within the district; and

(f) build the necessary works to achieve ground water replenishment.

### **§3.17** Abandonment of Wells

When a well is abandoned, the owner thereof shall fill and seal the well in a manner approved by the governing board. Prior to abandonment the owner shall file with the governing board a report showing the following:

(1) the name and address of the owner;

(2) the water use permit number;

(3) the name and address of the registered well driller who will be employed to perform the work required for abandonment;

(4) the reason for abandonment; and

(5) a description of the work to be performed to effect the abandonment consistent with the standards adopted pursuant to section 3.14 (2) (c) and (d).

#### **§3.18** Drainage Wells

All drainage wells shall conform to the provisions of this chapter as well as the provisions of chapter 5.

## **§3.19 Exemptions and Limitations**

No provisions of this chapter shall apply to:

(1) any distribution of water beyond the point of discharge from the storage or pressure tank, or beyond the point of discharge from the pump if no tank is employed; or

(2) any well, pump, or other equipment used temporarily for dewatering purposes.

# **§4.01** Definitions

When appearing in this chapter or in any rule, order, or regulation adopted pursuant thereto, the following words shall mean:

(1) Dam—Any artificial or natural barrier, with appurtenant works, raised to obstruct or impound, or which does obstruct or impound, any of the surface waters of this state.

(2) Appurtenant work—Any artificial improvement to a dam which might affect the safety of such dam, or, when employed, might affect the holding capacity of such dam, or of the reservoir or impoundment created by such dam.

(3) Impoundment—Any lake, reservoir, pond, or other containment of surface water occupying a bed or depression in the earth's surface and having a discernible shoreline.

(4) Reservoir—Any artificial or natural holding which contains or will contain the water impounded by a dam.

(5) Work—Any artificial structure not included in section 4.01 (1) and (2), and including, but not limited to, ditches, canals, conduits, channels, culverts, pipes, and other construction that connects to, draws water from, drains water into, or is placed in or across the waters of the state.

(6) Alter—To extend a dam or work beyond maintenance in its original condition, including changes which may increase or diminish the flow or storage of surface water or which may affect the safety of such dam or work.

(7) Maintenance—"Maintenance" or "repairs" shall mean only such maintenance or repairs as may affect the safety of any dam, impoundment, reservoir, appurtenant works, or works.

(8) Variants of defined word—The definition of a defined word applies to any of its variants.

### §4.02 Exemptions

(1) Nothing in this chapter, or in any rule, order, or regulation adopted pursuant thereto, shall be construed to affect the right of any natural person to capture, contain, discharge, and use surface water for uses permitted by section 2.01 (1).

(2) Nothing in this chapter, or in any rule, order, or regulation adopted pursuant thereto, shall be construed to affect the right of any person engaged in the occupation of agriculture, floriculture, or horticulture to alter the topography of any tract of land for purposes consistent with the practice of such occupation, provided, however, that such alteration shall not be for the sole or predominant purpose of impounding or obstructing surface waters.

(3) All rights and restrictions set forth in this section shall be enforced by the governing board, and nothing contained herein shall be construed to establish a basis for a cause of action for private litigants.

### \$4.03 Headgates, Valves, and Measuring Devices

(1) The owner of any dam, impoundment, reservoir, appurtenant works, or works, by means of which water is diverted from or discharged into the waters of the state, shall install and maintain a substantial and serviceable headgate or valve at the point where the water is diverted or discharged, and shall install a measuring device which meets the requirements and specifications published by the governing board at the point designated by the governing board for measuring the water discharged or diverted.

(2) If any owner shall not have constructed or installed such headgate, valve, or measuring device within sixty (60) days after the governing board has ordered its construction, the governing board shall have constructed or installed such headgate, valve, or measuring device, and the costs of installing the headgate, valve, or measuring device shall be a lien against the owner's land upon which such installation takes place until the governing board is reimbursed in full.

(3) No person shall alter or tamper with a measuring device so as to cause it to register other than the actual amount of water diverted, discharged, or taken. Violation of this subsection shall be a misdemeanor, punishable under section 1.25 of this code.

(4) Such headgates, valves, and measuring devices shall be subject to the inspections provided in section 4.07 of this code.

#### **§4.04** Permits for Construction or Alterations

(1) Except for the exemptions set forth in section 4.02, no person shall construct or alter a dam, impoundment, reservoir, work, or appurtenant work, other than in the course of normal maintenance,

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without first obtaining a permit from the governing board. The governing board may impose such reasonable conditions as are necessary to assure that the construction or alteration of such dam, impoundment, reservoir, work, or appurtenant work will not be inconsistent with the overall objectives of the State Water Plan and will not be harmful to the water resources of the district. Nothing in this section shall be construed to be inconsistent with the provisions of chapter 2 or chapter 5 of this code.

(2) A person proposing to construct or alter a dam, impoundment, reservoir, work, or appurtenant work shall apply to the governing board for a permit authorizing such construction or alteration. The application shall contain the following:

(a) name and address of the applicant;

(b) name and address of the owner or owners of the land upon which the works are to be constructed and a legal description of such land;

(c) location of the work;

(d) engineering drawings showing the detailed plans of construction;

(e) detailed specifications of construction;

(f) name and address of the person who prepared the plans and specifications for construction;

(g) name and address of the person who will construct the proposed work;

(h) general purpose of the proposed work; and

(i) such other information as the governing board may require.

(3) Notice of all applications for permits under this section shall be published as provided in section 1.19 of this code. The notice shall contain the name and address of the applicant (in the case of a corporation, the address of its principal business office), the date of filing, the date set for a hearing if any, the source of the water to be contained, the quantity of water to be contained, the use to be made of the water and any limitation thereon, and such other information as the governing board may deem necessary.

(4) The notice provided for in subsection (3) above shall state that written objections to the proposed permit may be filed with the governing board by a specified date. The governing board, at its discretion, may request further information from either applicant or objectors, and a reasonable time shall be allowed for such responses.

(5) If no substantial objection to the application is received, the governing board, after proper investigation by its staff, may at its

discretion approve the application without a hearing. Otherwise, the governing board shall set a time for a hearing under section 1.21.

### \$4.05 Permits for Maintenance or Operation

(1) Except for the exemptions set forth in section 4.02 of this code, no person shall maintain or operate a dam, impoundment, reservoir, work, or appurtenant work without first obtaining a permit from the governing board. The governing board may impose such reasonable conditions as are necessary to assure that the operation or maintenance of such dam, impoundment, reservoir, appurtenant work, or work will not be inconsistent with the overall objectives of the State Water Plan and will not be harmful to the water resources of the district. Nothing in this section shall be construed to be inconsistent with the provisions of chapter 2 or chapter 5 of this code.

(2) Except as otherwise indicated in sections 4.08 and 4.09, a permit issued by the governing board for the maintenance and operation of a dam, impoundment, reservoir, work, or appurtenant work shall be permanent, and the sale or conveyance of such dam, impoundment, reservoir, work, or appurtenant work or the land on which the same is located shall in no way affect the validity of the permit.

#### **\$4.06** Completion Report

Within thirty (30) days after the completion of construction or alteration of any dam, impoundment, reservoir, work, or appurtenant work, the permittee shall file a written statement of completion with the governing board. The governing board shall designate the form of such statement and such information as it shall require.

### **\$4.07** Inspections

(1) During the construction or alteration of any dam, impoundment, reservoir, work, or appurtenant work, the governing board shall make at its expense such periodic inspections as it deems necessary to insure conformity with the approved plans and specifications included in the permit.

(2) If during construction or alteration the governing board finds that the work is not being done in accordance with the approved plans and specifications as indicated in the permit, it shall give the permittee written notice stating with which particulars of the approved plans and specifications the construction is not in compliance and shall order immediate compliance with such plans and specifications. Failure to

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act in accordance with the orders of the governing board after receipt in accordance with section 4.09.

(3) Upon completion of the work the governing board shall make of written notice shall result in the initiation of revocation proceedings periodic inspections, not less than annually, of dams, impoundments, reservoirs, works, and appurtenant works as it deems necessary to protect the public health and safety and the water resources of the state. Section 1.17 (2) of this code concerning right of entry is fully applicable to this subsection.

## **§4.08** Abandonment

(1) Any owner of any dam, impoundment, reservoir, work, or appurtenant work wishing to abandon or remove such work shall first obtain a permit to do so from the governing board.

(2) Where any dam, impoundment, reservoir, work, or appurtenant work is not owned or controlled by the state or any of its agencies and is not used or maintained under the authority of the owner for a period of three (3) years, it shall be presumed that the owner has abandoned such dam, impoundment, reservoir, work, or appurtenant work and the site thereof, and has dedicated the same to the district.

(3) The title of the district to any such dam, impoundment, reservoir, work, or appurtenant work may be established and determined in the court appointed by statute to determine the title to real estate.

#### \$4.09 Revocation and Modification of Permits

The governing board may revoke or modify a permit at any time if it determines that a dam, impoundment, reservoir, work, or appurtenant work has become a danger to the public health or safety or if its operation has become inconsistent with the objectives of the State Water Plan. Upon such revocation or modification, the governing board shall give written notification to the permittee. No permit shall be revoked or modified before the affected party is afforded an opportunity for a hearing before the governing board in accordance with section 1.21 of this code. If the governing board feels that the danger to the public is imminent, however, it may temporarily restrain the construction, alteration, or operation of the works until the hearing is concluded, or may take such action as is necessary under section 4.12 of this chapter.

# \$4.10 Abatement

Any dam, impoundment, reservoir, work, or appurtenant work

which violates the laws of this state or which violates the standards of the governing board shall be declared a public nuisance. The operation of such dam, impoundment, reservoir, appurtenant work, or work may be enjoined by suit by the state or one of its agencies, or by a private citizen. The governing board shall be a necessary party to any such suit. Nothing in this section shall be construed to conflict with the provisions of section 4.09 of this chapter, pertaining to the revocation powers of the governing board.

## **§4.11 Remedial Measures**

Upon completion of its inspection the governing board shall determine what alterations and repairs are necessary and order that such repairs and alterations shall be made within a reasonable time. If such landowner shall fail to make such repairs and alterations within the allotted time, the governing board may, at its discretion, cause such alterations and repairs to be made. The cost of such repairs shall be a lien against the property of such landowner until the governing board is reimbursed, with reasonable interest and attorney's fees, for its costs. Said lien may be enforced in a civil court of competent jurisdiction.

## **§4.12 Emergency Measures**

(1) The governing board shall immediately employ any remedial means to protect life and property if either:

(a) the condition of any dam, impoundment, reservoir, work, or appurtenant work is so dangerous to the safety of life or property as not to permit time for the issuance and enforcement of an order relative to maintenance or operation, or

(b) passing or imminent floods threaten the safety of any dam or reservoir.

(2) In applying the emergency measures provided for in this section, the governing board may in an emergency do any of the following:

(a) lower the water level by releasing water from any impoundment or reservoir;

(b) completely empty the impoundment or reservoir; or

(c) take such other steps as may be essential to safeguard life and property.

(3) The governing board shall continue in full charge and control of such dam, impoundment, or reservoir, and its appurtenant works, until they are rendered safe or the emergency occasioning the action has ceased.

## **§4.13 Immunity from Liability**

(1) No action shall be brought against the state, or any of its agencies, or any agents or employees of the state, for the recovery of damages caused by the partial or total failure of any dam, impoundment, reservoir, work, or appurtenant work upon the ground that the state is liable by virtue of any of the following:

(a) approval of the permit for construction or alteration;

(b) the issuance or enforcement of orders relative to the maintenance or operation;

(c) control and regulation of the dam, impoundment, reservoir, work, or appurtenant work; or

(d) measures taken to protect against failure during emergency.

### **§4.14** Applicability to Existing Works

(1) Any person owning or operating a dam, impoundment, reservoir, work, or appurtenant work shall register said work with the governing board within which district the work is located. Registration shall be on the forms provided by the governing board.

(2) All provisions of this chapter shall apply to all dams, impoundments, reservoirs, works, or appurtenant works in existence at the time of its effective date.

### Chapter 5

#### **§5.01** Definitions

When appearing in this code or in any regulation adopted pursuant thereto, the following words shall mean:

(1) Water quality—Chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use.

(2) Impairment of water quality—Any act or condition, including, but not limited to, pollution, which temporarily or permanently reduces, or threatens to reduce, water quality below the level established by the state board pursuant to this code.

(3) Pollution—Any alteration of water quality, including change of temperature, taste, color, turbidity, or odor of the waters, or the addition of liquid, solid, radioactive, gaseous, or other substances to

the waters, or the removal of such substances from the waters, which will render or is likely to render the waters harmful to the public health, safety, or welfare, industrial, agricultural, recreational, or other lawful uses, or to animals, birds, or aquatic life.

(4) Wastes—Sewage, industrial wastes, and all other wastes, liquid, gaseous, solid, or radioactive, which may affect water quality.

(5) Sewage—Any and all waste substance, liquid or solid, associated with human habitation, or which contains or may be contaminated with human or animal excreta or excrement, offal, or any feculent matter.

(6) Industrial waste—Any and all solid, liquid, or gaseous substance, excluding sewage, resulting from any producing, manufacturing, or processing operations of whatever nature or from the development of any natural resource.

(7) Other waste—Garbage, municipal refuse, chemicals, and all other substances, which are not sewage or industrial waste, which may pollute the waters of the state.

(8) Sewage system—Pipelines or conduits, pumping stations, and force mains, and all other structures, devices, appurtenances, and facilities used for conducting wastes to an ultimate point for treatment or disposal.

(9) Treatment works—Any plant or other works used for the purpose of treating, stabilizing, or holding wastes.

(10) Disposal system—Any system for disposing of wastes, either by surface or underground methods, including sewage systems, treatment works, disposal wells, and other systems.

(11) Outlet—The terminus of a sewer system, or the point of emergence of any sewage, industrial waste, or other wastes or the effluent therefrom, into the waters of the state.

## **§5.02** Exception of Atmospheric Moisture

No provision of this chapter shall apply to moisture contained in the atmosphere.

## **§5.03** Additional Powers and Duties of the State Board

In addition to other powers and duties delegated to it under this code, the state board shall:

(1) exercise general supervision over the administration and enforcement of this chapter within the state and all regulations and orders promulgated thereunder, and adopt, modify, repeal, promul-

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gate, and enforce such regulations implementing or effectuating its powers and duties under this code as it may deem necessary;

(2) administer any program of research in water pollution or water quality control, accept funds from the United States or any person to that end, and support programs of research by other state agencies, universities, industries, and private persons;

(3) collect and disseminate information relating to water pollution and the prevention, control, and abatement thereof;

(4) cooperate with other state or interstate water pollution control agencies in establishing standards, objectives, or criteria for quality of interstate waters originating in or flowing through the state; and

(5) administer any program of financial assistance for water pollution or water quality control and accept funds from the United States or any person to that end.

The state board is designated as the water pollution control agency of the state for all purposes stated in the Federal Water Pollution Control Act.

## **§5.04** Water Quality Plan

(1) The state water quality plan shall consist of the following:

(a) water quality standards for all waters of the state, such standards to consist of receiving water standards and, where applicable, effluent standards;

(b) water quality objectives for planning and operation of water resource development projects for water quality control activities, and for the improvement of existing water quality;

(c) other principles and guidelines deemed essential by the state board for water quality control; and

(d) a program of implementation for those waters which do not presently meet established water quality standards.

(2) The state water quality plan shall be periodically reviewed and may be revised.

(3) During the process of formulating or revising the state water quality plan, the state board shall consult with and carefully evaluate the recommendations of concerned federal, state, and local agencies, particularly the governing boards of the various water management districts.

(4) The state board shall not adopt or modify the state water quality plan or any portion thereof until a public hearing is held. At least ninety (90) days in advance of such hearing the state board shall notify any affected governing boards, and shall give notice of

such hearing by publication within the affected region pursuant to section 1.09 of this code.

### **§5.05** Water Quality Standards

(1) It is recognized that, due to variable factors, no single standard of quality and purity of the waters is applicable to all waters of the state or to different segments of the same waters.

(2) The state board shall group all waters of the state into classes and adopt water quality standards for each class. Such classification shall be made in accordance with considerations of best usage in the interests of the public.

(3) In preparing the classification of waters and the standards of purity and quality above mentioned, the state board shall give consideration to:

(a) the size, depth, surface area covered, volume, direction and rate of flow, stream gradient, and temperature of the water;

(b) the character of the land bordering, overlying, or underlying the waters of the state and its peculiar suitability for particular uses, and with a view to conserving the value of said land, encouraging the most appropriate use of the same for economic, residential, agricultural, industrial, or recreational purposes;

(c) the past, present, and potential uses of the waters for transportation, domestic and industrial consumption, bathing, fishing and fish culture, fire prevention, sewage disposal, industrial and other wastes, and other possible uses; and

(d) the extent of present defilement or fouling of the waters which has already occurred or resulted from past discharge therein.

(4) The water quality plan adopted by the state board shall contain standards of quality and purity for each of the various classes in accordance with the best interests of the public.

(5) In preparing such standards, the state board shall give consideration to:

(a) the extent, if any, to which floating solids may be permitted in the waters;

(b) the extent, if any, to which suspended solids, settleable solids, colloids, or a combination of solids with other substances suspended in water may be permitted;

(c) the extent, if any, to which organisms or virus may be permitted in the waters;

(d) the extent of the oxygen demand which may be permitted in the receiving waters; (e) the extent, if any, to which the temperature of the waters may be altered;

(f) the minimum dissolved oxygen content of the waters that shall be maintained;

(g) the limits of other physical, chemical, biological, or radiological properties that may be necessary for preserving the quality and purity of the waters of the state;

(h) the extent to which any substance must be excluded from the water for the protection and preservation of public health; and

(i) the value of stability and the public's right to rely upon standards as adopted for a reasonable period of time to permit institutions, municipalities, commerce, industries, and others to plan, schedule, finance, and operate improvements in an orderly and practical manner.

(6) The state board may impose such effluent standards as it deems necessary to maintain or improve water quality.

(7) The state board, by regulation, may modify classifications and upgrade the standards of quality.

#### **§5.06** Additional Powers and Duties of the Governing Board

In addition to other powers and duties delegated to them by this code, the governing boards of the water management districts shall:

(1) issue, revoke, modify, or deny, in accordance with the requirements of the state board, permits for the discharge or removal of any substance into the waters of the state and for the installation, modification, or operation of disposal systems or any part thereof;

(2) require the prior submission of plans, specifications, and other data relative to the construction of disposal systems or any part thereof in connection with the issuance of such permits or approvals as are required by this code;

(3) in accordance with the state water quality plan, issue, modify, or revoke orders (a) prohibiting or abating discharges or removals of various substances into the waters of the state, or (b) requiring the construction of new disposal systems or any parts thereof or the modification, extension, or alteration of existing disposal systems or any parts thereof, or the adoption of other remedial measures to maintain or upgrade water quality;

(4) require proper maintenance and operation of disposal systems;

(5) adopt, modify, repeal, and promulgate all necessary regulations for the purpose of controlling the discharge of sewage, other wastes, and other substances from any boat; and

(6) exercise all incidental powers necessary to carry out the objectives of this code.

# \$5.07 Permits for New Outlets, Disposal Systems, and Treatment Works

(1) No person shall without having obtained a written permit from the governing board:

(a) begin construction of any new outlet for the discharge of sewage, industrial wastes, or other wastes, or the effluent therefrom, into the waters of the state, including coastal waters;

(b) begin construction of any new disposal system for the discharge of sewage, industrial wastes, or other wastes, or the effluent therefrom, into the waters of the state, including coastal waters, or make any change in, addition to, or extension of any existing disposal system or part thereof which would materially alter the method, the volume, or the effect of treating or disposing of the sewage, industrial wastes, or other wastes; or

(c) begin construction of any new treatment work for the treatment of sewage, industrial waste, or other wastes, or the effluent therefrom, into the waters of the state, including coastal waters, or make any change in, addition to, or extension of any existing treatment plant or part thereof which would materially alter the method, volume, or effect of treating said wastes.

(2) No permit for any new outlet or the construction of a new disposal system or the modification or extension of an existing disposal system shall be issued by the governing board until the plans have first been submitted to and approved by it.

### **§5.08** Discharge Permits

(1)(a) No person shall discharge any substance into the waters of the state which may affect the quality of waters of the state without first obtaining a permit from the governing board of the area affected by such discharge.

(b) No person who is a citizen, domiciliary, or political agency or entity of this state shall discharge any substance into waters outside of the boundaries of the state without first obtaining a permit from the governing board of the area affected by such discharge.

(c) The state board may authorize the governing boards to exempt certain types of discharges from the requirements of this subsection if it is clearly established that there will be no significant impairment of water quality from such discharges.

(2) The permit may be granted only if the governing board determines that such discharge will not lower water quality in the affected water below the standards set for that class of water pursuant to the state water quality plan. Permits may also be denied if the governing board determines that such discharge would not be consistent with water quality improvement objectives established for the affected water pursuant to the state water quality plan.

(3) The procedure for permit applications shall be governed by the provisions of section 1.19 of this code. All information required by such form must be furnished and, when information filed by any person pursuant to this section is not adequate in the judgment of the governing board, the board may require such person to supply such additional information as it deems necessary.

(4) No discharge into the waters of the state pursuant to the terms of a permit issued under this section shall create a vested right to continue such discharge. All discharges into waters of the state are privileges, not rights.

(5) Permits may be modified, suspended, or revoked by the governing board after a hearing pursuant to section 5.12 of this code:

(a) for any material false statement in the permit application;

(b) for willful or negligent violation of the conditions of the permit;

(c) for refusal to allow inspection of facilities as provided under section 5.10 of this code;

(d) after a determination by the governing board that the water quality of the affected water has fallen below the water quality standards established by the state board pursuant to the water quality plan or any subsequent modification thereof;

(e) in order to protect the public health, safety, or welfare; or

(f) to protect any domestic consumptive uses or water uses exercised pursuant to the provisions of chapter 2 of this code.

(6) Discharge permits shall be issued for a term of ten (10) years. Renewals shall be treated in the same manner as initial applications.

(7) A person discharging any substance into the waters of the state on the effective date of this code who does not qualify or has been denied a permit under this section may apply to the governing board for a temporary permit. No such temporary permit shall be granted by the governing board unless it affirmatively finds all of the following:

(a) the proposed discharge does not qualify for a permit under this section;

(b) the applicant is constructing, installing, or placing into operation, or has submitted plans and reasonable schedules for the construction, installation, or operation of, an approved pollution abatement facility or alternate waste disposal system which will qualify the applicant for a permit under this section, or that the applicant has a waste for which no feasible and acceptable method of treatment or disposal is known or recognized but he is making a bona fide effort through research and other means to discover and implement such a method;

(c) the denial of a temporary permit would work an extreme hardship upon the applicant;

(d) the granting of a temporary permit will result in substantial public benefit; and

(e) the discharge will not be unreasonably destructive to the quality of the receiving waters.

A temporary permit shall be reviewable annually or within a lesser period of time as the governing board may specify in the temporary permit, and it must be affirmatively shown that all of the requirements for the initial issuance of the temporary permit are still being met by the holder thereof.

## **§5.09** Pollution of Underground Waters: Permits

(1) No person shall use any cavity, sink, or driven or drilled well for the purpose of draining any surface water or discharging any sewage, industrial, or other wastes into the underground waters of the state without first obtaining a discharge permit from the governing board under the provisions of section 5.08 of this code.

(2) This section shall not limit the exercise by the state board of health of any powers delegated to it by statute over the underground waters of the state.

### **§5.10** Inspections

(1) The governing board shall have the power to enter at reasonable times upon any private or public property other than dwelling places for the purpose of inspecting and investigating conditions relating to water quality.

(2) Such investigation shall include such engineering studies, bacteriological, biological, and chemical analyses of the water, and location and character of the source or sources of contamination as may be necessary.

(3) The governing board may require the maintenance of records

relating to the operation of disposal systems, and any authorized representative of the governing board may examine and copy any such records or memoranda pertaining to the operation of disposal systems. Copies of such records shall be submitted to the state board upon request.

# §5.11 Fees

The state board may establish fees for the issuance and renewal of any permits established under this chapter. All funds collected under this provision shall be credited to the water development account.

# **§5.12** Administrative Enforcement

(1) If the governing board has reason to believe that a violation of any provision of this chapter has occurred, it shall serve written notice upon the violator. The notice shall specify the provision of the code or regulation alleged to be violated, and the facts alleged to constitute a violation thereof, and may include an order that corrective action be taken within a reasonable time.

(2) If, after a hearing under the provisions of section 1.21, the governing board finds that a violation has occurred, it shall affirm or modify its order previously issued, or issue an appropriate order or orders for the prevention, abatement, or control of the condition involved or for the taking of such other corrective action as may be appropriate.

(3) Any order issued under subsection (1) above shall become effective after ten (10) days unless a hearing is requested. However, any order issued after a hearing may prescribe the date by which the violation shall cease by fixing reasonable timetables for necessary action.

(4) If, after a hearing, the governing board finds that no violation is occurring, it shall rescind the order issued under subsection (1) above.

(5) The governing board may enforce its orders by injunction pursuant to the provisions of section 5.14 of this code.

#### **§5.13** Summary Abatement

(1) The governing board may order any person to abate, terminate, modify, or decrease pollution which constitutes, or threatens to become, an immediate and serious hazard to public health, safety, and welfare, or a serious and immediate hazard to fish or wildlife.

(2) Orders issued under this section shall be final and conclusive

unless the affected person requests a hearing pursuant to section 1.21 of this code within ten (10) days after receipt of a copy of the order.

(3) If a hearing is requested, the orders of the governing board shall not be stayed during pendency of the hearing or any review thereof.

## **§5.14** Injunctions

(1) Whenever it shall appear that any person, as defined in section 1.03 (5) of the code, is causing or threatens to cause an impairment of water quality in violation of any order of the governing board, the governing board may institute proceedings for injunctive relief from the [appropriate] court to prevent the continuance of such action.

(2) In a petition for injunctive relief, any previous findings of the governing board after due notice and hearing shall be prima-facie evidence of the fact or facts found therein. The court shall grant the injunction without the necessity of showing a lack of adequate remedy at law upon a showing by the governing board that such person is violating or is about to violate the provisions of this code or is violating or about to violate any order or determination of the governing board with respect to this code.

(3) In such suit, the governing board may obtain injunctions, prohibitory and mandatory, including temporary restraining orders and temporary injunctions as the facts may warrant.

(4) No provision of section 1.22 shall apply to this section.

## **§5.15** Civil Penalties

(1) Whoever causes pollution of the waters of the state which results in harm to fish, or fish food, or which results in other damage, is liable to the state for such damages and the reasonable costs and expenses of the state incurred in tracing the source of the discharge and in restoring the waters to their former condition.

(2) Upon the request of the state board or any state agency or the alleged violator, the governing board may consider and assess these damages. If the amount so assessed is not paid within ninety (90) days, the governing board may institute civil action in the [appropriate] court for a judicial determination of liability and damages.

(3) All funds received by the state board pursuant to this section shall be deposited in the water resources development account.

(4) Nothing herein shall give the governing board the right to bring an action on behalf of a private person. Nothing herein shall prohibit the governing board from proceeding forthwith to obtain a judicial determination of the liability and damages.

## **§5.16 Local Jurisdiction: Conflicts**

No provision of this chapter or any ruling of the state board or a governing board is a limitation:

(1) on the power of any local governmental agency to adopt and enforce additional regulations, not in conflict therewith, imposing further conditions, restrictions, or limitations with respect to the disposal of waste or any other activity which might impair water quality;

(2) on the power of any state or local governmental agency to declare, prohibit, and abate nuisances;

(3) on the power of a state agency in the enforcement or administration of any provision of law which it is specifically permitted or required to enforce or administer; or

(4) on the right of any person to maintain at any time any appropriate action for relief against pollution under the common law.

## Chapter 6

## **§6.01** Definitions

When appearing in this chapter or in any rule, order, or regulation adopted pursuant thereto, the following words shall mean:

(1) Weather modification—Initiating, changing, or controlling, or attempting to initiate, change, or control, the composition, behavior, or dynamics of the atmosphere.

(2) Experimentation and research—Theoretical analysis and exploration, and the extension of investigative findings and theories of a scientific or technical nature into practical application for demonstrative purposes, including, but not restricted to, the production and testing of models, devices, equipment, materials, and processes.

(3) Operation—The performance of weather modification activities entered into for the purpose of producing, or attempting to produce, a certain modifying effect within one geographical area over one continuing time interval.

### **§6.02** Weather Modification Division: Selection of Director

The Weather Modification Division of the Water Resources Board shall be headed by a director who is a member of, or qualified for

professional membership in, the American Meteorological Society, or the Weather Modification Association, or who has at least two years' experience in the field of weather modification. First preference in the selection of the director shall be given to individuals possessing both membership and experience qualifications.

## \$6.03 Weather Modification: Powers and Duties of the State Board

In addition to powers granted it by section 1.06 or other acts authorized by law, the state board may:

(1) issue a license to any applicant who complies with the requirements of section 6.07, and issue a permit to any applicant who complies with the requirements of sections 6.08 and 6.12;

(2) establish advisory committees to advise and make recommendations to the state board and director concerning legislation, policies, administration, research, and other matters relative to weather modification;

(3) set standards for financial responsibility, subject to the limitations imposed by section 6.08;

(4) set standards of care which may be utilized in the judicial determination of negligence liability for weather modification operations, as provided by section 6.16 (3);

(5) make determinations of those operations which constitute extraordinary weather modification operations, and establish criteria for such determinations;

(6) cooperate with public or private agencies, with the federal government and its agents and contractors, and with other states in the conduct of weather modification operations;

(7) cause to be made, by inspectors appointed for that purpose, an examination and inspection of any weather modification operation, such examination or inspection to be governed by the provisions of section 1.06 (3);

(8) subject to available funds, enter into cooperative agreements or contracts with the various counties, cities, water management districts, or any person for conducting weather modification operations.

# \$6.04 Promotion of Research and Experimental Activities Relating to Weather Modification

The state board shall exercise its powers in such a manner as to promote the continued conduct of research and experimentation in the fields specified below by persons or private or public institutions

and to assist in the acquisition of an expanding fund of theoretical and practical knowledge in such fields. To this end the state board may conduct, and make arrangements including contracts and agreements for the conduct of, research and experimentation activities relating to:

(1) the theory and development of methods of weather modification;

(2) utilization of weather modification for agricultural, industrial, commercial, municipal, or domestic purposes;

(3) the protection of life and property during weather modification research or operations.

# §6.05 License and Permit Required for Weather Modification Activities

Except as provided in section 6.06, no person shall engage in activities for weather modification except under and in accordance with a license and a permit issued by the state board.

## **§6.06 Exemptions from License and Permit Requirements**

(1) The state board, to the extent it deems practical, may provide by regulation for exemption from the license requirements of this code:

(a) laboratory research and experiments; and

(b) activities normally engaged in for purposes other than those of modifying the weather.

(2) The state board, to the extent it deems practical, may provide by regulation for exemption from the permit requirements of this code:

(a) laboratory research and experiments;

(b) activities of an emergency character for protection against fire, frost, sleet, fog, wind, or rain; and

(c) activities normally engaged in for purposes other than those of modifying the weather.

(3) Activities, research, or experiments exempted under sections 6.06 (2) (a) and (b) shall be required to comply with the broadcast provisions of section 6.11 (2), the records and reporting provisions of section 6.12, and the evaluation provisions of section 6.13.

## **§6.07** Weather Modification Licenses

(1) If public convenience, interest, or necessity will be served thereby, licenses to engage in weather modification shall be issued to applicants who pay the license fee required and who demonstrate, to

the satisfaction of the state board, competence in the field of meteorology reasonably necessary to engage in weather modification. Such competence may be demonstrated through certification by the Weather Modification Association. If the applicant is an organization, these requirements shall be met by the individual or individuals who are to be in control or in charge of the applicant's operation.

(2) The state board shall issue licenses in accordance with such procedures and subject to such conditions as may by regulation be established. The state board, by regulation, shall establish the license fee, which shall not exceed one hundred dollars (\$100).

(3) No license shall be construed to create any right beyond the terms, conditions, and periods of the license.

(4) Each license shall be issued for five (5) years. Upon the expiration of any license, upon application therefore, a renewal of such license may be granted from time to time for a term not to exceed five (5) years, if the state board finds that public interest, convenience, or necessity would be served thereby and if the license fee is paid. Section 6.07 (1) criteria applicable to the original application are equally applicable toward renewal. No renewal of an existing license shall be granted more than thirty (30) days prior to the expiration of the original license.

(5) No license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such license, to any person except upon application to the state board and upon finding by the state board that the public interest, convenience, and necessity will be served thereby. In acting thereon the state board shall consider whether the public interest, convenience, and necessity might be served by the transfer, assignment, or disposal of the license to a person other than the proposed transferee or assignee.

(6) Proceedings concerning the issuance of licenses shall be conducted in accordance with the provisions of section 1.10.

### **§6.08** Weather Modification Permits

(1) The state board may issue permits in accordance with such procedures and subject to such conditions as it may by regulation establish to effectuate the provisions of this code. The state board shall not grant any permit unless:

(a) It finds that public interest, convenience, and necessity would be served thereby.

(b) The applicant is licensed pursuant to this code.

(c) A sufficient notice of intention is published and proof of publication is filed as required by section 6.11.

(d) The applicant files with the state board proof of ability to respond in damages for liability on account of accidents arising out of the weather modification operations to be conducted by him in an amount sufficient to comply with standards established by the state board, but in no case less than fifty thousand dollars (\$50,000) for bodily injury to or death of one person resulting from any one incident, and five hundred thousand dollars (\$500,000) because of injury to or destruction of property of others resulting from any one incident. Proof of financial responsibility may be given by filing with the state board a certificate of insurance or a bond in the required amount.

(e) The appropriate fee is paid.

(f) The operation based on the permit is in conformity with the State Water Plan.

(2) A separate permit shall be issued for each operation. These permits shall be effective for one (1) year from the date of issuance. The state board normally shall not issue more than one permit for similar activities in any given geographic area.

(3) Permits may be renewed by filing an application with the state board, at least one (1) month before, but not prior to two (2) months before, the expiration of the existing permit. The application for renewal must re-establish compliance with the requirements of this section. However, no fee shall be paid for the renewal of a permit.

(4) No permit shall be construed to create any right beyond the terms, conditions, and periods of the permit.

(5) No permit, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such license, to any person.

(6) The state board, by regulation, shall establish a schedule of fees to accompany the permit application. In preparing this schedule, the state board shall insure that the fee to be paid by each applicant is not less than 1 per cent of the estimated cost of such operation, such cost to be estimated by the state board from the evidence available to it.

(7) Proceedings concerning the issuance of permits, or modifications of their terms, shall be conducted in accordance with the provisions of section 1.10.

# **§6.09** Suspension or Revocation of Licenses and Permits

(1) The state board may suspend or revoke any license or permit if it finds that the licensee no longer possesses the qualifications necessary for the issuance of a new license or permit, or if it finds that the licensee has violated any of the provisions of this code. The permit or license may be temporarily suspended during investigations of suspected violations.

(2) Suspensions, including temporary suspensions, or revocations of licenses or permits shall be subject to judicial review as orders of the state board, in accordance with the provisions of section 1.11. The suspension or revocation shall remain in effect throughout such litigation.

## **§6.10** Notice of Intention

(1) Prior to undertaking any weather modification activities the licensee shall file with the state board and the appropriate water management district or districts and also cause to be published or broadcast a notice of intention. The licensee, if a permit is issued, shall confine the permitted operation substantially within the time and area limits set forth in the notice of intention, unless modified by the state board, and his activities also shall substantially conform to any conditions imposed by the state board upon the issuance of the permit or to the terms of the permit as modified after issuance.

(2) The notice of intention shall set forth at least all of the following:

(a) the name and address of the licensee;

(b) the nature and object of the intended operation and the person or organization on whose behalf it is to be conducted;

(c) the area in which and the approximate time during which the operation will be conducted;

(d) the area which will be affected by the operation as nearly as the same may be determined in advance; and

(e) the materials and methods to be used in conducting the operation.

(3) When practical, the state board may require that section 6.10(2) (d) determinations be based on climatic models and mathematical simulation.

\$6.11 Publication or Broadcasting of Notice of Intention; Filing of Proof of Publication or Broadcast

(1) The licensee shall cause the notice of intention provided for in section 6.10 to be published at least once a week for two (2) con-

secutive weeks in a newspaper having general circulation within any county wherein the operation is to be conducted; if the affected area is located in or includes a county or counties other than the one in which the operation is to be conducted, then such notice shall also be published in a like manner in a newspaper having general circulation within the affected counties.

(2) Where any weather modification effort would require immediate implementation, the state board may waive the publication requirement and require that the licensee cause a summary of facts drawn from the notice of intention to be broadcast at least twice a day for two (2) days over a radio or television station capable of reception within the affected area. If no single station broadcasts throughout the entire affected area, the licensee shall broadcast notices of intention over sufficient stations to encompass the entire area.

(3) Proof of publication or broadcast shall be filed by the licensee with the state board within five (5) days from the date of the last publication or broadcast of notice. Proof of publication shall be by copy of the notice as published, attached to and made a part of the affidavit of the publisher of the newspaper publishing the notice. Proof of broadcast shall be by a copy of the broadcast script, attached to and made a part of the affidavit of the owner or manager of the station broadcasting the notice.

#### **§6.12** Records and Reports of Licensees

(1) Each licensee shall keep and maintain a record of all operations conducted by him pursuant to his license and each permit showing the method employed, the type of equipment used, materials and amounts thereof used, the times and places of operation of the equipment, the name and post office address of each individual participating or assisting in the operation other than the licensee, and such other general information as may be required by the state board —and shall report the same to the state board at the time and in the manner required.

(2) The state board shall require written reports in such manner as it provides, not inconsistent with the provisions of this code, covering each operation for which a permit is issued. It shall also require written reports from such organizations as are exempt from the license and permit provisions of this code.

(3) All information on an operation shall be submitted to the state board before the information on such operation is released to the public.
(4) The reports of all licensees shall be available for public examination.

## **§6.13 Evaluation Statements**

Each licensee shall prepare and maintain an evaluation statement for each operation; within ninety (90) days after the conclusion of any operation, he shall file such evaluation with the state board. Each three (3) months, during the operation of any project which has not been completed, each licensee shall file a report evaluating the activities of the preceding three (3) months.

## **§6.14 Annual Evaluation Reports**

Based upon its official records and data submitted to it by reason of sections 6.12 and 6.13, the state board annually shall cause to be prepared a summary of all current weather modification projects in the state, together with a general evaluation of them.

## **§6.15** Administrative Procedure Waiver

(1) Where any weather modification effort would require immediate implementation, the state board may waive the requirements of the state administrative procedure act, and, except as noted herein, the requirements imposed by sections 1.10 and 6.11 of this code.

(2) In instances of such waiver, the state board shall require compliance with the provisions of section 6.11 (2).

(3) Any party affected by such weather modification effort, and aggrieved by the application of this section, may seek judicial review of the state board's order.

### **§6.16** Liability

(1) Except as provided in sections 6.16 (2) and 6.17, in all weather modification operations nothing in this code shall be construed to impose or accept any liability or responsibility on the part of the state, the state board, or any state officials or employees for any weather modification activities of any person, or to affect in any way any contractual, tortious, or other legal rights, duties, or liabilities between any persons.

(2) The state, for itself and its counties, agencies, and instrumentalities, waives immunity for the torts of officers, employees, or servants committed in the state in the actual performance of a weather modification operation. The state, its counties, agencies, and instrumentalities shall be liable in the same manner as a private individual.

(a) No action may be brought under section 6.16 (2) where the claim arises out of the issuance, denial, suspension, or revocation of, or by the failure to issue, deny, suspend, or revoke, a weather modification permit or license.

(b) Punitive damages shall not be allowed in an action brought under section 6.16 (2).

(3) Except as provided in section 6.17, no person shall in any way be liable for any loss or damage caused by or arising out of a weather modification operation unless such person is negligent through failure to adhere to the standards of care established by the state board. Such person shall not be liable for such negligence without proof of proximate causation of loss.

(a) The state board shall establish criteria in writing setting forth the standards of care upon which such determinations shall be made.

(b) These criteria shall be effective as legislative standards unless revoked by a majority vote of both houses of the legislature within one (1) year of their publication.

(c) Any revisions, deletions, or additions to these standards shall be subject to the publication requirements of section 6.16 (3) (a) and the legislative review requirements of section 6.16 (3) (b).

## **§6.17** Extraordinary Weather Modification Operations

(1) The term "extraordinary operation" refers to any weather modification operation which the state board determines, at the time of permit issuance, has resulted or will probably result in substantial damages to persons or property.

(a) The state board shall establish criteria in writing setting forth the basis upon which such determination shall be made. Such criteria shall be published by the Secretary of State.

(b) Prior to making an extraordinary operation determination, the state board shall make a survey of the causes and probable extent of damage. These surveys, even when the state board determines that the operation does not constitute an extraordinary operation, shall be made available to the public. Such survey, however, should not be admissible evidence in any legal proceeding brought under section 6.16 (3) or section 6.17 (4).

(2) The term "indemnitor" means any insurer with respect to his obligations under a policy of insurance furnished as proof of financial

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protection; any licensee, contractor, or other person who is obligated under any other form of financial protection, with respect to such obligations; and the state board with respect to any obligation undertaken by it in an indemnity agreement entered into pursuant to section 6.17.

(3) The state board is authorized to enter into agreements with other indemnitors to establish coordinated procedures for the prompt handling, investigation, and settlement of claims for extraordinary operation liability. The state board and other indemnitors may make payments to, or for the aid of, claimants for the purpose of providing immediate assistance following an extraordinary operation. Such payments may be made without securing releases, shall not constitute an admission of the liability of any person indemnified or of any indemnitor, and shall operate as a satisfaction to the extent thereof of any final settlement or judgment.

(4) Any person undertaking a weather modification operation, determined to be an extraordinary operation, is liable without proof of fault for injuries and damages arising out of or resulting from the extraordinary operation, other than:

(a) an injury, compensable under a state or federal workmen's compensation act, of any employee of such person; or

(b) loss of or damage to such person's property that is used in connection with the modification operation.

(5) Each permit issued under section 6.08 may have as a condition of the permit a requirement that the permittee have and maintain financial protection of such type and in such amounts as the state board shall require in accordance with section 6.17 (6) to cover extraordinary operation claims. Whenever such financial protection is required, it shall be a further condition that the permittee execute and maintain an indemnification agreement in accordance with section 6.17 (7). The state board may require, as a further condition of issuing a permit, that an applicant waive any immunity from public liability conferred by federal or state law.

(6) The amount of financial protection required shall be the amount of liability insurance available from private sources, except that the state board may establish a lesser amount on the basis of criteria set forth in writing, which it may revise from time to time, taking into consideration such factors as the following: (a) the cost and terms of private insurance; (b) the type, size, and location of the probable operations and other factors pertaining to the hazard; and (c) the nature and purpose of the probable operations. Such financial protection may include private insurance, private contractual indemnities, self insurance, other proof of financial responsibility, or a combination of such measures.

(7) The state board shall, with respect to permits for which it requires financial protection, agree to indemnify and hold harmless the permittee from liability, arising from extraordinary operations, which is in excess of the level of financial protection required of the permittee by sections 6.17 (5) and 6.17 (6). The aggregate indemnity for all persons indemnified shall not exceed \$100,000,000 including the reasonable costs of investigating and settling claims and defending suits for damage. Such a contract of indemnification shall cover liability arising out of or in connection with extraordinary operations.

(8) In administering the provisions of this section, the state board shall use, to the maximum extent practicable, the facilities and services of private insurance organizations, and the state board may contract to pay a reasonable compensation for such services.

(9) The agreement of indemnification may contain such terms as the state board deems appropriate to carry out the purposes of this section. Such agreement shall provide that, when the state board makes a determination that the state will probably be required to make indemnity payments under this section, the state board may collaborate with any person indemnified, may approve the payment of any claim under the agreement of the indemnification, and may appear through the attorney general on behalf of the state to settle or approve the settlement of any such claim on a fair and reasonable basis with due regard for the purposes of this code. Such settlement may include reasonable expenses in connection with the claim incurred by the person indemnified.

(10) With respect to any extraordinary operation the state board may incorporate provisions in indemnity agreements with permittees and may require provisions to be incorporated in insurance policies or contracts furnished as proof of financial protection under sections 6.17 (5) and 6.17 (6) which waive (a) any issue or defense as to conduct of the claimant or fault of persons indemnified, (b) any issue or defense as to charitable or governmental immunity, (c) any issue or defense based on an "Act of God" or intervention by a third party, and (d) any issue or defense based on any statute of limitations if suit is instituted within three (3) years from the date on which the claimant first knew, or reasonably could have known, of his injury or damage and the cause thereof. The waiver of any such issue or defense shall be effective regardless of whether such defense may otherwise

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be deemed jurisdictional or relating to an element in the cause of action. When so incorporated, such waivers shall be judicially enforcible in accordance with their terms by the claimant against the person indemnified. Such waivers shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages, nor shall such waivers apply to injury or damage to a claimant or to a claimant's property which is intentionally sustained by the claimant or which results from an extraordinary operation intentionally and wrongfully caused by the claimant. The waivers authorized in this subsection shall, as to indemnitors, be effective only with respect to those obligations set forth in the insurance policies or the contracts furnished as proof of financial protection and in the indemnity agreements. Such waivers shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under the terms of insurance policies or contracts furnished as proof of financial protection or indemnity agreements.

# \$6.18 Acceptance of Gifts, Grants, and Appropriations: Weather Modification Fund

(1) There is hereby established a continuing fund in the Water Resources Development Account to be known as the Weather Modification Fund. All weather modification license and permit fees paid to the state board shall be deposited in such fund. This fund shall not revert at the close of any fiscal year, but shall accumulate.

(2) The state board may, subject to any limitations otherwise imposed by law, receive and accept in the name of the state any weather modification funds which may be offered or become available from federal grants or appropriations, private gifts, donations, or bequests. Such funds shall be deposited in the Weather Modification Fund.

(3) Legislative appropriations for administration of chapter 6 of this code, or for weather modification operations, shall be credited to the Weather Modification Fund.

(4) In accord with the powers granted to the state board, it may expend the Weather Modification Fund to administer this code, to sponsor experimentation through direct grants or contracts, and to finance nonexperimental weather modification operations conducted by the state board.

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# Chapter 1

# Administrative Structure and Operation

Drastically increased demands upon the nation's water resources are predicted in the coming years as a result of population growth, increased per capita use of water, and the progressive concentration of the population in urban areas.

The population of the United States has grown from 76 million in  $1900^1$  to 204 million in  $1970^2$  and projections indicate that this trend is likely to continue.<sup>3</sup> The significant increase in average life expectancy during the twentieth century will in all probability offset the impact of a reduced birth rate, and insure a continued net increase in population in the foreseeable future.<sup>4</sup> A population of 295 million has been forecast by the year 2000.<sup>5</sup>

Per capita use of water is also increasing substantially. In 1900, total water use in America amounted to only 40 billion gallons per day,<sup>6</sup> but by 1965, the figure for daily use of water had risen to 360 billion gallons.<sup>7</sup> On a per capita basis this is an increase from 526 gallons per person in 1900 to 1,893 gallons per person in 1965. At present growth rates this per capita figure will triple by the year 2000.<sup>8</sup> This may be attributed in large part to the significant industrial growth of the United States during the twentieth century. In the period 1900–1950, industrial production increased about 700 per cent, a figure far in excess of the population growth rate.<sup>9</sup> Since this

1. STATISTICAL ABSTRACT OF THE UNITED STATES, U.S. DEPT. OF COMM. BUREAU OF THE CENSUS 5, table 2 (1970).

2. Id.

3. Twice as Many in 36 Years, U.S. NEWS & WORLD REPORT 29 (November 9, 1970); STATISTICAL ABSTRACT OF THE UNITED STATES, supra note 1, at 6, table 3.

4. STATISTICAL ABSTRACT OF THE UNITED STATES, *supra* note 1, at 6, table 3, pp. 44, 47, table 53.

5. Stein, Problems and Programs in Water Pollution, 2 NAT. RES. J. 388, 392 (1962).

6. J. WRIGHT, THE COMING WATER FAMINE 19 (1966).

7. Id.

8. *Id*.

9. Stein, supra note 5, at 394.

period, industrial growth has continued to rise dramatically, and by 1980 production will be more than double the 1950 figure.<sup>10</sup> This increased industrial production will necessarily involve greater water demands by industry, and since industrial water use is presently concentrated in the East,<sup>11</sup> water shortages may be expected to occur in that region.

Another object of concern is the trend toward urban concentration. It is estimated that by 1980 more than 90 per cent of the population will live in cities and towns,<sup>12</sup> and more than half will live in urban areas of more than 50,000 persons.<sup>13</sup> Urbanization will put a severe strain on the nation's water resources, since the water-holding capacity of an area is reduced when rural land is converted into high-density living areas. Paved surfaces retain heat, increase evaporation, and reduce recharge areas for replenishment of ground water resources.<sup>14</sup>

One solution to the water shortage problem is to obtain water from new sources. The boldest and most ambitious proposal is the North American Water and Power Alliance.<sup>15</sup> This project would result in the damming of various rivers in Alaska and the Canadian Yukon and transporting the waters of these rivers into a largely man-made 500-mile-long reservoir, along the Rocky Mountain Trench. This would involve construction of a series of connecting tunnels, canals, lakes, dams, and lifts. An estimated 70 million to 150 million kilowatts of electric power would also be generated.<sup>16</sup> NAWAPA would provide water to seven provinces of Canada, thirty-three states, and three northern states of Mexico. In all, 110 million acre-feet of water would flow through the system each year with the maximum potential estimated at 250 million acre-feet or about 36 trillion gallons per year.<sup>17</sup>

Even if the NAWAPA project is successfully completed, however, additional measures toward more efficient management of water resources must be implemented at all levels of government. This will require a determination of needs and capabilities, and the formulation of long-range plans for the development of all water resources and related land resources within a hydrologic unit. Regulating stream

10. Id.

11. Id. at 388-89.

12. Id. at 393.

13. Id.

14. F. Moss, The Water Crisis 4-5 (1967).

15. NAWAPA: A Continental Water System (Symposium), 23 BULLETIN OF THE ATOMIC SCIENCES 8 (1967).

16. J. WRIGHT, supra note 6, at 221.

17. Id.

flow, improving water quality, increasing the efficiency of water use, expanding the use of underground storage, and increasing the available water supply by such measures as desalinization, weather modification, and reduction of evaporation losses<sup>18</sup> must be considered in such planning.

## State Water Use Planning

The federal government has already increased its planning for multipurpose water use. The Water Resources Planning Act<sup>19</sup> provides for coordination of federal water projects through a Water Resources Council consisting of the Secretary of the Army, the Secretary of Agriculture, the Secretary of the Interior, the Secretary of Health, Education, and Welfare, and the Chairman of the Federal Power Commission.<sup>20</sup> The council prepares a biennial report on the adequacy of the nation's water supplies and a review of all river-basin development plans. The act also has authorized planning for individual river basins and provides federal assistance to states for water planning.

However, federal efforts alone are not sufficient. National water development goals do not always coincide with those of the states. Federal water projects deal primarily with the control, storage, and release of surface water for flood control, power generation, navigation, and quality control. Although these programs may meet the needs of some states, they may not be entirely responsive to those of others.<sup>21</sup> The states as the intermediate level of government with sovereign powers and with primary responsibility for intrastate water regulation have an important role in the planning process.<sup>22</sup> Since water management often must be directed toward the hydrologic, economic, and social needs of comparatively small areas, it is more likely to be responsive to state policies.

Some federal projects, such as those dealing with small watersheds, operate on a basis of close cooperation with state and local interests. The Watershed Protection and Flood Prevention Act of 1954, for

18. Lewis, Developing a Comprehensive Water Resources Plan for the Wabash Basin, in REGIONAL DEVELOPMENT AND THE WABASH BASIN 166, 167 (R. Boyce ed. 1964).

19. 42 U.S.C. §§1962-1962(d)-3 (1970). 20. 42 U.S.C. §1962 (a) (1970); F. Moss, supra note 14, at 178; Note, The Water Resources Planning Act of 1965—An Experiment in Creative Federalism, 42 WASH. L. REV. 952 (1967).

21. Metzler, Planning for State Water Resources Administration, 58 J. AM. WATER WORKS ASS'N 793, 794 (1966).

22. Smith, Total Management of Water Resources, 59 J. AM. WATER WORKS Ass'n 1335, 1337 (1967).

example, places at the local level the full responsibility for initiating watershed projects.<sup>23</sup> The local organization shares in the cost and owns, operates, and maintains the projects when completed. Local interests are also responsible for developing the watershed plan, although projects must be approved by the state government as well.

Regulation of water use remains a primary state function.<sup>24</sup> This requires state planning for many purposes including enforcement of existing laws, enactment of new legislation, coordination of local regulatory efforts, and administration of consistent state regulatory policies.<sup>25</sup>

Unfortunately, state planning and resource management agencies are frequently understaffed and lacking in sufficient expertise to carry out meaningful planning responsibility. As a result, state agencies often conduct little more than token reviews of plans prepared by local, private, or federal agencies.<sup>26</sup> It is essential that state agencies be staffed to discharge their water resources planning responsibilities competently. Failure of the states to respond to this challenge can only result in inadequate and uncoordinated water management.

## REQUIREMENTS OF A PROPER STATE WATER RESOURCES Planning Program

## Centralized Planning Responsibility

Planning requires financial investment, a legal framework, and a program of public education,<sup>27</sup> but, in addition, the state administrative structure must be constituted so that planning responsibility is concentrated within one agency. Lack of coordinated planning in the past often resulted in state programs which concentrated on one type of water problem to the exclusion of other phases of the hydrologic cycle.<sup>28</sup> At the federal level, Senator Frank Moss has proposed the creation of a Department of Natural Resources, placing all federal water management agencies under one head in order to formulate

23.16 U.S.C. §§1001-7 (1970); 33 U.S.C. §701 (1970); see Morgan, The Small Watershed Program, 22 LAW & CONTEMP. PROB. 405 (1957).

24. See Smith, supra note 22, at 1336.

25. Id. at 1337.

26. Marts, Conflicts in Water Use and Regional Planning Implications, in REGIONAL DEVELOPMENT AND THE WABASH BASIN 145, 155-56 (R. Boyce ed. 1964).

27. Metzler, supra note 21, at 800.

28. F. MALONEY, S. PLAGER, & F. BALDWIN, WATER LAW AND ADMINISTRA-TION—THE FLORIDA EXPERIENCE §131.1 (1968) (hereinafter cited as MALONEY, PLAGER, & BALDWIN).

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a sound national water resources program.<sup>29</sup> As will be discussed later, a planned water resources program can be most effectively implemented if the planning agency also has authority over pollution control as well as regulation of consumptive uses of water. This extremely important factor is frequently being overlooked today when new pollution control agencies are being established.

## Planning on a Scientific Basis

The interrelationship of the various forms of water requires planning on the basis of hydrologically interrelated units.<sup>30</sup> Planners must take cognizance of the effect on the hydrologic cycle of water pollution, use of land resources, drainage of ground water recharge areas, and urban development. The geographical boundaries of the water resource agency, therefore, should be coterminous with a hydrologic unit since political boundaries frequently do not reflect hydrologic realities.<sup>31</sup>

Water management demands a continuing search for new technology in order to cope with changing water problems. For example, technology may soon allow urban runoff, now viewed as deleterious, to be used as a productive source of water for recreational development or even urban water supply.<sup>32</sup> Science and technology must also fill the gaps in existing knowledge. For example, proper water management requires a greater awareness of the interactions within associated ecologic and social structures. Basic economic and population research is also necessary to predict the socioeconomic effect of various water use patterns and regulations in order that proper physical development and management alternatives may be chosen.<sup>33</sup>

#### Coordination of Water Quality and Consumptive Use Planning

Water resource planners must recognize the relationship between water pollution and water use and should consider disposal of municipal and industrial waste as a major consumptive use of water. Traditional consumptive uses of water in municipalities involve far less water use than the disposal of waste through sewage systems;<sup>34</sup> industry likewise consumes relatively little water, but uses large quan-

29. F. Moss, supra note 14, at 259, 274-75.

30. MALONEY, PLAGER, & BALDWIN §131.2.

31. Bryan, Water Supply and Pollution Control Aspects of Urbanization, 30 LAW & CONTEMP. PROB. 176, 192 (1965).

32. Smith, supra note 22, at 1339.

33. Metzler, supra note 21, at 794.

34. MALONEY, PLAGER, & BALDWIN §131.4.

tities for waste disposal.<sup>35</sup> Since disposal of wastes by municipalities and industry often makes the water unusable for other purposes, whether consumptive or recreational, such pollution must be recognized as one of the most highly consumptive uses of the resource.

Water pollution is not limited to streams. Potentially serious pollution problems are beginning to develop in connection with ground water supplies in some areas.<sup>36</sup> Drainage operations for agricultural or mining activities have contributed to this condition, and overdrainage has already resulted in salt water intrusion in coastal areas.<sup>37</sup> The states must therefore include all forms of water quality maintenance and improvement as prominent elements in their planning programs.

#### Regulation of Consumptive Uses as a Planning Tool

Both federal and state planning efforts have emphasized the development of new sources of supply. Perhaps the most ambitious state water development project is the California Water Plan which involves the biggest transfer of water yet attempted on this continent.<sup>38</sup> The plan consists of five projects on the Upper Feather River. These projects will supply 1.3 billion gallons daily; half of this will be used in the Metropolitan Water District of Southern California, and the remainder will go to central California.<sup>39</sup> The plan extends to water projects constructed by state, local, and federal agencies and private interests. It also provides flood control, water storage, and local hydroelectric power for northern California.<sup>40</sup>

Water resources management, however, also includes regulation of consumptive uses and reallocation of water to more productive uses. The actions of private parties affecting water resources must be regulated to avoid inconsistency with the policies of the planning agency.<sup>41</sup> A system of consumptive water use permits coordinated with a program of comprehensive planning is the most effective means of implementing planning objectives and directing development along planned lines. This would enable state officials to prevent overdevelopment and competition for water, requiring low value users to seek

35. Id.

36. F. Moss, supra note 14, at 63-64.

37. J. WRIGHT, supra note 6, at 115.

38. Id. at 217-18; H. Rogers & A. Nichols, 1 Water for California §§55-89 (1967).

39. F. Moss, supra note 14, at 159-60.

40. Id. at 160.

41. Trelease, Policies for Water Law: Property Rights, Economic Forces and Public Regulation, 5 NAT. RES. J. 1, 45 (1965).

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new supplies.<sup>42</sup> Underdevelopment as well as overdevelopment can be avoided by a choice of the better use when pending applications for water use relate to the same supply and the available water is not sufficient for both.<sup>43</sup> Also, when a large development project is foreseeable, smaller, less efficient projects can be vetoed in favor of the greater benefits promised by the later, larger one.44 In some areas continuation of present water use patterns will eventually exhaust available supplies despite full regulation of consumptive uses.<sup>45</sup> Reallocation of water from agricultural to industrial, municipal, and recreational uses can also increase development potential of some areas and should be considered as a possible alternative where additional water supplies are not readily available. Reallocation of this sort, however, requires efficient mechanisms for the transfer of water from lower to higher value uses. This means that water must be transferred to industrial and urban uses, and water devoted to agricultural uses must be applied to the most productive lands and crops.<sup>46</sup> Long-range plans must not only anticipate such changes in water use patterns, but must actually induce transfers to higher value uses.

# Common Law Riparianism and Prior Appropriation— Their Relationship to Long-Range Planning in the Eastern United States

Does the western prior appropriation system of water rights (under which, simply stated, the first user of water has a right, as against later users, to continue to use the same amount of water in perpetuity,<sup>47</sup> or to transfer his right in the marketplace if he sees fit to do so<sup>48</sup>) form a better base for sound long-range eastern water law development than the reasonable use doctrine currently promulgated by the courts of many of the eastern states?<sup>49</sup> There are those who

42. See generally Harris, Water Allocation under the Appropriation Doctrine in the Lea County Underground Basin of New Mexico, in The Law of WATER ALLOCATION IN THE EASTERN UNITED STATES 155 (D. Haber & S. Bergen eds. 1958).

43. Trelease, supra note 41, at 44.

44. Id. at 45.

45. Kneese, Economic and Related Problems in Contemporary Water Resources Management, 5 NAT. Res. J. 236, 239 (1965).

46. See N. WOLLMAN, THE VALUE OF WATER IN ALTERNATIVE USES (1962). 47. See J. Sax, Water Law, Planning & Policy 2-3 (1968).

48. Trelease and Lee, Priority and Progress—Case Studies in the Transfer of Water Rights, 1 LAND & WATER L. REV. 1 (1966); Smith, The Rural-Urban Transfer of Water in California, 1 NAT. RES. J. 64, 65 (1961).

49. For statements of the reasonable use doctrine, see Sax, supra note 47; MALONEY, PLAGER, & BALDWIN §72.4; RESTATEMENT (FIRST) OF TORTS, §§851-

think that it does, and they have urged its adoption in a number of eastern states since World War II. At least nine eastern states, including Arkansas,<sup>50</sup> Georgia,<sup>51</sup> Florida,<sup>52</sup> Michigan,<sup>53</sup> Mississippi,<sup>54</sup> North Carolina,<sup>55</sup> South Carolina,<sup>56</sup> Wisconsin,<sup>57</sup> and, most recently, West Virginia,<sup>58</sup> have considered the desirability of switching to an appropriative type system creating vested water rights, but only Mississippi has adopted such an approach;59 the others have all rejected it.<sup>60</sup> The authors agree that a switch from riparianism to prior appropriation is not a desirable step for eastern states to take at this time. They believe it undesirable to suddenly afford prior users in the East, simply on the basis of their existing uses, the rights and benefits that would result from legislative adoption of the prior appropriation doctrine. They recognize the argument that application of the rule of reasonable use could result in uncompensated transfers of the means of production of wealth. That argument is based on the fundamental assumption that, in every case, one who introduces a new use of water should be required to pay a previous user if the latter is deprived of any portion of his prior use by the former. This is the basic economic argument in support of the doctrine of prior appro-

54 (1939). The framers of the reasonable use doctrine of the First Restatement supported that doctrine with authorities from twenty-five states (see Appendix to Tentative Draft #14 RESTATEMENT [FIRST] OF TORTS 120-23).

50. Rejected. S.B. 69, 60th Sess., Ark. G.A. (1955).

51. Study recommendation not adopted. See INSTITUTE OF LAW AND GOV-ERNMENT, A STUDY OF THE RIPARIAN AND PRIOR APPROPRIATIVE DOCTRINES OF WATER LAW (School of Law, Univ. of Ga. 1955).

52. Rejected by Legislative Study Commission. See Fla. WATER RESOURCES STUDY COMM'N, FLORIDA'S WATER RESOURCES, A REPORT TO THE GOVERNOR AND THE 1957 LEGISLATURE 14, 15 (1956).

53. Study recommendation not adopted. See THE LAW OF WATER ALLOCA-TION IN THE EASTERN UNITED STATES 49–70, 441–90 (D. Haber & S. Bergen eds. 1958) (sets forth and discusses the proposed statute).

54. Adopted. MISS. CODE ANN. §5956-04 (Supp. 1971).

55. Rejected. H.B. 298, S.B. 153, N.C.G.A. (1955).

56. Rejected. H.B. 1085, S.B. 43, S.C.G.A. (1956).

57. Proposal not adopted. See discussion in Coates, Present and Proposed Legal Control of Water Resources in Wisconsin, 1953 Wis. L. REV. 256.

58. The veto of appropriative type legislation in West Virginia was a topic of discussion at the Environmental Law Symposium, May 23-24, 1970, Morgantown, W.Va.

59. MISS. CODE ANN. §5956-04 (Supp. 1971). Unsatisfactory results have been noted by Professor William Champion, a University of Mississippi water law expert. Champion, *Altering a System of Water Rights—Look Before You Leap*, in INSTITUTE OF WATER RESOURCES RESEARCH, LECTURES ON LAW IN RELATION TO WATER RESOURCES USE AND DEVELOPMENT 26 (Univ. of Conn. 1967).

60. See materials cited notes 50-53, 55-58 supra.

priation. It has great surface appeal. Others argue that the increased certainty concerning water rights under the appropriation system encourages investment and maximizes the beneficial use of water, whereas the uncertainties inherent in the rule of reasonable use tend to discourage such investment.<sup>61</sup>

However, other factors should be considered in comparing these two systems. The protection afforded the first user may well result in the perpetuation of what has become an economically unsound use. In connection with irrigation, for example, western experience indicates that in many cases the effect of prior appropriation is to waste water that otherwise could be put to beneficial use. The earliest settlement of western valleys frequently occurred in downstream areas, with the result that senior appropriators are located there. The streams supplying these areas often pass through arid regions where high temperatures and parched soil exact a heavy toll in evaporation and seepage losses. In the Frenchman's Creek area of Colorado, for example, it is necessary to reduce upstream pumping by 100,000 acrefeet of water per year to protect downstream uses of 15,000 acre-feet, and at Beaver Creek a decrease of pumping upstream by 20,000 acre-feet would be necessary to protect a downstream flow of 1,000 acre-feet.62

In addition, once an appropriator has begun using a specific amount of water, he will frequently continue to draw that amount even though it may be considerably more than he really needs, since failure to do so may result in loss of his appropriative right to the excess. In such cases the system encourages waste and discourages use of new irrigation techniques requiring less water.

Moreover, in the West the appropriation doctrine has tended to "freeze" the water to specific tracts of land. In theory the right to use the water is freely transferable, but in the past the unwillingness of landowners to sell their water rights and thus make their land worthless has led to great resistance to such transfers. Some western areas where, for decades, water has been primarily used for irrigation have now come to possess a definite potential for industrial development if substantial amounts of water already appropriated for irrigation can be made available to industry, but the irrigators have been extremely

61. Busby, American Water Rights Law: A Brief Synopsis of Its Origins and Some of Its Broad Trends with Special Reference to the Beneficial Use of Water Resources, 5 S.C.L.Q. 106 (1952).

62. See Trelease, A Model State Water Code for River Basin Development, 22 LAW & CONTEMP. PROB. 301, 315 (1957).

reluctant to make such transfers. The President's Materials Policy Commission warned the West in its 1952 report that "it must soon decide whether its future must be sacrificed by its antiquated priorities systems in water use."<sup>63</sup> Protection of earlier and less efficient industrial uses by affording almost absolute protection of prior users through the adoption of prior appropriation principles could well have the same results in the East. The obstacles it would present to reallocation of water to more important uses could be serious.

This is not to say that the rule of reasonable use presents an ideal solution to the problems of water allocation either. The major criticism of the reasonable use approach relates to the element of uncertainty associated with the reasonable use of water for nondomestic purposes. Because the reasonableness of each use is determined by the needs of other riparians, unforeseen conditions arise when others commence or enlarge uses despite long nonuse of their rights. This uncertainty is increased in most eastern jurisdictions by lack of provision for administrative controls and decision-making authority, with the result that the extent of a riparian's right of reasonable use can be determined only by litigation. Recognizing their lack of expertise and the inefficiency of a case-by-case approach, the courts have been reluctant to become involved. In addition, the numerous courts are structurally not as capable of uniformity in the application of the law as a single centralized agency would be.

As population growth and modern technological developments in both agriculture and industry have been making increasingly greater demands on eastern water supplies, the problem of maintaining streamflows and ground water levels has assumed increasingly greater importance. Concern over the adequacy of existing laws to cope with emerging water resource problems is leading many executive and legislative study committees to propose new methods to deal with the problem. The legislatures are creating administrative authorities in a number of eastern states, with varying powers to grant permits authorizing the withdrawal of water from streams, and thus to provide a means of regulation of existing and future water uses.

Such permit systems possess at least three advantages over the common law method of rights determination: (1) the agency makes its decision before a dispute has erupted into litigation, whereas a court generally can act only after such a dispute arises; (2) the agency makes its decision in light of all water uses and users, and is

63.5 U.S. President's Materials Policy Commission, Resources for Freedom 94 (1952).

able to consider the public interest, whereas a court is often limited to the litigants before it; and (3) members of the decision-making board, unlike judge or jurors, are experts on water, and their decisions can be made with long-range plans for the wise use and conservation of water resources in mind.

It may be argued that most western states have long used administratively operated permit systems, and the fact that eastern jurisdictions are increasingly turning to such systems to replace the common law reasonable use approach is an argument that the western approach is demonstrably superior.

But the need for administrative controls in the East as the demand for water approaches the limits of available supply does not necessarily mean that it is desirable to adopt also the western approach of protecting the earliest user. The ideal permit system can strike a measure of balance between prior appropriation and the doctrine of reasonable use. It can allow the permit holders some certainty by reason of their permits, and assure the public a degree of flexibility by making the permits subject to periodic expiration and review. This compromise, which has been statutorily adopted in Iowa,<sup>64</sup> appears workable and more beneficial to the welfare of all the community.

This is the approach advocated by the Commissioners on Uniform State Laws in the Model Water Use Act. As stated in the commentary to section 406 of that act, "This limitation [on the length of permits] insures re-evaluation at periodic intervals of the beneficial characteristic of the permitted use."<sup>65</sup> A similar limitation is found in the Model Water Code.<sup>66</sup>

It would be most unfortunate for eastern legislatures to adopt a rule which would tend to freeze water rights through the creation of vested rights in the first user at the very time when other eastern jurisdictions are beginning to re-evaluate their systems of water allocation in the light of modern technological demands and population growth. The recognition of such vested rights in the first user has been said to "seriously impede a high level of beneficial use of a state's water resources,"<sup>67</sup> and to be a "serious legal barrier to wise water development."<sup>68</sup>

64. IOWA CODE ANN. §455A.20 (Supp. 1971).

65. MODEL WATER USE ACT §406 and Comment (1958).

66. MODEL WATER CODE §206 and Commentary.

67. Fisher, Western Experience and Eastern Appropriation Proposals, in THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 75, 94 (D. Haber & S. Bergen eds. 1958).

68. Englebert, Political Aspects of Future Water Resources Development in

While the concept of protecting the first users in perpetuity was developing out of the customs of the miners during the California gold rush, on the frontier principle of "first come, first served," no such development occurred during the parallel gold rush in Australia. In that country the colonial government of Victoria allowed no period of legislative inaction in which the customs of the miners could develop into a recognizable body of legal principles. Government licenses to supply water for gold mining purposes were issued and supplied the same mining needs as the California doctrine of prior appropriation, but the licenses were for a period of fifteen years rather than in perpetuity. The Victoria government was, therefore, in a position to plan and coordinate the water development of the country in a way not possible in the American West.<sup>69</sup>

In these days of emphasis on conservation of natural resources, another criticism of the appropriation approach is worth noting. Adoption of the appropriative principle does not lead to conservation of water resources. It supports the rugged individualist theory that ignores the needs of all of society, and not the interest-of-the-public principle which should be applied to this great natural resource. If one user can put an entire stream to his beneficial use, he can acquire the exclusive right to the use of the water of that stream, a vested right continuing as long as he puts the water to such use. Utilization, rather than conservation, is the guiding principle, and the devil take the hindmost. Big industry in the East would be the big winner from the adoption of such a principle, to the exclusion of other very valid interests.

A further telling criticism of the priority approach is that, due to its oversimplification, it does not provide an adequate tool for establishing an entire complex of state water law and policy. "It contributes nothing toward answering the question 'What is the best use?" "<sup>70</sup> A working team of hydrologists, biologists, engineers, economists, political scientists, and lawyers could best answer that question. The reasonable use doctrine provides the flexibility within which such a team can work. The priorities approach does not.

the West, in WESTERN AGRICULTURAL ECONOMICS RESEARCH COUNCIL, COM-MITTEE ON ECONOMICS OF WATER RESOURCES DEVELOPMENT, Report no. 1, at 85, 89 (1953).

<sup>69.</sup> See Clark and Renard, The Riparian Doctrine and Australian Legislation, 7 MELBOURNE U. L. REV. 475, 480-87 (1970).

<sup>70.</sup> See Ellis, Beuscher, Howard, and DeBraal, Water-Use Law and Administration in Wisconsin, §20.01b (1970).

Retention for the present of the reasonable use approach of balancing the utility of the defendant's use against the gravity of the harm to existing uses will provide the flexibility necessary to allow the eastern states to adopt sound plans for the overall development, administration, and conservation of their water resources without being shackled with the problems created by the adoption at this late date of rules protecting existing uses in perpetuity, no matter how antiquated those uses may become.

**§1.01** Model Water Code

This act shall be known and cited as the Model Water Code.<sup>71</sup>

**§1.02** Declaration of Policy

(1) Recognizing that the waters of the state are the property of the state and are held in public trust for the benefit of its citizens, it is declared that the people of the state as beneficiaries of this trust have a right to have the waters protected for their use.

COMMENTARY. Scientists have long recognized that water resources are interrelated and normally pass through various stages in the hydrologic cycle.<sup>72</sup> Atmospheric water falls to earth as precipitation, flows over land as diffused surface water, runs into surface water courses, collects in lakes and ponds, percolates into the ground water supply, slowly moves into the ocean, and becomes tidal water. Finally, evaporation from the land and ocean, combined with transpiration, returns the water to the atmosphere where the cycle is repeated.<sup>73</sup> Although scientists view the hydrologic cycle as a continually changing entity, the legal process has attempted to fractionalize this ever continuing cycle into correlative rights and duties applicable to specific persons who control a body of water for only a short period of the total cycle. But the courts have also realized that rights in water were not generally defined as strict property rights but rather only as usufructuary rights, such as a right to reasonable use.<sup>74</sup> This section of the Model Water Code applies the concept of the public trust doctrine to all waters

71. See generally MODEL WATER USE ACT §702 (1958).

72. See, e.g., Foley, Water and the Laws of Nature, 5 KAN. L. REV. 492 (1957); Black, Basic Concepts in Ground Water Law, 39 J. AM. WATER WORKS Ass'N 989 (1947); Thompson & Fiedler, Some Problems Relating to Legal Control of Use of Ground Waters, 30 J. AM. WATER WORKS Ass'N 1049 (1938). 73. MALONEY, PLAGER, & BALDWIN §10.

74. Maloney, Judicial Protection of the Environment: A New Role for Common-Law Remedies, 25 VAND. L. REV. 145 (1972). of the state as a means of authorizing the government to protect such waters in all phases of the hydrologic cycle.

The public trust doctrine had its inception in the case of *Illinois* Central R. R. v. *Illinois*<sup>75</sup> in which the Supreme Court of the United States took the position that the title of the state of Illinois to the land underlying the navigable waters of Chicago harbor was "a title different in character from that which the [s]tate holds in lands intended for sale."<sup>76</sup> The Court then held that the Illinois legislature did not have the power to convey these lands to the Illinois Central Railroad in violation of the trust.<sup>77</sup> Professor Sax argues that the trust is not limited to interests in submerged lands but is available to protect the interest of the public in such common properties as "the seashore, highways, and running water..."<sup>78</sup> Indeed, he believes it extends beyond conventional applications to "controversies involving air pollution, the dissemination of pesticides, the location of rights of way for utilities, and strip mining or wet land filling on private lands...."<sup>79</sup>

The public trust concept provides a means for the revitalization of water law through recognition that state authorities and private citizens have a duty to other citizens to protect the *res* of the trust.<sup>80</sup> The trust concept focuses on correlative rights and duties in the handling and consumption of water, not simply as they affect local riparian owners, but rather as these rights and duties affect the total citizenry of the state as the beneficiaries of the trust.

# Supporting Federal Authorities for the Application of the Trust Doctrine

In Georgia v. Tennessee Copper Co.<sup>81</sup> the Supreme Court of the United States held that a state in its capacity as a quasi-sovereign entity has an interest independent of and beyond all legal titles in "all the earth and air within its domain."<sup>82</sup> Although the Court did not specifically men-

75.146 U.S. 387 (1892).

76. Id. at 452.

77. Id. at 452-55.

78. Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 MICH. L. REV. 471, 475 (1970).

79. Id. at 556-57.

80. Sax argues that this was the basis for the standing of the citizens in Gould v. Greylock Reservation Comm'n, 350 Mass. 410, 215 N.E. 2d 114 (1966) to question the right of the commission to lease a substantial portion of the reservation for development as a ski resort to be operated as a commercial enterprise. *Id.* at 493.

81.206 U.S. 230 (1907).

82. Id. at 237.

#### Administrative Structure and Operation

tion water, the decision may well be interpreted today to include water within the categories in which the state has quasi-sovereign rights, for when the case was decided, water pollution did not threaten the wellbeing of society as it does at this time. The Court further states that the state "has the last word as to whether its mountains shall be stripped of their forests and its inhabitants shall breathe pure air."<sup>83</sup> The tenor of such statements is that the Court recognizes that the states have an important interest in preserving their resources in their roles as quasisovereign entities. This interest has been described as a *Parens Patriae* interest,<sup>84</sup> signifying the state's duty to protect the resources within its boundaries for the common good of its citizens. The *Tennessee Copper Company* case gives federal recognition to the public trust doctrine. Moreover, the public easement in navigable waters could easily be judicially broadened to an easement in the public not to have riparian owners pollute these bodies of water.

# The Extension of the Public Trust Doctrine to Waters Which Are Neither Legally Nor Factually Navigable

A cogent argument for subjection of nonnavigable water bodies to the public trust is that the waters within these bodies are not static and permanent but will eventually become a part of navigable streams through the hydrologic cycle. These waters, through the hydrologic cycle (evaporation, runoff, and percolation), will have a substantial effect on the amount of water available in, as well as the amount of pollution which will eventually find its way into, the navigable waters of the state. Thus, they too should be held within the public trust with every citizen as its beneficiary. This is not to say the state effects a taking or condemnation of such property, but rather that the state requires that riparian owners follow minimal procedures to ensure that their actions do not endanger waters held in trust for the public.

#### Why Implement the Public Trust Doctrine?

The public trust concept provides the legal underpinning for a viable enforcement procedure to safeguard a transient natural resource such as water. Water, as a resource, cannot be described as being permanently situated within any particular boundaries. Since no one citizen can permanently own the state's water resources or totally deny other

#### 83. Id.

84. Telephone conversation between Professor Maloney and Professor Joseph Sax, March 6, 1971. See generally Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 MICH. L. REV. 471 (1970).

citizens the right to use them, water resources do not fall within the classic definition of property rights. Each citizen's right in the water can best be described as a right to common use of a resource to be used by all but owned by none. Since the water is held by the state for all its citizens as beneficiaries, no one citizen can unreasonably interfere with the rights of other beneficiaries.

What pragmatic effects does the trust doctrine have? First, state agencies can be held to a higher standard with respect to their actions and omissions concerning the trust res. The actions of state agents, as fiduciaries of the res, could be judicially attacked as not displaying the high standard of care needed to protect the res. Second, each citizen would have the standing to demand judicial review of the actions or omissions of private individuals or state agents which affect the quality of water. Since each citizen is a beneficiary of the res, the courts could no longer deny him a forum on the ground that he lacked sufficient standing. Third, the doctrine would serve as a constant reminder to each citizen that he does not possess riparian water to the extent that he can despoil it for the public as a whole. Last, and perhaps most significant, the public trust could effectively serve as a viable procedure to effectuate antipollution standards against owners of nonnavigable riparian land as well as land overlying ground water reservoirs. Imposition of these standards will not be a compensable taking of their property, but rather a demand that all landowners live up to the same antipollution standards as other citizens of the state.

(2) There is urgent need for an accelerated program of comprehensive water resources planning to meet the rising water requirements of a growing population and expanding economy. The state water plan, with such future amendments, supplements, and additions as may be necessary, is accepted as the guide for developing and implementing this policy.

COMMENTARY. This paragraph expresses the need for adequate water resources planning and adopts the state water plan as a response to this need. The first sentence was adopted from the National Rivers and Harbors Congress—Principles and Policies for Water Resource Development, preamble (draft of March 5, 1969). The second sentence was taken in modified form from the California Water Code.<sup>85</sup>

(3) The Model Water Code shall be liberally interpreted to 85. Cal. WATER CODE §10005 (West 1971). obtain maximum beneficial use of the waters of the state for such purposes as domestic uses, irrigation, power development, mining, and industrial uses. However, adequate provision shall be made for the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the state for navigation, public recreation, municipal uses, and public water supply; such objectives are declared to be in the public interest.

COMMENTARY. Subsection (3) sets out a list of water uses which are declared to be beneficial. A second class of water uses is declared to be in the public interest. These uses receive special protection under the Model Water Code. There is an affirmative duty upon the state and local boards to see that these uses are not adversely affected by the operation of the code. In particular, these uses shall be preferred to other beneficial uses when competing applications are made for a permit under the provisions of (1). This provision was modeled after an Oregon statute.<sup>86</sup>

(4) The Model Water Code shall be liberally interpreted to protect and improve the quality of waters of the state and to provide that no substance be discharged into such waters without first receiving the necessary treatment or other corrective action. The people of the state have a substantial interest in the prevention, abatement, and control of both new and existing water pollution, and the maintenance of high standards of water quality. The people of the state recognize the need for the state water resources board to cooperate with agencies of other states and the federal government in carrying out these objectives.

COMMENTARY. This subsection emphasizes the need for effective water quality control. A state policy requiring adequate treatment of waste products and the maintenance of high water quality standards is set forth. The need for greater governmental cooperation is also recognized.<sup>87</sup>

(5) The public interest, health, safety, and welfare require that scientific research and experimentation in the field of artificial

86. See generally ORE. REV. STAT. §537.170 (3) (1970). 87. See generally CAL. WATER CODE §13000 (West 1971); FLA. STAT. §403.021 (1971).

weather modification and scientific efforts to develop, increase, and regulate natural precipitation be encouraged. A program for licensing, regulation, and control of interference by artificial means with the composition, behavior, or dynamics of the atmosphere must be established in order to develop, conserve, and protect the natural resources of the state and to safeguard life and property.

COMMENTARY. This subsection sets forth the dual objectives of state involvement in weather modification: encouragement of research and experimentation while insuring public protection. Most existing state declarations of purpose, including Florida's, have not recognized both objectives. The natural resources and police power bases for regulation are also set forth.<sup>88</sup>

#### **§1.03 Definitions**

When appearing in this code or in any rule or regulation adopted pursuant thereto, the following words shall mean:

(1) State board—The state water resources board.<sup>89</sup>

(2) Water management district—Any flood control or water management district operating under the authority of this code.<sup>90</sup>

(3) Governing board—The governing board of a water management district.<sup>91</sup>

(4) Reasonable-beneficial use—The use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose and in a manner which is both reasonable and consistent with the public interest.

COMMENTARY. The reasonable-beneficial use rule is the standard by which water use is governed under the code. It is a term of art and should not be confused with either the western prior appropriation term "beneficial use" or the riparian term "reasonable use." It includes the standard of reasonable use but it also requires efficient economic use of water, a characteristic of beneficial use. In addition to the rights

88. See generally Cal. WATER CODE §400 (West 1971); WEATHER MODIFI-CATION ASSOCIATION, ELEMENTS OF A MODEL LAW FOR REGULATION OF WEATHER MODIFICATION ACTIVITIES, no. 1, Purpose (1969).

89. See generally FLA. STAT. §373.081 (1) (1971). The functions of the Florida Board of Conservation have been transferred to the Department of Natural Resources. FLA. STAT. §20.25 (1971).

90. Fla. Stat. §373.081 (4) (1971).

91. See id. at §373.081 (3).

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of other riparians, under the code a water user must now consider the rights of the general public. Wasteful use of water will not be permitted under the reasonable-beneficial use standard, regardless of whether or not there is sufficient water to meet the needs of other riparian owners. This provision is original.<sup>92</sup>

(5) Person—Any and all persons, natural or artificial, including any individual, firm, association, organization, partnership, business trust, corporation, company, the United States of America, the state, and all political subdivisions, districts, municipalities, and public agencies thereof.

COMMENTARY. An extremely broad definition of "person" is intended and the enumerated examples are not considered to be exhaustive. The United States government is included within the definition of person.<sup>93</sup> While state regulatory powers over the federal government are limited by the Supremacy Clause of the United States Constitution, the states retain some authority, particularly over proprietary activities, of the federal government.

The definition is taken primarily from the California Water Code,<sup>94</sup> although the phrase "any and all persons, natural or artificial, including any individual" is taken from a Tennessee statute.<sup>95</sup>

(6) Domestic use—Any use of water for individual personal needs or for household purposes such as drinking, bathing, heating, cooking, or sanitation.

COMMENTARY. Domestic uses are exempted from regulation under \$2.01 (1). For this reason, some care has been taken to make this definition as restrictive as possible. Thus, the Model Water Code's definition omits "cooling of private residences" because this use collectively accounts for considerable utilization of water, and also excludes "maintenance of commercial lawns, gardens, or orchards," both of which appear in a comparable provision of the Model Water Use Act.<sup>96</sup> In neither instance did the drafters intend to exclude such uses from "domestic use" status, but instead attempted to place the burden of justifying an inclusion of their uses in the domestic use category upon

92. See generally ch. 58, §5.002(3) [1971] TEX. LAWS 112.

93. Contra, MODEL WATER USE ACT §102 (k) (1958).

94. CAL. WATER CODE §§19, 5000 (d), 5100 (a) (West 1971).

95. TENN. CODE ANN. §70-301 (Supp. 1970).

96. MODEL WATER USE ACT §102 (f) (1958).

water users rather than upon the administrative agency. This, it was hoped, would discourage attempts to place any large water use in the domestic use category. For similar reasons "ordinary livestock consumption" was omitted from this definition although exempted from regulation under the 1957 Florida Water Resources Law.<sup>97</sup> Iowa, in its water code,<sup>98</sup> has excluded "use of water for poultry, livestock and domestic animals" from regulation, presumably as a domestic use. The Model Water Use Act includes "livestock kept for household sustenance" in its definition of domestic use, but it was felt that the term is best omitted entirely. The question of watering livestock should be considered on a case-by-case basis by the regulatory agency.

This subpart is a considerably modified provision of the Model Water Use Act.<sup>99</sup> The qualifying term "individual" has been added to "personal" in order to avoid associating the word "personal" with the broad definition of "person" in §1.03 (5) of the code.

# (7) Nonregulated use—Any use of water which is exempted from regulation by the provisions of this code.

#### COMMENTARY. This provision is original.

(8) Water or waters of the state—Any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state.

COMMENTARY. The definition of "waters of the state" is a term of art which includes virtually every form of water. The Model Water Code's definition is more comprehensive in scope than any existing or proposed statute. It encompasses all forms of water included within the Model Water Use Act's definition of "water resources,"<sup>100</sup> as well as coastal waters and atmospheric moisture. The former is included within the scope of pollution control while the latter pertains to regulation of weather modification operations. It should be noted that artificial waterbodies are included in this definition.

97. FLA. STAT. §373.091 (1) (1971).
98. IOWA CODE ANN. §455A.1 (Supp. 1971).
99. See MODEL WATER USE ACT §102 (f) (1958).
100. Id. at §102 (s).

This provision was taken in modified form from \$2312 (12) (b) of the West Virginia Code (since repealed).

# (9) Ground water—Water beneath the surface of the ground, whether or not flowing through known and definite channels.

COMMENTARY. Consumptive uses of ground water are regulated along with surface water under chapter 2 of the Model Water Code. Chapter 3 of the code is concerned with regulation of well drilling operations, the prevention of contamination of the aquifer, and control over waste from uncapped artesian wells. This definition of ground water resembles to some extent that of the Model Water Use Act.<sup>101</sup>

(10) Surface water—Both contained surface water—that is, water upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other watercourses, lakes, reservoirs, and coastal waters subject to state jurisdiction—and diffused surface water—that is, water occurring upon the surface of the ground other than in contained waterbodies. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

COMMENTARY. This definition covers both contained and diffused surface water to make it possible to regulate the use of both under the permit system established in chapter 2. Therefore, it necessarily includes parts of definitions of both types of water. It is patterned in part after definitions found in a Mississippi statute.<sup>102</sup>

(11) Stream—Any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. The fact that some part of the bed or channel shall have been dredged or improved does not prevent the watercourse from being a stream.

COMMENTARY. The source of this definition is a combination of definitions found in several cases.<sup>103</sup>

103. See Hutchinson v. Watson Slough Ditch Co., 16 Idaho 484, 101 P. 1059 (1909); Keener v. Sharp, 341 Mo. 1192, 111 S.W. 2d 118 (1937); State v. Hiber, 48 Wyo. 172, 44 P. 2d 1005 (1935).

<sup>101.</sup> See generally id. at 102 (1).

<sup>102.</sup> See Miss. Code Ann. §5956-02 (b) (Supp. 1971).

(12) Other watercourse—Any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted.

COMMENTARY. This provision is original.

# (13) Coastal waters—Waters of the (Atlantic Ocean) (Pacific Ocean) (Gulf of Mexico) within the jurisdiction of the state.

COMMENTARY. The provisions of chapter 5, regulating water quality, are applicable to coastal as well as fresh waters. This subsection is original.

(14) Impoundment—Any lake, reservoir, pond, or other containment of surface water occupying a bed or depression in the earth's surface and having a discernible shoreline.

COMMENTARY. Impoundments of water are controlled under the provisions of chapter 4 of the code.

#### **\$1.04** Scope

# (1) All waters of the state are subject to regulation under the provisions of this code unless specifically exempted.

COMMENTARY. The Model Water Code subjects virtually all significant water uses to regulation. The only exemption expressly given under any section of the code is for domestic uses.<sup>104</sup> This provision is original.

(2) No state or local government agency, except the governing board of a water management district, may enforce any statute, regulation, or order affecting waters of the state controlled under the provisions of this code, whether enacted or promulgated before or after the effective date of this code, without the written permission of the state board.

COMMENTARY. Section 1.04 (2) vests exclusive powers over water regulation in the administrative agencies established under this code: the state water resources board and the water management districts.

104. See COMMENTARY §2.01 (1) infra.

In the interest of a unified approach to water resources development and regulation, control over water by other agencies should be kept to a minimum. Under this provision, *prior* permission must be obtained from the state water resources board before regulation by another agency is permitted. There are numerous state, county, and local governmental agencies in most states which exercise some control over water and closely related land resources.<sup>105</sup>

This subsection was taken from the Model Water Use Act.<sup>106</sup> The provision differs significantly, however, from its source in that it requires affirmative action on the part of any agency seeking permission to exercise control over water resources. Under the Model Water Use Act, other governmental agencies are free to impose additional regulations upon water resources *until* expressly forbidden by the state agency.

(3) No state or local government agency or other person having the power of eminent domain or condemnation under the laws of this state, except the governing board of a water management district, may exercise that power with respect to condemning property if the condemnation will materially affect water resources in the state, without written permission of the state board.

COMMENTARY. This subsection is intended to complement subsection (2). The right to condemn water rights must be subject to supervision

105. Among such agencies in Florida are (1) multipurpose districts: flood control and surface water regulation, FLA. STAT. ch. 378 (1971); (2) Division of Interior Resources: surface water and artesian wells, FLA. STAT. ch. 373 (1971); (3) Department of Pollution Control: surface water pollution, FLA. STAT. ch. 403 (1971); (4) Division of Health: ground water pollution, FLA. STAT. ch. 387 (1971); (5) Department of Natural Resources: salt water fisheries, FLA. STAT. ch. 370 (1971); (6) Department of Natural Resources: surface water contamination, FLA. STAT. ch. 372 (1971); (7) Division of Recreation and Parks: outdoor recreation and conservation, FLA. STAT. ch. 375 (1971); (8) Board of Trustees of the Internal Improvement Trust Fund: sovereignty tidal and submerged bottom lands, FLA. STAT. ch. 253 (1971); (9) Canal Authority, Navigation and Waterways Development Districts: surface water and navigation, FLA. STAT. ch. 374 (1971); (10) Department of Natural Resources: single purpose drainage districts, FLA. STAT. ch. 298 (1971); (11) County Commissioners: drainage of swamps and overflowed lands, FLA. STAT. ch. 156 (1971); (12) County Commissioners: drainage by counties, FLA. STAT. ch. 157 (1971); (13) County Commissioners: mosquito control districts, FLA. STAT. ch. 388 (1971); (14) Municipalities: water use for industrial and residential purposes, FLA. STAT. §176.02 (1971).

106. MODEL WATER USE ACT §205 (1958).

by the State Water Resources Board if a uniform state water regulatory policy is to be maintained. Municipalities are often permitted to acquire a public water supply by means of condemnation.<sup>107</sup> Uncoordinated use of condemnation powers by numerous governmental agencies vested with them, for example, could seriously interfere with the operation of a permit system established under chapter 2 of the code.<sup>108</sup> This provision was taken from the Model Water Use Act.<sup>109</sup>

#### **§1.05** State Board

(1) There is hereby created the State Water Resources Board which shall be composed of five (5) full-time members appointed by the governor subject to confirmation by the senate at the next regular session of the legislature. Refusal or failure of the senate to confirm an appointment shall create a vacancy in the office to which the appointment was made.

COMMENTARY. This subsection establishes the State Water Resources Board as an independent board with primary responsibility for regulation of water resources. The use of independent boards is sanctioned by Florida law and such agencies currently exercise substantial powers over the state's water resources.<sup>110</sup> This provision resembles a section of the Model Water Use Act.<sup>111</sup>

(2) Each member shall be a resident of the state. One member shall be an attorney who has practiced law in the state for at

107. E.g., FLA. STAT. §361.04 (1971).

108. The following is a partial list of those state and local governmental agencies and private corporations vested with eminent domain powers in Florida: Department of Health and Rehabilitation Services, FLA. STAT. §402.16 (1971); Board of Regents, FLA. STAT. §§240.161, 243.02 (3) (1971); canal authorities, FLA. STAT. §§374.051, .071, .091 (1971); public service corporations, FLA. STAT. §361.01 (1971); boards of county commissioners, FLA. STAT. §§127.01, .02 (1971); county drainage programs, FLA. STAT. §157.03 (1971); drainage districts, FLA. STAT. §298.62 (1971); flood control districts, FLA. STAT. §378.16 (1971); Division of Health, FLA. STAT. §381.062 (1971); housing authorities, FLA. STAT. §421.12 (1971); municipalities, FLA. STAT. §167.65 (1971); Department of Transportation, FLA. STAT. §337.27 (1971); county boards of public instruction, FLA. STAT. §161.36 (4) (1971). `109. MODEL WATER USE ACT §205 (b) (1958).

110. See Game and Fresh Water Fish Commission, FLA. STAT. §372.01 (1971); Commission on Marine Sciences and Technology, FLA. STAT. §369.03 (1971). Water pollution is presently regulated by an independent board, the Department of Pollution Control. FLA. STAT. §20.26 (1971).

111. See MODEL WATER USE ACT \$201 (a) (alt. 1) (1958).

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least five (5) years prior to his appointment; one member shall be a hydrologist or a professional engineer with experience in water management or conservation; one member shall be an experienced farmer or rancher; and the other two members shall be chosen from the public at large based upon their general education, business qualifications, and experience with problems relating to water resources.

COMMENTARY. Certain requirements for holding office as a member of the state board are listed in this subsection. An attempt has been made to insure that a variety of interests and skills will be found on the board. This provision is considerably more detailed than a comparable section in the Model Water Use Act.<sup>112</sup> A similar example of listing specific occupations in a statute may be found in a Florida statute concerning the Advisory Council to the Division of Health,<sup>113</sup> which requires two medical doctors, a dentist, a pharmacist, and a discreet citizen.<sup>114</sup> This subsection is original.

(3) Each member shall serve for a term of five (5) years and shall be eligible for reappointment for only one additional term except that

(a) the terms of the members first appointed shall expire, as designated by the governor, one at the end of one year, one at the end of two years, one at the end of three years, one at the end of four years, and one at the end of five years, and

(b) any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of that term.

COMMENTARY. Subsections 3 (a) and (b) are taken almost verbatim from the Model Water Use Act.<sup>115</sup>

(4) The member of the initial state board who is appointed for a five-year term shall serve as chairman for the first year. Thereafter, members of the state board shall elect annually one

112. Id. at §201 (b) (alt. 2).

113. FLA. STAT. §381.011 (1971).

114. The Commission on Marine Sciences and Technology consists of eight members, two of whom must be from different institutions of higher learning in the state, one public and one private, offering a doctorate degree in one or more of the marine science fields. See FLA. STAT. §369.03 (1971).

115. MODEL WATER USE ACT §201 (b) (alt. 1) (1958).

of their number as chairman. In the event of the absence or illness of the chairman, the senior member of the state board shall act as temporary chairman.

COMMENTARY. Subsection (4) provides for election of a chairman by fellow board members.<sup>116</sup> This provision is original.

(5) Each member of the state board shall be compensated at a rate not more than \_\_\_\_\_\_ per annum. In addition, each member shall be reimbursed for traveling and other necessary expenses incurred in the performance of his duties as a member.

COMMENTARY. Membership on the board will be a full-time endeavor. However, the day-to-day administration would be the responsibility of the director. It should be noted that in Florida it is customary for part-time members of state boards (unless serving ex officio) to receive no compensation.<sup>117</sup> Expenses, of course, are provided for. This subsection provides for annual, rather than per diem, compensation.<sup>118</sup> This provision is original.

(6) Regular meetings of the state board shall be held monthly. Special meetings may be called by the chairman or at the request of a majority of the board. Three (3) members in attendance shall constitute a quorum.

A complete record of the proceedings of the board shall be made and such record shall be open to public inspection.

COMMENTARY. Subsection (6) sets out basic rules of procedure and operation. The board would develop additional rules of operation. The provision for the keeping of minutes and public inspection thereof is taken from a Florida statute which concerned meetings of the State Road Department.<sup>119</sup>

116. This procedure is used by such diverse Florida agencies as the Board of Regents, FLA. STAT. §240.021 (1971); Game and Fresh Water Fish Commission, FLA. STAT. §372.01 (2) (1971); and the State Library Council, FLA. STAT. §257.031 (1971).

117. Game and Fresh Water Fish Commission, FLA. STAT. §372.01 (3) (1971); Commission on Marine Sciences and Technology, FLA. STAT. §369.03 (1971); Board of Regents, FLA. STAT. §240.021 (1971). Contra, Advisory Council to the Division of Health, FLA. STAT. §381.141 (1971) (\$25 per day when attending official meetings).

118. See MODEL WATER USE ACT §201 (alt. 1) (1958).

119. Fla. Laws 1955 ch. 29965, §11. The State Road Board was abolished by a governmental reorganization. FLA. STAT. §20.23 (1971).

(7) The state board shall employ an executive director as chief administrative officer and set his compensation. The executive director shall be a person experienced in the field of water management or water conservation and shall serve at the pleasure of the state board.

COMMENTARY. Section 1.05 (7) provides for an executive director who shall be the chief administrative officer. In Florida, with its great number of boards composed of ex officio or part-time members, the office of director is frequently provided for in the legislation itself.<sup>120</sup> This provision is original.

(8) The state board may employ a legal staff for the purposes of (a) providing legal counsel on matters relating to the exercise of its powers and duties; (b) representing it in all proceedings of an administrative or judicial nature; and (c) otherwise assisting in the administration of the provisions of this code.

COMMENTARY. The purpose of this subsection is to assure that the legal department is organized along functional lines. Legal personnel are required to represent the enforcement branch of the agency in adversary hearings. The same personnel should not also assist the board with respect to the building of a "trial record" at such hearings. Therefore, it is hoped that these various functions will be assigned to different personnel.

(9) For the purpose of administration, the board shall organize itself in the manner it deems necessary to segregate and conduct the work of the board properly. The work of the board shall be divided into at least three (3) divisions, known as the Division of Water Use, the Division of Water Quality, and the Division of Weather Modification. The state board shall appoint a director of each division who shall supervise the work thereof and act as technical adviser to the board on functions under his jurisdiction.

COMMENTARY. This subsection was taken from the California Water Code.121

120. E.g., Division of Health, FLA. STAT. §381.011 (1971); Commission on Marine Sciences and Technology, FLA. STAT. §369.05 (1971); Department of Pollution Control, FLA. STAT. §20.26 (1971).

121. CAL. WATER CODE §186 (West 1971).

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(10) The state board shall be responsible for the administration of this code at the state level, and is charged with exercising the powers and fulfilling the duties delegated to it by section 1.06 and other sections of this code.

COMMENTARY. Section 1.05 (10) indicates that a two-tiered system has been created. The successful operations of the Central and Southern Florida Flood Control District and the Southwest Water Management District indicate that such an approach is feasible. Other states may prefer more control by a state agency. The Model Water Use Act envisions a state board without quasi-independent local districts, and Iowa has successfully administered a comprehensive water regulatory system solely at the state level. This approach appears to be favored in western prior appropriation states as well.<sup>122</sup> However, single and multipurpose districts have functioned fairly well in several midwestern states.<sup>123</sup> This provision is original.

#### \$1.06 General Powers and Duties of the State Board

In addition to its other powers and duties the state board is authorized to:

(1) Carry out topographic surveys, research, and investigations into all aspects of water use and water quality.

COMMENTARY. Section 1.06 (1) authorizes studies and investigations of the state's water resources and its problems. This provision would sanction legal, social, biological, and economic studies as well as purely geologic, hydrologic, and engineering surveys.

In Florida, the Interior Resources Division of the Department of Natural Resources is presently authorized to conduct scientific surveys and cooperate with state and federal agencies in such programs.<sup>124</sup> The U.S. Geological Survey mapping program, which was started in Florida in the late nineteenth century, is the basic source of topographic mapping. In addition to other uses, such maps are necessary in connection with problems of water control and management, delineation of ground water recharge areas, and similar problems. As such, they serve as bases for important studies of water resources. In addition, they are valuable in planning for agricultural, industrial,

122. E.g., COLO. REV. STAT. ANN. \$148-18-1 to -15 (1963), as amended (Supp. 1969); ORE. REV. STAT. \$537.505-.795 (1969); WYO. STAT. ANN. \$41-201 to -216 (1957), as amended (Supp. 1971).

123. Lauer, District Control of Water Resources, 37 U. DET. L. J. 28 (1959). 124. FLA. STAT. §373.131 (1), (2) (1971). municipal, and recreational uses of water. The Florida Geologic Survey was established in 1957 to cooperate with the federal government in a topographic mapping program.<sup>125</sup> This subsection is patterned after a provision of the California Water Code.<sup>126</sup>

(2) Contract and cooperate with the various agencies of the federal government and with water management districts, state and local administrative and governmental agencies, or private persons.

COMMENTARY. This subsection expressly confers the power to control and cooperate with governmental agencies and private persons. This power could no doubt be implied from the nature of the state board's other powers and responsibilities. Nothing in this subsection is intended to place any limitation on the agency's powers in this respect. This provision is original.

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

COMMENTARY. A right of entry for purposes of both investigation and enforcement is provided for in this subsection. Such a right of entry is found in Florida in connection with regulation of artesian wells.<sup>127</sup> Recent cases, however, have suggested that a power of entry might be invalid where private dwellings are concerned. It would seem that a search warrant might be required if a building were entered. Whether the same would be true if the entry involved only the land itself is an open question at present. This same problem arises with respect to §§1.17 (2) and 5.10 of the Model Water Code.<sup>128</sup> This subsection was taken from the Model Water Use Act<sup>129</sup> and from the Alabama Statutes.<sup>130</sup>

#### (4) Cooperate with other state agencies, water management

125. Id. at §373.012.

126. CAL. WATER CODE §225 (West 1971).

127. FLA. STAT. §373.051 (1971).

- 128. See Juergensmeyer & Morse, Air Pollution Control in Indiana in 1968: A Comment, 2 VALPARAISO L. REV. 296, 312-14 (1968).
  - 129. MODEL WATER USE ACT §202 (3) (alt. 2) (1958).

130. Ala. Code tit. 2, §273 (15) (1958) (Supp. 1969).

districts, county or other local governmental organizations, or agencies created for the purpose of utilizing and conserving the waters of this state, and to assist such organizations and agencies in coordinating the use of their facilities and participate in an exchange of ideas, knowledge, and data with such organizations and agencies. For this purpose the state board shall maintain an advisory staff of experts.

COMMENTARY. Section 1.06 (4) authorizes cooperation between the state water resources board and various state and local agencies concerned with water problems. This provision is in no way intended to weaken the authority of the state board and water management districts as delineated in \$1.05 (2). Counties, and to some degree municipalities, have considerable powers over water resources within their boundaries, and many of these functions would not be abolished by passage of this act. This subsection, however, would allow the state agency to coordinate the activities of the innumerable local governmental organizations involved in the water resources area. The Florida Division of Interior Resources now possesses such powers.<sup>131</sup> There is no comparable provision in the Model Water Use Act. This is probably because the act contemplates little independent local involvement in water problems.<sup>132</sup> Authorization for cooperation with agencies of the federal government and water resources agencies of other states is found in §§1.06 (11) (a) and (b), respectively, of the Model Water Code. This subsection was taken from a Florida statute.133

# (5) Prepare, publish, and issue such printed pamphlets and bulletins as the state board deems necessary for the dissemination of information to the public concerning its activities.

COMMENTARY. The experience of the 1955–56 Florida Water Resources Study Commission revealed that, except in periods of extreme water shortage, there was considerable public resistance to regulation. The voluntary permit system provided for in the 1957 Water Resources Act of Florida<sup>134</sup> has never been used, since no one has ever applied for a permit to divert excess water. Until quite recently, no

131. FLA. STAT. §373.131 (1971).
132. But see Model WATER USE ACT §202 (9) (alt. 2) (1958).
133. FLA. STAT. §373.131 (1971).
134. Id. at §373.141.
### Administrative Structure and Operation

water regulatory district had been created under the Florida legislation.<sup>135</sup> It is obvious that a serious program of public education must be initiated at both state and local levels. The Division of Interior Resources is now authorized to publish such material.<sup>136</sup> The Division of Water Resources published a monthly bulletin, *Florida Water News*, from July 1959 to August 1965. Since October 1965, news in the water resources area has appeared in *Florida Conservation News*, a publication of the Department of Natural Resources.<sup>137</sup>

This subsection is taken from the California Water Code.<sup>138</sup> No comparable provision specifically appears in the Model Water Use Act, although such power may be implied from §202 (2) (a), and possibly §208 (3).

(6) Appoint and remove agents and employees including specialists and consultants.

COMMENTARY. This provision is original.

(7) Acquire, lease, and dispose of such real and personal property as may be necessary in the performance of its functions, including the acquisition of real property for the purpose of conserving and protecting water and water-related resources as provided in section 1.23.

# COMMENTARY. This provision is original.

(8) Identify by continuing study those areas of the state where salt water intrusion is a threat to fresh water resources and report its findings to the water management districts, boards of county commissioners, and the public.

COMMENTARY. Salt water intrusion<sup>139</sup> is not peculiar to Florida, but in some of the coastal areas of the state the problem of intrusion has

135. Id. at §§373.142-.171.

136. Id. at §373.131 (4).

137. The News was published by the Board of Conservation until 1969, when the board was abolished and its functions transferred to the Department of Natural Resources. FLA. STAT. §20.25 (1971). For additional information see MALONEY, PLAGER, & BALDWIN §94.2.

138. CAL. WATER CODE §130 (West 1971).

139. See BLACK, BROWN, & PEARCE, SALT WATER INTRUSION IN FLORIDA— 1953 (1953); FLA. WATER RESOURCES STUDY COMM'N, FLORIDA'S WATER RE-SOURCES, A REPORT TO THE GOVERNOR OF FLORIDA AND THE 1957 LEGISLATURE 40-48 (1956); Hendry & Lavender, Final Report on an Inventory of Flowing

become extremely serious. This subsection is taken from a Florida statute.<sup>140</sup>

(9) Conduct, either independently or in cooperation with any person or any county, state, federal, or any other agency, a program of study, research, experimentation, and evaluation in the field of weather modification.

The state board shall also license and regulate weather modification activities pursuant to the provisions of this act.

COMMENTARY. In anticipation of future technological advances, weather modification has been included within the jurisdiction of the state board. Thus, all phases of the hydrologic cycle are at least potentially capable of regulation. In Florida the Department of Air and Water Pollution Control presently exercises authority over weather modification activities under several Florida statutes<sup>141</sup> and enforces the licensing provisions contained therein. Responsibility for this activity will remain at the state level and not be delegated to the water management districts. This subsection was taken from the California Water Code.<sup>142</sup>

(10) Exercise general supervisory authority over all water management districts created under this code. The state board may review and rescind any regulation of a water management district to insure compliance with the provisions and purposes of this code.

COMMENTARY. This subsection is intended to enable the state agency to provide coordination among the districts and enforce statewide policies. The subsection is based on a Florida statute<sup>143</sup> which regulates relations between the Division of Interior Resources and water regulatory districts authorized under section 373.142, Florida Statutes. To date, only one such district has been established. Its boundaries coincide with those of the Southwest Water Management District. The relationship between the present Division of Interior Resources and the two existing water management districts in Florida has not been

Artesian Wells in Florida, FLORIDA GEOL. SURVEY INFO. CIR. NO. 21 (1959); MALONEY, PLAGER, & BALDWIN §52.3 (b).

<sup>140.</sup> Fla. Stat. §373.131 (5) (1971).

<sup>141.</sup> Id. at §§403.281-.411.

<sup>142.</sup> CAL. WATER CODE §235 (West 1971).

<sup>143.</sup> Fla. Stat. §373.174 (1971).

clearly defined. Such districts operate under the provisions of Florida Statute Chapter 378. Section 378.06 (2), Florida Statutes, provides that "[a]ny district created under the provisions of this chapter or by special act shall submit its policies, rules and regulations to the division [of interior resources] for review and approval." The power to coordinate the activities of water management districts is given to the Division of Interior Resources.<sup>144</sup>

Under this subsection it is intended that the state board will have greater control over water management districts than the present Florida Division of Interior Resources has over the two existing multipurpose districts. This provision was taken from a Florida statute.<sup>145</sup>

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

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

(b) The state board shall, subject to confirmation by the legislature, act on the behalf of the state in the negotiation and consummation of any agreement or compact with another state or states concerning waters of the state.

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

COMMENTARY. Subpart (a) concerns state-federal cooperation in the area of water resources. The federal government carries out considerable activities relating to water resources in such states as Florida. Examples of such federal activity in Florida include the U.S. Army Corps of Engineers' construction projects, administration of the Small Watershed Act, soil conservation service, Cross-Florida Barge Canal, beach erosion control projects, and pollution regulation.<sup>146</sup> The Water Resources Board has primary responsibility for federal-state agreements.

The state agency is given substantial powers to negotiate with the

144. Id. at §370.02 (3) (b).

145. Id. at §373.174.

146. For a discussion of federal activity in Florida see MALONEY, PLAGER, & BALDWIN §84.

federal government and work out the details of appropriate agreements. This function is vested exclusively in the state agency; water management districts are not permitted to make binding agreements with the federal government without approval of the state agency.

Subpart (b) permits the state board to negotiate interstate compacts, subject to approval by the state legislature. Florida has signed several interstate compacts regulating salt water fisheries,<sup>147</sup> but has yet to join any compacts affecting fresh water. Interstate compacts might be used quite effectively by Florida and other eastern states in developing their water resources.<sup>148</sup> Pollution control is one area where interstate cooperation would be desirable. It has been suggested that the Okefenokee Swamp in Georgia is a major recharge area for Florida ground water supply. Thus, cooperation with Georgia should be encouraged to protect this source of water.

Subpart (a) is original. The Model Water Use Act, however, has a comparable provision.<sup>149</sup> No model was used for subpart (b), but a similar provision is found in the Model Water Use Act.<sup>150</sup> Subpart (c) is original.

(12) (a) Hold annually a conference on water resources developmental programs. Each agency, commission, district, municipality, or political subdivision of the state responsible for a specific water resource development program requiring federal assistance shall at such conference present its programs and projects and the needs thereof.

(b) Upon termination of the water conference, the state board shall select those projects for presentation in the state program of public works which best represent the public welfare and interest of the people of the state as required for the proper development, use, conservation, and protection of the waters of the state, and land resources affected thereby.

Thereafter, the state board shall present to the appropriate committees of the federal government a program of public works, requesting authorization for funds for each project.

COMMENTARY. Florida presently holds an annual conference author-

147. Atlantic States Marine Fisheries Compact, FLA. STAT. §370.19 (1971); Gulf States Marine Fisheries Compact, FLA. STAT. §370.20 (1971).

148. See generally Clary, Air and Water Interstate Compacts, 1 ABA NAT. RES. LAW. 60 (1968).

149. MODEL WATER USE ACT §206 (a) (1958).

150. Id. at §206 (b).

ized under the Florida Statutes.<sup>151</sup> This conference enables all state and local agencies engaged in water resource development projects to work through the Division of Interior Resources in seeking federal funds. Harmful competition is thereby eliminated and a unified request for Florida is placed before Congress.<sup>152</sup> This subsection is derived from a Florida statute.<sup>153</sup> One significant change is the omission of a provision which allowed state and local agencies to bypass the annual conference and deal directly with the federal government.<sup>154</sup>

# **§1.07** State Water Use Plan

(1) The state board shall proceed as rapidly as possible to study existing water resources of the state; means and methods of conserving and augmenting such water resources; existing and contemplated needs and uses of water for protection of the environment, procreation of fish and wildlife, recreational use, improvement of water quality, irrigation, mining, power development, and domestic, municipal, and industrial uses, and all other related subjects including drainage, reclamation, flood-plain zoning, and selection of reservoir sites.

The state board shall progressively formulate an integrated, coordinated program for the use and development of the waters of the state based on the above studies. This program, with such amendments, supplements, and additions as may be necessary later, shall be known as the State Water Use Plan.

COMMENTARY. Section 1.07 (1) of the Model Water Code differs from most state statutes in that it directs the state board to prepare a specific document (known as the State Water Use Plan) containing a detailed and comprehensive blueprint for water resources management within the state.<sup>155</sup> Comprehensive long-range planning of this sort is authorized in California,<sup>156</sup> Texas,<sup>157</sup> Connecticut,<sup>158</sup> Dela-

151. FLA. STAT. §373.192 (1971).

152. The success of this program may be demonstrated by the increase in federal appropriations for Florida water resource development projects from \$14.5 million in 1961 to \$33.5 million in 1966. See MALONEY, PLAGER, & BALD-WIN §95.

153. FLA. STAT. §373.192 (1971).

154. Id. at §373.192 (5).

155. For a discussion of the need for state water resources planning, see introduction to this chapter.

156. CAL. WATER CODE §10000 (West 1971).

157. Ch. 58, §11.101 [1971] TEX. LAWS 165.

158. Conn. Gen. Stat. Ann. §25–5 (b) (Supp. 1971).

ware,<sup>159</sup> Kansas,<sup>160</sup> and Oregon,<sup>161</sup> while Nebraska has a comprehensive state plan which involves all areas of development, including water resources.<sup>162</sup>

(2) The plan shall be directed toward the achievement of the following objectives:

(a) the attainment of maximum reasonable-beneficial use of water for such purposes as those referred to in subsection (1) above;

(b) the proper economic development of the waters of the state;

(c) the control of the waters of the state for such public purposes as navigation, drainage, sanitation, and flood control;

(d) the attainment of adequate water quality as expressed in the state water quality plan; and

(e) the implementation of the water resources policies expressed in section 1.02 of this code.

COMMENTARY. Section 1.07 (2), which is modeled after a provision of the Oregon Water Plan,<sup>163</sup> delineates five objectives that the State Water Use Plan must seek to achieve. The first of these is the attainment of a pattern of maximum reasonable-beneficial uses of water for such purposes as protection of the environment, procreation of fish and wildlife, recreational use, improvement of water quality, irrigation, mining, power development, and domestic, municipal, and industrial uses. A reasonable-beneficial use is defined as "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose and in a manner which is both reasonable and consistent with the public interest."164 The immediate tool by which this is achieved is the consumptive use permit system. A second objective is the economic development of the water resources of the state, and a third is the control of the waters of the state for such purposes as navigation, drainage, sanitation, and flood control. A fourth objective is implementation of the provisions of the State Water Quality Plan and other portions of chapter 5 of the code dealing with water quality. The importance of coordinated planning

159. DEL. CODE ANN. §7-6104 (a) (1) (Supp. 1970).
160. KAN. STAT. ANN. §§82a-903 to -926 (1969).
161. ORE. REV. STAT. §§536.300, .310 (1969).
162. NEB. REV. STAT. §§84-131 to -150 (Supp. 1969).
163. ORE. REV. STAT. §536.310 (1969).
164. MODEL WATER CODE §1.03 (4).

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concerning consumptive uses and water quality has already been emphasized. Coordination of this sort is simplified by the requirement that complementary segments of the Water Quality and Water Use plans be developed together. A final objective is recognition of the state water resources policy expressed in the code's declaration of policy.<sup>165</sup>

(3) For the purposes of this plan the state board shall divide each water management district into sections which shall conform as nearly as practicable to a hydrologically controllable area and describe all water resources within the area. The state board shall determine:

(a) presently exercised domestic uses and water permit rights, and

(b) the quantity of water available for application to reasonable-beneficial uses in the future.

COMMENTARY. Section 1.07 (3) specifically requires the state board to ascertain the quantity of water available for application to reasonable-beneficial uses as well as the extent of presently exercised domestic uses and permit rights.<sup>166</sup> This information must then be considered in the formulation of any plan for future development of the resource. Detailed planning must be based on a thorough study of the state's water resources, including existing water use patterns and problems. A number of states provide for water inventories and statewide studies of water use patterns.<sup>167</sup> California has perhaps the most comprehensive inventory.<sup>168</sup>

(4) Within each section the state board shall establish the following:

(a) Minimum flow for all surface watercourses in the area. The minimum flow for a given watercourse shall be the limit at

165. *Id.* at §1.02 (2).

166. Domestic uses are exempt from regulation under the permit system. See MODEL WATER CODE §2.01 (1).

167. See, e.g., ARK. STAT. ANN. \$21-1315 (1968) (surface water); COLO. REV. STAT. \$148-2-9 (Supp. 1967); CONN. GEN. STAT. ANN. \$25-5a (1960); ILL. STAT. ANN. tit. 19, \$145.32 (Smith-Hurd Supp. 1970); IND. ANN. STAT. \$\$27-1701 to -1709 (1970); FLA. STAT. \$370.0212 (1971); MO. STAT. ANN. \$256.370 (Supp. 1970); NEB. REV. STAT. \$2-1568 (1970); TEX. STAT. ANN. art. \$280-5 (1954) (water resources committee created for four-year period).

168. See CAL. WATER CODE §§5100-5108 (West 1971).

which further withdrawals would be harmful to the water resources and ecology of the area.

(b) Minimum lake level for all fresh water lakes and ponds in the area greater than 25 acres. The minimum level of a given lake or pond shall be the level at which further withdrawals would be harmful to the water resources and ecology of the area.

(c) Minimum ground water level. The minimum ground water level shall be the level of ground water in an aquifer at which further withdrawals would be harmful to the water resources of the area.

COMMENTARY. Section 1.07 (4) provides for the establishment of a minimum flow for surface watercourses, as well as minimum lake and ground water levels. It is essential that any system of water allocation include a minimum flow for public purposes. Commercial navigation, recreational boating, fishing, hunting, and swimming, and ecological protection are some of the public purposes that should be protected under the minimum flow concept.

(5) The minimum flow, minimum lake level, and minimum ground water level shall be calculated by the state board using the best information available. Where appropriate, minimum flows and levels may be calculated to reflect seasonal variations. The state board shall also consider and at its discretion may provide for the protection of nonconsumptive uses in the establishment of minimum flows and levels.

COMMENTARY. Section 1.07 (5) indicates that minimum flow and levels do not necessarily have to reflect precisely historical average minimum flows and levels. Rather, minimum flows and levels act as guidelines in the granting of permit rights and the protection of nonconsumptive uses. In addition, under the Model Water Code, these figures are used in connection with the implementation of water shortage provisions.<sup>169</sup> It should be noted that the state board may establish monthly figures in order to take account of seasonal variations.

(6) The governing boards shall condition permits under chapter 2 of this code in such a manner as to preserve minimum flows and levels established under this section.

169. MODEL WATER CODE §2.09 (2).

COMMENTARY. Section 1.07 (6) prohibits the granting of any consumptive use permit that would adversely affect the maintenance of minimum flows and levels.

(7) The state board shall give careful consideration to the requirements of public recreation, the protection of the environment, and procreation of fish and wildlife. The state board may prohibit or restrict other future uses on certain designated streams which may be inconsistent with these objectives.

COMMENTARY. Under section 1.07 (7) the State Water Use Plan may call for the reservation of unused waters for the purpose of public recreation, protection of the environment, and procreation of fish and wildlife. Existing water users, however, will not be affected by this provision unless compensation is paid. Several western states allow reservation of water from appropriation by permit applicants.<sup>170</sup> In this fashion the most effective protection can be given to such public purposes as recreation, the preservation of fish and wildlife habitats, and dilution of wastes where complete purification is impossible.<sup>171</sup> Another application of the reservation power is to allow for future water development projects. A potential project may be conceived of long before actual need arises, and a large and comprehensive project may be contemplated years before final developments are completed.<sup>172</sup> Such projects may be jeopardized if less desirable uses are permitted to utilize the same water source.<sup>173</sup>

The Model Water Code permits a form of "environmental zoning."

(8) The state board may also designate certain uses in connection with a particular source of supply which, because of the nature of the activity or the amount of water required, would constitute an undesirable use for which the governing board may deny a permit under the provisions of chapter 2.

COMMENTARY. Under the provisions of \$1.07 (8) certain uses

170. See Cal. Water Code §§10500, 10504, 10504.1 (West 1971); Ore. Rev. Stat. §536.410 (1969).

171. Trelease, supra note 41, at 45.

172. Trelease, Preferences to the Use of Water, 27 ROCKY MT. L. REV. 133, 140 (1955).

173. In order to protect potential developments, the Utah Statutes permit the reservation of waters from appropriation. UTAH CODE ANN. §73-6-1, -2 (1968).

may be declared undesirable because of the likelihood that they will adversely affect the environment in the surrounding area. In such cases the governing board of a water management district is authorized, but not compelled, to deny a consumptive use permit. It is intended that this device will prevent some uses altogether in areas where they are likely to be quite harmful. However, the governing board may instead demand certain guarantees from the user as a condition to granting a consumptive use permit in order to remove the risk of environmental damage.

(9) The state board may also designate certain uses in connection with a particular source supply which, because of the nature of the activity or the amount of water required, would result in an enhancement or improvement of the water resources of the area. Such uses shall be preferred over other uses in any action pursuant to section 2.05 of this code.

COMMENTARY. Section 1.07 (9) allows the state board to designate in the plan certain uses which are to be given a preference in the granting of consumptive use permits. Such uses might include recreation, preservation of the environment, protection of recharge areas, and others. Once such a designation is made, the governing board of the water management district must recognize the preference. Some western states employ preferences in their prior appropriation laws to promote particular water policies,<sup>174</sup> but, in general, preferences are seldom used to further environmental objectives. The Oregon statutes permit the state water resources agency to classify some uses as most beneficial on designated streams.<sup>175</sup>

(10) The state board may add to the state water use plan any other information, directions, or objectives it feels necessary or desirable for the guidance of the governing boards in the administration and enforcement of this code.

COMMENTARY. Section 1.07 (10) is a catchall provision which allows the state board to add any additional information or instructions to the plan which it deems appropriate. This provision is significant since only a bare outline of the contents of the State Water Use Plan can be included in the Model Water Code itself.

174. See generally Trelease, supra note 172, at 158-60. 175. ORE. REV. STAT. §536.340 (1969).

# Administrative Structure and Operation

(11) During the process of formulating or revising the state water use plan, the state board shall consult with and carefully evaluate the recommendations of concerned federal, state, and local agencies, particularly the governing boards of the various water management districts.

COMMENTARY. One of the greatest impediments to proper planning has been the lack of communication among the various federal, state, and local governmental agencies involved in water resources development and regulation.<sup>176</sup> Section 1.07 (11) requires the state board to consult with all interested governmental water resources agencies and carefully consider their findings and recommendations. This procedure is designed to reduce duplication of effort and encourage the free exchange of data among such agencies. However, it should be emphasized that the ultimate responsibility for drafting the plan rests with the state board.

Since the State Water Use Plan will be formulated on an area-byarea basis, the water management districts must play a prominent role in the creation of the plan.

(12) Each governing board is directed to cooperate with the state board in conducting surveys and investigations of water resources, to furnish to the state board all available data of a technical nature that might be useful to it in the formulation of the state plan, and to advise and assist the state board in the formulation and drafting of those portions of the state plan which are applicable to its district.

COMMENTARY. Section 1.07 (12) directs the governing boards to cooperate with the state board in this respect and to furnish necessary technical information and services. It is essential that the governing boards participate actively in the formulation of the State Water Use Plan since they will play a major part in the implementation of its objectives through their administration of the various permit systems.

(13) The state board shall not adopt or modify the state water use plan or any portion thereof without first holding a public hearing on the matter. At least ninety (90) days in advance of

176. MALONEY, PLAGER, & BALDWIN §131.

such hearing the state board shall notify any affected governing boards, and shall give notice of such hearing by publication within the affected region pursuant to section 1.09 of this code.

COMMENTARY. Section 1.07 (13) states that no portion of the State Water Use Plan shall be adopted or modified without a public hearing first being held. Hearing procedures are set out elsewhere in the code.<sup>177</sup> Since the plan will be adopted in many stages, a great number of such hearings will be held. While this will add greatly to the plan's expense, it is felt that such hearings will be beneficial.<sup>178</sup> They will enable conservationists and water users to present views and information before the state board and the plan should receive greater public acceptance through this process.

# **§1.08** State Water Plan

(1) The state water use plan and the state water quality plan, taken together, shall constitute a single unified plan for water resources use, conservation, and development. This overall plan shall be known as the state water plan.

(2) Respective portions of the state water use plan and the state water quality plan shall be developed together to achieve maximum coordination.

COMMENTARY. An obvious and important part of any planned approach to water resources development must be a study of the relationship of water pollution and water use. It is intended that the State Water Use Plan and the State Water Quality Plan be closely coordinated. Together these two plans would constitute a master plan known as the State Water Plan. This provision is original.

\$1.09 Adoption of Regulations by the State Board

(1) The state board shall adopt, promulgate, and enforce such regulations as may be necessary or convenient to administer the provisions of this code.

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

(a) The proposed regulations shall be contained in a reso-

177. MODEL WATER CODE §1.09.

178. Similar hearings are required under KAN. STAT. ANN. §82a-905 (1969).

lution adopted by the state board at a regular or called meeting and included in the minutes of its proceedings.

(b) Within ten (10) days of the adoption of such resolution, notice of the regulation in the form of a summary thereof (or in full, at the discretion of the state board) shall be published once in four (4) newspapers of general circulation in the state. This notice shall fix the time and place for a public hearing before the state board to be held not less than ten (10) or more than twenty (20) days from the date of publication.

(c) Opportunity shall be afforded interested persons to present their views at such public hearing either orally or in writing or both, at the discretion of the state board. Objections may be raised to both the nature and form of such regulation. Following such hearing, the state board may amend, revise, or rescind the resolution, which action shall be set forth in minutes of its proceedings, and by resolution adopt the regulation as proposed or as amended, or revised, or may determine that no regulation is necessary.

(d) Upon the adoption of any regulation as provided, a copy thereof certified by the chairman shall, within five (5) days of the adoption thereof, be filed in the office of the secretary of state and shall become effective fifteen (15) days after such filing except as hereafter provided.

(e) Regulations relating to the internal organization or management of the state board not affecting the public interest shall be adopted by resolution recorded in the minutes of its proceedings and shall become effective immediately upon the filing of a copy thereof, certified by the chairman, in the office of the secretary of state.

COMMENTARY. Most of the provisions of this section concerning public hearings, records, filings, and publications were taken directly from the Florida Administrative Procedure Act.<sup>179</sup> The purpose of this act is to guarantee minimum due process to those who are regulated and to insure that the general public is kept aware of the agency's activities. Section 1.09 governs only rules and regulations and does not affect orders by the state agency such as might be issued in conjunction with a weather modification permit application.

Under the Florida Administrative Procedure Act there appears to

179. FLA. STAT. ch. 120 (1971). See Evans, Procedural Due Process: Florida's Uniform Administrative Procedure Act, 21 U. MIAMI L. REV. 145 (1966).

be a distinction between "regulation" and "order" with regard to agencies, although the terms are often interchanged and confused. A regulation has general application, affects the rights of the public or other interested parties, and is similar to a legislative enactment.<sup>180</sup> Usually an order is more specific, applies only to a particular instance or party, and is similar to a judicial pronouncement. This distinction has been observed in the Model Water Code.

In Florida, the method of appeal from a regulation differs considerably from that of an order. An action for declaratory judgment regarding the validity of a regulation set by an agency may be brought in the circuit court of the county in which the affected party resides or in which the executive offices of the agency are maintained.<sup>181</sup> On the other hand final orders may be appealed by certiorari to the district court of appeal within the time and manner prescribed by the Florida appellate rules.<sup>182</sup>

Under the present statutory scheme in Florida, the Department of Natural Resources is given the power to "make, adopt, promulgate, amend and repeal all rules and regulations necessary or convenient for the carrying out of the duties, obligations, powers and responsibilities conferred on said department or any of its divisions."<sup>183</sup> No provision is specifically made for a public hearing as in §1.07 (2) of the Model Water Code. Publication by the department is required under the Florida statutes.<sup>184</sup> The provision states that "[a]ll rules and regulations shall be published in a newspaper or newspapers of general circulation in the state and shall take effect and be in force at the time specified therein."185 A criminal penalty is provided for violation of such rules or regulations.<sup>186</sup> The provisions of the Model Water Code are considerably more detailed and rigorous. The normal method of adopting a rule or regulation in Florida is set forth in the State Administrative Procedure Act.<sup>187</sup> Under this provision a public hearing must be held. Notice of this hearing is given by "publication in four or more newspapers of general circulation in this state,"188 This same procedure is required by \$1.07 (2) (c) and, on

180. Polar Ice Cream & Creamery Co. v. Andrews, 146 So. 2d 609, 612 (1st D.C.A. Fla. 1962).

181. Fla. Stat. §120.30 (1971).

182. Id. at §120.31.

183. Id. at §370.021 (1). 184. FLA. STAT. §370.021 (3) (1971).

185. Id.

187. FLA. STAT. §120.041 (4) (1971).

188. Id. at §120.041 (4) (a).

186. Id. at §370.021 (1) (misdemeanor: \$500 or 6 months).

final adoption by the agency, a copy of the rule would be filed with the secretary of state. In Florida, the secretary of state would publish the rule in the Florida Administrative Register.<sup>189</sup>

While the singular is used in the Model Water Code, there is no limitation intended on the number of rules or regulations that may be adopted at one time.

Subsection (e) of (2) provides that public hearings need not be held before adoption of regulations relating to purely internal operations of the agency. In Florida such matters are not included within the scope of the Administrative Procedure Act. The definition of "rule" under the Florida statute specifically excludes any "matter concerning only the internal management of the agency."<sup>190</sup>

By way of contrast, the Model Water Use Act provides for a hearing, but does not require that one be held *before* a rule can become effective.<sup>191</sup> There is no provision for notice by publication or otherwise, nor is any distinction made between a "rule" or "regulation" and "order." It would appear, from the contents of §§212 and 213 of the Model Water Use Act, that a hearing under §211 is primarily a quasi-judicial proceeding in which an aggrieved party can challenge a rule, regulation, or order of the commission after it has become effective. However, power is given in another section of the Model Water Use Act to establish rules concerning notices and hearings.<sup>192</sup> This provision may allow the board to require hearings prior to the adoption of regulations.

Subsection (1) is original. Subsection (2) is taken from a Florida statute.<sup>193</sup>

## \$1.10 Enforcement Proceedings before the State Board

(1) All proceedings before the state board concerning the enforcement of any provision of this code or any regulation adopted pursuant thereto, or the issuance, modification, or revocation of any permit or license under this code by the state board, shall be conducted in accordance with this section. However, review of actions of the governing board pursuant to section 1.21 of this code shall not be governed by the provisions of this section.

(2) Parties affected by action of the state board shall be timely

189. Id. at §120.051.

190. Id. at §120.021 (2).

191. MODEL WATER USE ACT §211 (1958).

192. Id. at §202 (7).

193. Fla. Laws 1955, ch. 55-29965, §11, repealed, Fla. Laws 1971, ch. 71-377, §111.

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

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

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

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

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

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

(7) Each witness who appears by order of the state board shall receive for his attendance the same fees and mileage allowed by law to witnesses in civil cases, which shall be paid by the parties at whose request the witness is subpoenaed.

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

(9) The state board is authorized to hold conferences for the purpose of consolidating applications for a hearing, selecting dates for a hearing satisfactory to the parties, exploring all feasi-

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ble methods to eliminate surprise and delay, and to shorten the hearing, including arrangements for the parties in advance of the hearing to exchange written qualifications of professional expert witnesses, and maps, charts, engineering analyses, and other items contemplated for introduction as evidence, and to encourage stipulations among the parties directed toward the same or similar ends.

(10) An agent of the state board may preside over any proceedings under this section before the state board and, subject to final approval by the state board, exercise in its name any and all of the powers enumerated in this section.

COMMENTARY. Under the Model Water Code there are basically two types of proceedings. In a regulatory proceeding, the state board acts in a legislative capacity. The result of such a proceeding will normally be a regulation which affects a particular class of persons. These proceedings are regulated by \$1.09. The second type of hearing is an enforcement proceeding under which the state board acts in a quasijudicial capacity. The result of such a hearing will normally be an order which affects only those persons who are parties to the proceeding. The section is designated to afford procedural due process while at the same time providing a simple and inexpensive method of determining issues. Most of the powers given to the state board under \$1.10 are presently exercised by numerous federal and state administrative agencies. The provisions of this section were taken from various sources.<sup>194</sup>

# \$1.11 Judicial Review of Regulations and Orders of the State Board

(1) (a) Any affected party may obtain a judicial declaration as to the validity, meaning, or application of any regulation of the state board by bringing an action for declaratory judgment in the [appropriate] court of the county in which the executive offices of the state board are maintained.

194. Subsection (1) is original; subsection (2) was taken from FLA. STAT. \$120.23 (1971); subsection (3) was derived from CAL. WATER CODE \$1080 (West 1971); subsection (4) was modeled after FLA. STAT. \$373.181 (1971); subsection (5) was patterned after CAL. WATER CODE \$1100 (West 1971); subsection (6) is a modified version of MINN. STAT. ANN. \$105.44 (6) (1964); subsection (7) was taken from CAL. WATER CODE \$1081 (West 1971); subsection (8) came from the MODEL WATER USE ACT \$212 (b) (1958); and subsection (9) is original.

(b) In addition to any other ground which may exist, any regulation of the state board may be declared invalid, in whole or in part, for a substantial failure to comply with the provisions of this code.

COMMENTARY. Subsection (1) provides for judicial interpretation of regulations of the state board by means of an action for a declaratory judgment from a state court of competent trial jurisdiction. It should be noted that this is the exclusive method of judicial review of a regulation, and should be contrasted with subsection (2) which provides for judicial review of orders. Also it should be noted that the proper method of appeal under this subsection is an action for declaratory judgment. Extraordinary writs, such as mandamus and prohibition, should be allowed only when a declaratory judgment would clearly be inappropriate. The Model Water Use Act provides for a hearing by the commission to review any rule, regulation, or order at the request of an aggrieved party.<sup>195</sup> Another section of the Model Water Use Act<sup>196</sup> permits judicial review of a "final order or decision of the Commission."197 It is not clear whether this would allow judicial review of a regulation. Clearly the method of appeal for a regulation under the Model Water Use Act, if one exists at all, is the same as that for an order, in contrast to the procedure established under the Model Water Code.<sup>198</sup>

This provision was taken from a Florida statue.<sup>199</sup>

(2) Any party aggrieved by a final order in any proceeding before the state board under sections 1.10 or 1.22 may seek judicial review of such order by petition for certiorari to the [appropriate] court within the time and manner prescribed by the state appellate rules.

COMMENTARY. Subsection (2) provides for appellate review of final orders issued by the state agency. This section follows the procedure provided by the Florida Administrative Procedure Act.<sup>200</sup>

195. MODEL WATER USE ACT §211 (1958).

197. Id.

198. There is, however, an alternative provision of THE MODEL WATER USE ACT, §212 (alt. 2), which substitutes the state administrative procedure act for the hearing and judicial review sections of the act.

199. FLA. STAT. §120.30 (1971).

200. Id. at §120.31 (1).

<sup>196.</sup> Id. at §213 (a).

The Florida statute provides that venue shall be "the appellate district which includes the county wherein hearings before the hearing officer or agency, as the case may be, are conducted, or if venue cannot be thus determined, then the appellate district wherein the agency's executive offices are located."<sup>201</sup>

Judicial review of proceedings by the Division of Interior Resources is also provided by the Florida statutes.<sup>202</sup> The statute formerly stated that the appellant must first resort to the Water Resources Appeal Board established under another provision.<sup>203</sup> The Water Resources Appeal Board has now been abolished. The appeal from the Division of Interior Resources at present is to the district courts of appeal. Presumably, as an alternative, an appellant could proceed under the Administrative Procedure Act.<sup>204</sup> A significant difference, however, is that an appeal before the district court under the Florida Administrative Procedure Act is by certiorari,<sup>205</sup> while under the 1957 Water Resources Act<sup>206</sup> it is a matter of right. Also, under the 1957 Water Resources Act, "no presumption shall be indulged as to the correctness of the action of any local board hereunder ... in adopting, repealing or amending any rule or regulation or in determining the reasonableness thereof."207 On the other hand, no mention is made of burden of proof in either chapter 120 or 59 of the Florida Statutes (covering appellate review in general). Therefore, it would seem that the appellant would have the burden of showing that the findings or orders of the administrative board were erroneous.<sup>208</sup>

The requirements of the Model Water Use Act are much less rigorous.<sup>209</sup> Judicial review is provided for and the appellant's burden of proof is specified in one of three alternatives.<sup>210</sup> Another alternative in the Model Water Use Act<sup>211</sup> states that the Model State Administrative Procedure Act shall be substituted.<sup>212</sup> On the other hand, the

201. Id. 202. Id. at §373.173.

203. Fla. Laws 1963, ch. 63-336, §9, repealed, Fla. Laws 1969, ch. 69-106, §32 (12).

204. Fla. Stat. §120.31 (1) (1971).

205. Id. 206. Id. at §373.173 (1).

207. Id. at §373.173 (3).

208. See Pensacola Transit, Inc. v. Douglass, 160 Fla. 192, 34 So. 2d 555 (1948); Miami Bridge Co. v. Railroad Comm'n, 155 Fla. 366, 20 So. 2d 356 (1945); Atlantic Coast Line R.R. v. Railroad Comm'n, 149 Fla. 245, 5 So. 2d 708 (1942); Great Southern Trucking Co. v. Douglass, 147 Fla. 552, 3 So. 2d 526 (1941).

209. See MODEL WATER USE ACT §211 (1958).

210. Id. at §213.

211. Id. at §212 (alt. 2).

212. Instead of §§212 and 213 of the Model Act.

Iowa Code does not differentiate between hearing and rule-making procedures and permit application proceedings.<sup>213</sup>

This provision is original.

# **\$1.12** Appropriation of Funds to Water Management Districts

The state board shall allocate to the water management districts from funds appropriated to the state board such part thereof as may be necessary for the administrative expenses of such districts. The governing boards shall submit annual budgets to the state board.

COMMENTARY. Under the Model Water Code, the administrative expenses of the district will be financed through state funds rather than by means of local ad valorem taxation. It is hoped that this method of funding will enable the state board to exercise sufficient control over the water management districts to insure a unified water policy for the state.

It should be emphasized that the state board must support only the regulatory activities of the district. Ad valorem taxation will remain the primary means of financing flood control and other construction projects.

The Model Water Use Act makes no provision for the financing of its operations.<sup>214</sup> This is no doubt because the commission is a state agency which would be funded through periodic appropriations by the state legislature.

Florida courts have not taken a liberal attitude towards the taxing power, but rather have required several factors to be present before permitting taxation by districts.<sup>215</sup>

Special districts may raise revenue through assessments on an acreage or other basis, through service charges, or through utilization of ad valorem taxation.<sup>216</sup> This taxing power is a delegation from the

213. See generally IOWA CODE ANN. ch. 455 (1949), as amended (Supp. 1971).

214. But see MODEL WATER USE ACT §202 (10) (1958).

215. For a general discussion of the limitations and powers of special districts to levy taxes, see Note, Special District Taxation, 13 U. FLA. L. REV. 531 (1960).

216. The activities of the two existing water management districts in Florida are funded by state and local contributions. For a discussion of district financing see MALONEY, PLAGER, & BALDWIN §101.1 (g). FLA. STAT. §378.03 (1971) provides for a Water Resources Development Account. For a district to receive money from this state account, it must adopt a resolution addressed to the Division of Interior Resources requesting the amount and itemizing its use. FLA. STAT. §378.05 (1971). Originally such a request was limited to the cost legislature; therefore, the legislature must set definite limits as to the rate of levy, the amount to be collected, and the maximum bonded indebtedness to be paid by the tax. The Florida supreme court, relying upon the requirement of Article IX, section 3 of the Florida Constitution,<sup>217</sup> that no tax shall be levied except in pursuance of law, has struck down legislation that lacked these limitations as unlawful

of the district's construction share and the cost of the acquisition of land for water storage areas. Fla. Laws 1949, ch. 25209, §4. By amendment, the total requested may now also include sums for highway and bridge construction and for administration and promotion. FLA. STAT. §378.04 (1971).

At the district level, an ad valorem tax is levied. When the Central and Southern Florida Flood Control District was formed in 1949, it was thought that a "benefits" tax would be levied. However, under pressure from a legislature dominated by rural interests, the benefits tax was deleted from the authorizing legislation for the district, apparently on the assumption that an ad valorem tax on the higher property values in the urban areas would allow the rural areas to escape with less than a proportionate share of the tax burden. See J. DE GROVE, THE FLORIDA FLOOD CONTROL DISTRICT 11 (1960). The district is authorized to levy an annual ad valorem tax not to exceed 1 mill on the dollar of assessed valuation. Fla. Laws 1949, ch. 25270, §3. The millage has fluctuated over the years, but has always remained below 1 mill.

The Southwest Water Management District levies two kinds of taxes. A district-wide ad valorem tax not to exceed .3 of a mill is levied for central district administration costs, all planning and work in the Green Swamp Area (which has no local basin board), and for maintenance and operation of works (Fla. Laws 1961, ch. 61-691, §8 [1]); see also MALONEY, PLAGER, & BALDWIN §101.2. A watershed basin tax is also levied. This tax, not to exceed 1 mill (Fla. Laws 1961, ch. 61-691, §8 [2]), varies in each basin according to the basin's requirements. It covers such expenses as financing studies, plans, rights of way, relocations, and administrative activities of the local basin water management board. Fla. Laws 1961, ch. 61-691, §7 (2).

In Bair v. Central and Southern Florida Flood Control District, 144 So. 2d 818 (Fla. 1962), the constitutionality of the district was challenged by landowner-taxpayers on the basis that the levy was not in proportion to benefits received and therefore constituted a taking of private property without just compensation. The court rejected this contention and distinguished between a special assessment on abutting property to pay for a direct benefit to the prop-erty (such as a pavement) and an ad valorem assessment upon all the lands in a taxing district formed by statute in order to effectuate a general and common benefit to the district as an entirety. In the former case direct benefit must be at least equal to the assessment, but in the latter (of which the Central and Southern District was considered to be an example) no immediate, direct, or proportional benefit must accrue to the lands assessed. The legislative authorization of uniform levy is presumed to be based on a finding of some benefit, direct or indirect (and not necessarily proportional), to all real property in the district. In the Bair case, the right to levy an ad valorem tax was also attacked on the ground that it violated article IX, section 2, of the Florida Constitution (now FLA. CONST. art. VII, §1 [a]) which prohibited ad valorem taxes on real property for state purposes. The court summarily dismissed this by simply concluding that the purposes for which the levy in this case was authorized were by nature local and not statewide.

217. This is now FLA. CONST. art. VII, §1 (a).

attempts to delegate the taxing power of the state.<sup>218</sup> A Florida statute<sup>219</sup> provides that the circuit court shall decide whether a flood control district shall be established after considering benefits and costs. This delegation has been held to be lawful.<sup>220</sup>

This provision is original.

## \$1.13 Annual User-Surveillance Fee—Fee Scale—Collection

(1) Every person who requires a permit under chapters 2 or 5 of this code shall be subject to a user-surveillance fee. This fee shall be an annual fee based on a schedule established by the state board.

(2) The user-surveillance fee shall be collected on an annual basis by the state board or an appropriate agency designated by the legislature. All monies received under the provisions of this section shall be earmarked and allocated for the use of the water management districts, and shall be in addition to monies otherwise appropriated in the general appropriation bill; provided, however, that an amount not exceeding ten (10) per cent of such monies shall be used for the cost of collection and administration.

(3) The failure of any person to pay the user-surveillance fee established hereunder shall constitute grounds for revocation of his permit.

COMMENTARY. The user-surveillance fee section is original.<sup>221</sup> The

218. Merriman v. Hutchinson, 95 Fla. 600, 116 So. 271 (1928); Stewart v. Daytona and New Smyrna Inlet Dist., 94 Fla. 859, 114 So. 545 (1927); but see State ex rel. Davis v. Ryan, 118 Fla. 42, 158 So. 62 (1934).

219. FLA. STAT. §378.12 (1971).

220. Cocoa Rockledge Drainage Dist. v. Garrett, 140 Fla. 359, 191 So. 687 (1939); Burnett v. Green, 105 Fla. 35, 144 So. 205 (1932).

221. There are eight states that have some sort of fee system. Each is unique in concept and application: CAL. WATER CODE \$13169(b) (West 1971) (board assesses the fee on the basis of the cost of testing and the cost of licensing the use of any substance); DEL. CODE ANN. tit. 7, \$6010 (Supp. 1970) (the commission may establish a fee schedule for filing applications, etc., and may collect its expenses for processing the applications and for the hearings held pursuant to that application); ILL. ANN. STAT. ch. 111½, \$1004(i) (Smith-Hurd Supp. 1970) (Environmental Protection Agency has the power to set fees); MICH. COMP. LAWS ANN. \$323.13(d) (Supp. 1971) (administrative fee of fifty [\$50] dollars and an additional fee based on effluent content); MISS. CODE ANN. \$7106-122(c) (Supp. 1971) (legislative fee scale based on size of the corporation or municipality); N.J. STAT. ANN. \$32:11D-20 (1963) (the river basin commission has limited fee-setting ability to "fix, alter and revise rates, rentals, charges and tolls and classifications thereof, for the use of facilities which it may own or operate . . ."); VT. STAT. ANN. tit. 10, \$912 a (e) (3) (Supp.

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user-surveillance fee was conceived in the belief that the waters of the state belong to the people of the state and are for their use, including agricultural, industrial, and recreational uses. However, use of the waters requires a degree of monitoring to insure reasonable use. One of the primary stumbling blocks to effective pollution control has been under-financing by state legislatures.<sup>222</sup> Those who use the waters and necessitate a monitoring system should help defray the cost of that monitoring program. The principle is the same as that of a driver's license fee used to help defray the cost of monitoring highway safety.

Under §2.01, everyone who requires a permit must pay the usersurveillance fee. Although the permit section determines who must pay the fee, the user-surveillance fee is not a permit fee. It is to be paid annually regardless of the revocation and reissuance of permits during a given year. The user-surveillance fee would be assessed pursuant to a scale established by the state board. The fee may be collected annually by the state board or this duty may be delegated to the appropriate state or local agency. All monies received, less a maximum of 10 per cent for collection expenses, are to be earmarked and allocated for the use of the water management districts and are to be in addition to monies otherwise appropriated to them in general appropriations. The intent is to supplement the agencies' budgets and not to decrease them in proportion to the amount of fees collected annually.

## **§1.14** Water Resources Development Account

(1) There is hereby established a continuing fund in the general fund in the state treasury to be known as the water resources development account.

COMMENTARY. The Water Resources Development Account was established to provide continuity in long-term programs of planning, research, and construction. The normal expenses of administration are to be funded by annual appropriations from the legislature. It is hoped that the existence of such a fund will enable the state board to secure funding more easily from federal and private sources for

<sup>1971) (</sup>the board sets charges for holders of temporary pollution permits); W.VA. CODE ANN. 20-5A-6 (1964) (provides for a 10 filing fee for a permit application).

<sup>222.</sup> See Maloney & Ausness, Water Quality Control: A Modern Approach to State Regulation, 35 ALBANY L. REV. 28, 35-36 (1970).

some of the long-range aspects of its water development program. This provision is original.<sup>223</sup>

(2) The state board may, subject to any limitations otherwise imposed by law, receive and accept in the name of the state any funds which may be offered or become available from federal grants or appropriations, private gifts, donations, or bequests. Such funds shall be deposited in the water resources development account.

(3) Legislative appropriations, other than annual appropriations for the administration of this code by the state board, shall be credited to the water resources development account.

### COMMENTARY. These provisions are original.

(4) In accord with the powers granted to the state board, it may expend funds from the water resources development account for administration and to finance any project for the protection, conservation, and development of the water resources of this state.

(5) The state board by regulation shall establish a schedule of fees to accompany application for any permit authorized under chapters 2, 3, 4, and 5 of this code.

COMMENTARY. This subsection requires that a process fee accompany each application for a permit under the provisions of all but chapter 6 of the Model Water Code, which provides for a separate fee system.

Fees are presently imposed on the acquisition of water rights in various jurisdictions. In most states such fees are charged merely to defray the costs of operating the permit system.<sup>224</sup> It is possible, however, that fees may be imposed for the actual use of water. If the state were to exact periodic fees for the use of water, it is conceivable that such a schedule of charges could be established which would discourage wasteful amounts of use and perhaps even some uses at wasteful locations or for wasteful purposes. There appears to be no doubt that fees may constitutionally be charged by the state in connection with new uses.<sup>225</sup>

223. Cf. FLA. STAT. §378.03 (1971).

224. Davis, Australian and American Water Allocation Systems Compared, 9 B.C. IND. & COM. L. REV. 647, 699 (1968).

225. City of Trenton v. New Jersey, 262 U.S. 182 (1923); City of Newark v. New Jersey, 262 U.S. 192 (1923).

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New Jersey now charges fees for amounts of water diverted for consumptive use or flow utilized for power.<sup>226</sup> Power companies in Nebraska<sup>227</sup> and Oregon<sup>228</sup> pay fees proportional to the amount of water used.

This provision is original.

# **§1.15** Water Management Districts: Boundaries

The state shall be divided into the following water management districts:<sup>229</sup>

(Legal description of the boundaries of each district to follow.)

COMMENTARY. This section provides for the creation of water management districts. The boundaries of such districts would represent a hydrologic unit such as a river basin.<sup>230</sup>

Water management districts are now created under chapter 378, Florida Statutes. The formula is fairly elaborate and to date no districts have been created in this fashion.<sup>231</sup> Both the Central and Southern Florida Flood Control District<sup>232</sup> and the Southwest Water Management District<sup>233</sup> were created by special legislation, although they otherwise operate under chapter 378.<sup>234</sup>

This provision is original.

### **§1.16** Governing Board

(1) The governing board of each water management district shall be composed of five (5) members who shall own real property within the district and shall reside within the district. Each member's term of office shall be for five (5) years or until his successor has been appointed and approved; provided, however,

226. N.J. STAT. ANN. §58:1-46 (1966).

227. NEB. REV. STAT. §46-236 (1968).

228. Ore. Rev. Stat. §543.710 (1969).

229. Suggested districts for Florida might be as follows: (1) Central and Southern Florida; (2) Southwest Florida; (3) Northeast Florida; (4) Northwest Florida; and (5) Suwanee River.

230. FLORIDA STATE WATER CONTROL PLAN FOR 1960-1961 at 5.

231. FLA. STAT. §§378.08-.12 (1971).

232. Fla. Laws 1949, ch. 25270.

233. Fla. Laws 1961, ch. 61-691.

234. To initiate formation of a district the Division of Interior Resources joined by the owners of 51 per cent of the acreage affected must sign a petition and file it with the clerk of the circuit court in each county where land in the proposed district is located. The contents of this petition are specified in FLA. STAT. §378.08 (1971).

that of the members composing the initial board, one shall serve for a term of five years, one for a term of four years, one for a term of three years, one for a term of two years, and one for a term of one year. Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of that term. Members shall be eligible for no more than two (2) consecutive terms. Service for a partial term, while filling a vacancy, shall not count against the maximum length of service allowed a member. The governor may remove from office any officer in the manner and for cause defined by the laws of this state applicable to situations which may arise in the district.

COMMENTARY. The structure of the governing board follows closely the Florida model.<sup>235</sup> The experience of the Central and Southern Florida Flood Control District since 1949 has shown that this system is basically sound.<sup>236</sup> A number of changes have been made, however, to streamline the operation of the water management districts created under the Model Water Code. Much detail has been omitted in the draft itself in order to provide for maximum flexibility.

Five is the number of board members provided for in both the Florida statute<sup>237</sup> and the Model Water Use Act.<sup>238</sup> It was felt that divergent interests could not be adequately represented if a smaller number were chosen. On the other hand, a larger number of board members might impede efficient operation. An odd number was chosen to avoid deadlocks.

The requirement in the Florida statute<sup>239</sup> that not more than one member of the board shall be from the same county if five or more counties make up the district was omitted because a statutory requirement to this effect might be unduly limiting.<sup>240</sup> However, it can be expected that urban and rural areas will not always agree on policies and priorities and that both interests should be represented on the

236. Judicial administration was considered and rejected. For a discussion of regulation by the courts see Maloney, *Florida's New Water Resources Law*, 10 U. FLA. L. REV. 119, 135 (1957); O'Connell, *Iowa's New Water Statute—The Constitutionality of Regulating Existing Uses of Water*, 47 IOWA L. REV. 549, 571-75 (1962).

237. FLA. STAT. §378.13 (1971).

238. MODEL WATER USE ACT §201 (a) (alt. 1) (1958).

239. FLA. STAT. §378.13 (2) (1971).

240. Cf. FLA. STAT. 378.13 (2) (1971) with MODEL WATER USE ACT 201 (b) (alt. 2) (1958).

<sup>235.</sup> See Fla. Stat. §§378.13, .14 (1971).

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board. Thus, in Florida, despite the existence of the Florida statutory provision mentioned above,<sup>241</sup> agricultural interests in the Kissimmee area have been dissatisfied with the emphasis placed on meeting the water needs of the great urban areas of south Florida by the central and southern project. Chapter 378, Florida Statutes, provides that members (except the first board) serve three-year terms.<sup>242</sup> In the code the term of office has been increased to five years to provide for greater continuity. On the other hand, the code contains a limitation not found in Florida that members may not normally serve more than two consecutive terms. Presumably, however, a board member could wait a year after his two terms have expired and start the cycle anew. This provision was added to prevent a member from becoming so entrenched that he was reappointed indefinitely. Provision is also made in this subsection for appointments to unexpired terms. A similar provision is found in the Florida statutes.<sup>243</sup> A power of removal such as that found in chapter 378, Florida Statutes, has been inserted.<sup>244</sup> This section is modeled after a Florida statute.<sup>245</sup>

(2) The member of the initial governing board who is appointed for a five-year term shall serve as chairman for the first year. Thereafter, the members of the governing board shall annually elect one of their number as chairman. In the event of the absence or illness of the chairman, the senior member of the governing board shall act as temporary chairman.

The members of the governing board shall annually elect from among their number a secretary and a treasurer.

COMMENTARY. This subsection parallels \$1.05 (4) pertaining to the state water resources board. In Florida, the chairman and other officers are elected.<sup>246</sup> The Florida statute does not require the secretary or treasurer to be a member of the governing board. In the

241. FLA. STAT. §378.13 (2) (1971).

242. Id. at §378.13 (1).

243. Id. at §378.14 (1). A general and more detailed statute exists to which reference might be made. FLA. STAT. §114.04 (1971).

244. For other examples of removal powers in Florida, see, e.g., FLA. STAT. §467.01 (3) (1971), Board of Architecture; FLA. STAT. §476.17 (4) (1971), Barber's Sanitary Commission; FLA. STAT. §240.011 (2) (1971), Board of Regents; FLA. STAT. §§116.09, 128.06, 129.08, 142.03 (1971), county authorities; FLA. STAT. §§116.09, 128.06, 129.08, 142.03 (1971), county authorities; FLA. STAT. §391.02 (1971), Crippled Children's Council; FLA. STAT. §471.08 (1971), Engineer Examiners; FLA. STAT. §§112.40-.50 (1971), public officers generally.

245. FLA. STAT. §378.13 (1) (1971). 246. *Id.* at §378.15 (2).

Model Water Use Act the chairman is designated by the governor.<sup>247</sup> This alternative and several others have been discussed in the commentary to §1.05 of this code. Under the code, the member with the most seniority is designated temporary chairman in the absence of the permanent chairman. The Model Water Use Act suggests that the chairman designate a temporary chairman.<sup>248</sup> There is no applicable provision in the Florida statute. This subsection is original.

(3) Members of the governing board shall be appointed by the governor, subject to confirmation by the senate at the next regular session of the legislature, and the refusal or failure of the senate to confirm an appointment shall create a vacancy in the office to which the appointment was made.

COMMENTARY. Under chapter 378, Florida Statutes,<sup>249</sup> members of the governing board are to be appointed by the governor subject to confirmation by the senate.<sup>250</sup> Subsection (3) of the code contains a similar provision as does the Model Water Use Act.<sup>251</sup>

A study of multipurpose water districts in the Great Lakes states<sup>252</sup> revealed that governing boards of such districts are seldom elected: Illinois provides for river conservancy districts<sup>253</sup> and water authorities.<sup>254</sup> The river conservancy districts are governed by a five-member board of trustees, which is appointed by the commission of county judges.<sup>255</sup> Water authorities are governed by a board of at least three trustees appointed by the judge of the county court.<sup>256</sup> Michigan water

247. MODEL WATER USE ACT §201 (1958).

248. Id. at §201 (a) (alt. 1).

249. Fla. Stat. §378.13 (3) (1971).

250. In general, boards of this type in Florida are seldom elective. The prevailing method appears to be appointment by the governor subject to confirmation by the senate. *E.g.*, canal authority board of directors, FLA. STAT. §374.031 (1971); navigation district, board of commissioners, FLA. STAT. §374.311 (1971). The Florida general drainage act, FLA. STAT. ch. 298 (1971), is a significant exception to this rule. The mechanics of confirmation by the senate of gubernatorial appointees are found in FLA. STAT. §112.071 (1971).

251. MODEL WATER USE ACT §201 (b) (alt. 1) (1958).

252. Lauer, supra note 123, at 55-69.

253. ILL. ANN. STAT. ch. 42, §§383-410 (Smith-Hurd 1956), as amended, (Smith-Hurd Supp. 1971).

254. Id. at ch. 1112/3, §§223-50 (Smith-Hurd 1966), as amended, (Smith-Hurd Supp. 1971).

255. Id. at ch. 42, §386 (a) (Smith-Hurd 1956), as amended, (Smith-Hurd Supp. 1971).

256. Id. at ch. 1112/3, §225 (Smith-Hurd 1966), as amended, (Smith-Hurd Supp. 1971).

management districts have five-member boards appointed by the water management commission,<sup>257</sup> which is composed of the drainage commissioners of the counties within the district and other designated county or municipal representatives.<sup>258</sup> The Minnesota Water Resource Board appoints three to five managers to govern watershed districts.<sup>259</sup> In New York, the governing board of small watershed districts is chosen by the county board of supervisors.<sup>260</sup> Ohio conservatory districts are governed by three-member boards appointed by the district's special court for five-year terms.<sup>261</sup>

Unlike the case of the state board, in the Model Water Code no particular qualifications are required for governing board members other than residence and ownership of real property. Such limitations would be undesirable since the number of available candidates at the local level may be relatively small.

This provision is original.

(4) The governing board shall appoint as its executive director an engineer or hydrologist who shall serve as the board's chief administrative officer. The executive director shall meet the qualifications set forth in section 1.05 (7) and other reasonable qualifications established by the governing board.

COMMENTARY. The administrative staff of the governing board is to be headed by an executive director. The position of executive director of present Florida boards is not specifically provided for in chapter 378, Florida Statutes, but authority could be predicated on the general employment powers granted under that statute.<sup>262</sup> Both presently existing water management districts employ an executive director. The popularity of this office in the state level boards and agencies has been discussed under §1.05 (7). This officer will have supervisory powers over the day-to-day operation of the districts. This subsection is original.

(5) The governing board may employ a legal staff for the purposes of: (a) providing legal counsel on matters relating to the

257. MICH. STAT. ANN. §280.554 (1967).

258. Id. at §280.553 (Supp. 1971).

259. MINN. STAT. ANN.  $\S$  112.39 (3), (4), 112.42 (3) (1964), as amended, (Supp. 1971).

260. N.Y. COUNTY LAWS §§299-p-1, 2 (McKinney Supp. 1970).

261. Ohio Rev. Code Ann. §6101.10 (Supp. 1970).

262. See Fla. Stat. §378.15 (4) (1971).

exercise of its powers and duties; (b) representing it in all proceedings of an administrative or judicial nature; and (c) otherwise assisting in the administration of the provisions of this code.

COMMENTARY. The state board is given similar powers. See the discussion of these under the commentary to §1.05 (8).

(6) Members of the governing board shall be compensated at a rate not to exceed \_\_\_\_\_\_ dollars per annum. In addition, each member shall be reimbursed for traveling and other necessary expenses incurred in the performance of his duties as a member.

COMMENTARY. Section 1.16 (6) of the code provides for some annual compensation for members of the governing board. In this regard it differs from present Florida practice. The Florida statutes<sup>263</sup> now provide that "[t]he chairman and members of the board shall receive no compensation for such services, but while officially on work for the district shall receive their actual traveling expenses, and subsistence and lodging, not to exceed the statutory amount allowed state officers and employees, and for other expenses in the actual amount incurred therefor."<sup>264</sup> Per diem and traveling expenses are also authorized in Florida.<sup>265</sup>

The Model Water Use Act provides for annual compensation under one alternative.<sup>266</sup> The purpose of annual compensation, even if it is comparatively low, is to encourage professional people, such as doctors, lawyers, engineers, and educators, to accept positions on the board. Service entirely without pay requires more of a sacrifice than many otherwise qualified persons are able to make and unnecessarily restricts the number of persons available for the office. It must be said, however, that service on such boards on both the state<sup>267</sup> and local<sup>268</sup> levels is generally gratuitous in Florida.

This provision is original.

263. Id. at §378.15 (3).

264. Id.

265. Id. at §112.061.

266. MODEL WATER USE ACT §201 (b) (alt. 1) (1958).

267. See Commentary §1.05 (5) supra.

268. E.g., general drainage districts, board of supervisors, FLA. STAT. \$298.14 (1971) (although landowners may allow up to \$25 for each actual day on official business); navigation district, board of commissioners, FLA. STAT. \$374.351 (1971) (per diem and traveling only).

# (7) Regular meetings shall be held quarterly. Special meetings may be called by the chairman or at the request of a majority of the members of the governing board.

COMMENTARY. There is no way of knowing in advance how often the board would meet. No doubt this will vary considerably among the various boards. The three-month requirement is a minimum figure. The Central and Southern Florida Flood Control District, for example, holds public meetings each month.<sup>269</sup> Under the code the board as a whole would agree on regularly scheduled meetings in advance. Emergency or special meetings could then be called by either the chairman or a majority of the board.<sup>270</sup> This provision is original.

# (8) Three (3) members in attendance shall constitute a quorum. A complete record of the proceedings of the governing board shall be made and such record shall be open to public inspection.

COMMENTARY. A provision similar to this subsection is found in the Model Water Use Act.<sup>271</sup> No provision for a quorum is found in chapter 378, Florida Statutes. Quorum provisions, however, are found in connection with a number of state and local boards.<sup>272</sup> This subsection is original.

**§1.17** General Powers and Duties of the Governing Board

In addition to the other powers and duties allowed it by this code, the governing board is authorized to:

(1) Make surveys and investigations of the water supply and resources of the district and cooperate with the state board in similar activities.

COMMENTARY. Section 1.17 (1) permits the governing board to make surveys and investigations. These investigations would be primarily hydrologic, geologic, mapping, and engineering studies, although eco-

271. MODEL WATER USE ACT §201 (a) (alt. 1) (1958).

272. E.g., Game and Fresh Water Fish Commission, FLA. STAT. 372.06 (1971) (3 out of 5); navigation districts, FLA. STAT. 374.341 (1971) (3 out of 5).

<sup>269.</sup> C. & S.F.F.C.D., ANNUAL REPORT 4 (1966).

<sup>270.</sup> Meetings at required intervals are dictated by statute in Florida in connection with a number of state agencies. *E.g.*, Game and Fresh Water Fish Commission, FLA. STAT. §372.06 (1971) (quarterly); Advisory Council to the Division of Health, FLA. STAT. §381.131 (1971) (annually).

nomic and sociologic studies are by no means excluded. Once again, this power is also given to the state agency under 1.06 (1). The powers of cooperation provided under 1.06 (4) and (11) would certainly apply to activities under this subsection.

Multipurpose districts, such as those in California,<sup>273</sup> are given specific powers to conduct surveys and investigations. The Model Water Use Act contains a similar provision.<sup>274</sup> Water management districts in Florida, however, are not given specific powers to make surveys and investigations, but such power is implied by such provisions as section 378.01 (6), Florida Statutes, which authorizes the governing board to cooperate with the state division of health in the making of any surveys, investigations, and inquiries for the purpose of determining whether or in what manner the use of the waters may affect public health or welfare.<sup>275</sup>

The model for this subsection was section 74520, California Water Code. A similar, though more elaborate, provision is found in the Model Water Use Act.<sup>276</sup>

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

COMMENTARY. A right of entry is required for both surveys under \$1.17 (1) and for investigative and enforcement measures under the permit system. Such a power, for example, is found in the Model Water Use Act.<sup>277</sup> In Florida no right of entry is expressly granted to multipurpose districts under chapter 378, Florida Statutes, nor is any such power given to water regulatory districts created under chapter 373, Florida Statutes. The right of entry, however, is given to the Division of Interior Resources in connection with regulation of artesian wells,<sup>278</sup> and this power is also granted to other agencies by the Florida Statutes.<sup>279</sup>

273. See Cal. WATER CODE §74520 (West 1971).

274. MODEL WATER USE ACT §202 (1958).

275. Fla. Stat. §378.01 (6) (1971).

276. MODEL WATER USE ACT §202 (2) (1958).

277. Id. at §202 (3) (alt. 1) (1958).

278. FLA. STAT. §373.051 (1971).

279. Beach and shore preservation authorities may enter private property to make "surveys, soundings, drillings and examinations, and such entry shall not be deemed a trespass." FLA. STAT. §161.36 (5) (1971). Right of entry is also given to land surveyors. FLA. STAT. §472.14 (1971).

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This subsection was taken from section 202 (3) (alt. 2) of the Model Water Use Act and title 2, section 273 (15), Alabama Statutes.

(3) Acquire, lease, and dispose of such real and personal property as may be necessary in the performance of its functions, including the acquisition of real property for the purpose of conserving and protecting water and water-related resources as provided in section 1.23.

COMMENTARY. Subsection (3) allows the district to hold real and personal property in its own name or lease such property. No comparable provision is found in chapter 378 of the Florida Statutes.<sup>280</sup>

This provision is taken from the California Water Code.<sup>281</sup> This power is not specifically mentioned in the Model Water Use Act, apparently because it is regarded as an inherent power of any state agency. However, this power is found in the Iowa Code.<sup>282</sup>

(4) Acquire by purchase or condemnation according to law such lands, rights-of-way, and water rights as may be needed for flood control, recreation, conservation, and water resource development programs undertaken pursuant to the provisions of this code.

280. FLA. STAT. §378.16 (1) (1971) provides that the district is authorized to "hold, control and acquire by donation, lease or purchase, or to condemn any land, public or private, needed for rights-of-way or other purposes. . ." This section applies only to "district works." The power to acquire an office can be implied from FLA. STAT. §378.15 (5) (1971) which states that "the governing board may determine the location of its principal office and provide for the change thereof." Authority for ownership of personal property such as office supplies may be predicated on FLA. STAT. §378.04 (1971) which permits disbursements from the state's water resources development account to the district for "the acquisition of lands for water storage areas, for highway bridge construction, for administration and promotion" (emphasis added). In addition the governing board is authorized under FLA. STAT. §378.20 (1971) to levy an annual ad valorem tax to pay the cost of "works of said district, the maintenance, operation, and cost of administration, and such other costs as the governing board may determine to be necessary on account of said district."

One result of the lack of clear-cut power of ownership is the apparent control by the Department of Natural Resources (formerly the Board of Conservation) over this power. An opinion of the attorney general (ATT'Y GEN. BIENNIAL REP. 065-72) (1965-66) stated that title to lands acquired with funds under FLA. STAT.  $\S282.01$  (1971) (the general state appropriation bill) by the two water management districts should be taken in the name of the district, but purchases of rights-of-way, spoil areas, and land for storage areas should be made with the approval and consent of the state board of conservation.

281. CAL. WATER CODE §5901, art. IX (A) (8) (c) (West 1971).

282. IOWA CODE ANN. §455A.16 (Supp. 1971).

COMMENTARY. The right to acquire property by eminent domain will be required for two purposes: (1) acquisition of lands, rights-of-way, and water rights for construction of flood control and other works (this power is now possessed by Florida water management districts<sup>283</sup>); (2) use in connection with the permit system to eliminate uses of water which are not beneficial.<sup>284</sup> No condemnation power is found in the Model Water Use Act. Perhaps this is because the agency's primary function is to administer the permit system.

Water management districts in Florida, on the other hand, have shared responsibility with the federal government for construction of flood control works and improvement of waterways. These functions will be retained under the Model Water Code and regulation will be an additional, though extremely important, duty. It should be noted that condemnation powers are found in the Iowa Code.<sup>285</sup>

This provision is original.

# (5) Construct, maintain, and operate works for flood control and water resource development and exercise all the rights of ownership over waters contained within such works.

COMMENTARY. Subsection (5) gives the district the power to construct works and exercise control over the waters therein. In Florida, this power is now held by water management districts.<sup>286</sup> "Works," according to the Florida Statutes, "shall be those adopted by the governing board of the district."<sup>287</sup> Thus, virtually any waterbody, natural or artificial, as well as flood control and other structures can become district works.<sup>288</sup> The clause in §1.17 (5) of the Model Water

283. FLA. STAT. §378.16 (1971).

284. See MODEL WATER CODE §2.03 (4) infra.

285. IOWA CODE ANN. §455A.15 (Supp. 1971).

286. FLA. STAT. §378.01 (2), (3), (4) (1971).

287. Id. at §378.16 (2) (1971).

288. Id. at §378.01 (3) (1971) allows the district to control the water level of "all canals, lakes, rivers, channels, reservoirs, streams or other bodies of water owned or maintained by the district...." FLA. STAT. §378.01 (4) (1971) gives the district "general control and supervision over canals, lakes, rivers, ditches, channels, reservoirs, streams, or other bodies of water which are owned, maintained, or which are a work of the district, insofar as the quality of water may affect the public health, welfare, safety and utility of said bodies of water." Central and Southern Florida Flood Control District has for a number of years administered a permit system regulating surface water, on the basis of its ownership of waters within district works. See MALONEY, PLAGER, & BALDWIN §62.2 (c). A Florida statute specifically provides that the governing board shall have the authority "to prescribe the manner in which local works provided by Code which calls for exercise of "all rights of ownership over waters contained within such works" is designed to accomplish the same purpose as the Florida statute discussed above. With respect to artificial waterbodies, such as canals and man-made lakes, it would seem that all rights to consumptive use would be retained by the owner, here the district.<sup>289</sup> Even where such artificial waterbodies are navigable or connected to navigable waterbodies, no *consumptive* rights would accrue to anyone but the district.<sup>290</sup>

# (6) Appoint and remove agents and employees including specialists and consultants.

COMMENTARY. The water management district's power to appoint employees and agents in Florida is found in chapter 378, Florida Statutes.<sup>291</sup> A similar provision is found in the Model Water Use Act<sup>292</sup> and an Iowa statute.<sup>293</sup>

The administrative structure of the Central and Southern Florida Flood Control District is similar to what might be expected of those local districts operating under the Model Water Code.<sup>294</sup>

This subsection is original.

... private persons shall connect with and make use of the works of the district, to issue permits therefor, and to cancel the same for noncompliance with the conditions thereof, or for other cause." FLA. STAT. \$378.17(1)(1971).

289. See MALONEY, PLAGER, & BALDWIN §24.

290. See generally Evans, Riparian Rights in Artificial Lakes and Streams, 16 Mo. L. REV. 93, 106–10 (1951).

291. FLA. STAT. §378.15 (4) (1971).

292. MODEL WATER USE ACT §202 (5) (alt. 2) (1958).

293. IOWA CODE ANN. §455A.10 (Supp. 1971).

294. The staff of the Central and Southern Florida Flood Control District is divided into four divisions, each with a director and staff members. See MALONEY, PLAGER, & BALDWIN §101.1 (f). The Division of Administration includes the following functions: finance, planning, recreation, services, and legal matters. The Engineering Division assists, by recommendations to the Corps of Engineers, in the planning and detailed design work of the project. It also prepares all surveys, maps, and descriptions for land acquisitions, makes detailed studies of engineering problems not within the scope of the federal part of the project, and renders information and assistance of a general nature to local units of government and to landowners who desire to tie secondary works into the district's primary works. The Operation and Maintenance Division operates all project works (except a few operated by the federal government), issues permits for use of district facilities, and inspects and maintains a continuing record of all district works. The Real Estate Division has the responsibility of acquiring all land necessary for rights-of-way and other purposes, and manages district-owned land not actually used for project works.

The top administrative officials have traditionally recommended and implemented policies with the approval of the governing board. See J. DE GROVE.

(7) Appoint and fix the salary of an executive director who shall be an engineer or hydrologist with at least five (5) years of experience relating to water resources. The executive director shall be chief administrative officer and serve at the pleasure of the governing board.

COMMENTARY. This subsection authorizes the board to appoint an executive director. This officer will be the highest member of the administrative staff and will be responsible for the day-to-day operation of the district. Remarks under §1.05 (7) are applicable to his counterpart at the district level. In Florida this office is not specifically provided for in chapter 378, Florida Statutes, but both existing water management districts have always employed such an officer. The requirement that the executive director have an engineering or hydrologic background was imposed because he would have the greatest effect on implementation of the permit system and would probably preside over hearings on permit applications. This provision is patterned after a California statute.<sup>295</sup>

(8) Utilize the services or personnel of any state or local governmental agency with its consent, particularly the advisory staff of the state board.

COMMENTARY. Section 1.17 (8) allows the governing board to utilize the services of state and local employees. There is no comparable provision under chapter 378, Florida Statutes, although state coopera-

295. See CAL. WATER CODE §120 (West 1971).

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supra note 216. This staff involvement in policy-making has come about because the staff has more continuity and expertise than the politically appointed board. However, the governing board has final responsibility for policy decisions and has occasionally overridden policy recommendations by the executive director and his staff. No limitations are placed on salaries or hiring practices. An attorney general's opinion (ATT'Y GEN. BIENNIAL REP. 062-15) (1961-62) held that the Southwest Florida Water Management District is a public agency within the Florida state and county officers and employees retirement system, and its officers and employees are within the purview of that system. Another opinion of the attorney general stated that the executive director and other members of the staff of the Central and Southern Flood Control District are state employees within the purview of FLA. STAT. §112.061 (1) (1971) which governs subsistence and travel allowances (ATT'Y GEN. BIENNIAL REP. 060-114) (1959-60). Therefore, it appears that salaries and hiring practices might be affected by current and future legislation concerning state employees under state civil service provisions of FLA. STAT. §110.061 (1971).
tion is authorized<sup>296</sup> as well as cooperation with the federal government and local governmental agencies.<sup>297</sup>

This subsection is taken from the Model Water Use Act.<sup>298</sup> It is designed to complement §1.06 (4) of the code which requires the state agency to cooperate with water management districts and provides for an advisory staff for this purpose.

# (9) Expend funds for purposes of promotion, advertisement, and improvement of the program and objectives of the district.

COMMENTARY. Section 1.17 (9) authorizes expenditures for advertisement and promotion purposes. A similar provision is found in the Florida statutes.<sup>299</sup> No similar provision is found in the Model Water Use Act or the Iowa Code. This subsection is original.

### (10) Contract with public agencies, private corporations, or other persons for the purpose of carrying out any of the powers of the district.

COMMENTARY. This subsection gives the power of contract to the governing board. This authority may be implied from the basic intent of the statute and is reflected in such provisions as §§ 1.17 (4), (6), (7), (9), and (15). The Iowa Code confers a broad power to contract.<sup>300</sup> The power to contract is intended to include authority to accept grants and gifts from public agencies or private individuals.

296. FLA. STAT. §378.02 (1971).

297. However, the primary intent of these sections seems to be financial assistance, rather than sharing of employees. FLA. STAT. §378.07 (1971) states that "[s]uch cooperation shall include, but not be limited to, the contribution of cash; the providing of lands, easements and rights of way; and the furnishing of assurances (a) to hold and save the United States free from damages due to the construction and operation of works of improvement and (b) to maintain and operate works after completion." In addition, a provision of the 1957 water resources law, FLA. STAT. §373.131 (3) (1971), authorizes the Division of Interior Resources to cooperate with water management districts and other water control agencies in "coordinating the use of their facilities and in an exchange of ideas, knowledge and data. . . ."

298. MODEL WATER USE ACT §202 (12) (alt. 2) (1958).

299. FLA. STAT. §378.451 (1971). This power is not entirely unlimited even though the statutory amount is not exceeded. The attorney general in Florida held (ATT'Y GEN. BIENNIAL REP. 068–12) (1967–68) that "normally, the creation or establishment of a flood control district, or water management district, would not of itself put the public on notice that an extensive advertising campaign or hospitality and entertainment programs were intended."

300. IOWA CODE ANN. §455A.17 (Supp. 1971).

In the Florida statutes the water management district is authorized to accept "any land, public or private, needed for rights-of-way or other purposes."<sup>301</sup> This subsection was taken with considerable modification from the California Water Code.<sup>302</sup>

(11) Cooperate with any county, city, state agency, or public district in water resource development and, when requested, enter into cooperative agreements to prepare plans and specifications, construct or maintain and operate projects, or expend money in behalf of such county, city, state agency, or public district to accomplish the purposes of this code.

COMMENTARY. Section 1.17 (11) provides for cooperation with state and local agencies. As mentioned in connection with §1.04 (3), there are numerous governmental agencies exercising some control of water resources. These activities will not cease entirely if the code is enacted and, therefore, cooperation and coordination become almost mandatory. This provision is intended to include cooperation among water management districts. Chapter 378, Florida Statutes, provides for cooperation between the water management district and the state<sup>303</sup> and local authorities<sup>304</sup> as well as other water management districts.<sup>305</sup> Local cooperation is authorized in the Iowa Code,<sup>306</sup> but not specifically in the Model Water Use Act, although a provision allows the commission to utilize local employees.<sup>307</sup> This subsection was taken from the California Water Code.<sup>308</sup>

(12) Subject to the approval of the state board, cooperate or contract with agencies of the United States government whenever such cooperation or contract would be desirable for the district.

COMMENTARY. Subsection (12) authorizes the governing board to

301. FLA. STAT. §378.16 (1971).

302. CAL. WATER CODE §35850.5 (West Supp. 1971).

303. FLA. STAT. §378.02 (1971); see also FLA. STAT. §373.131 (3) (1971) (directing the Division of Interior Resources to cooperate with water management districts and other local governmental agencies).

304. Id. at §378.07.

305. *Id.* at §378.52. Furthermore, FLA. STAT. §378.161 (1971) permits state, federal, and local agencies to "operate and maintain the works of the district under conditions which the governing board may deem advisable."

306. IOWA CODE ANN. §455A.14 (Supp. 1971).

307. MODEL WATER USE ACT §202 (12) (alt. 2) (1958).

308. CAL. WATER CODE §12611 (West 1971).

cooperate with the federal government. A Florida statute<sup>309</sup> presently provides for such cooperation. The federal government has played a prominent role in the water management and flood control activities of the two existing Florida districts.<sup>310</sup> Most of the construction work is done under the supervision of the U.S. Army Corps of Engineers, and substantial portions of such projects are federally financed.

This provision of the Model Water Code includes the limiting phrase "subject to the approval of the state board."<sup>311</sup> This is intended to prevent a water management district from implementing a program or incurring an obligation that would compromise the overall state program. A similar provision is found in the Model Water Use Act,<sup>312</sup> but there is no limitation clause because the commission is a state agency. This subsection is from the California Water Code.<sup>313</sup>

### (13) Establish as it deems necessary local advisory boards to advise and make recommendations to the governing board concerning local or specialized problems.

COMMENTARY. Section 1.17 (13) permits the board, if it chooses, to establish local advisory boards. These boards could provide technical information or, more likely, serve to keep the board apprised of local public opinion.<sup>314</sup>

309. FLA. STAT. §378.07 (1971).

310. See MALONEY, PLAGER, & BALDWIN §§101.1 (h), 101.2.

311. While such a limitation is not found in FLA. STAT. §378.07 (1971), the overall control exercised by the Division of Interior Resources under other provisions of the Florida statutes—§378.06 (2) (1971), §370.02 (3) (b) (1971) —would probably dictate prior approval by the state agency of any significant joint undertaking by the federal government and a water management district.

312. MODEL WATER USE ACT §202 (10) (alt. 2) (1958).

313. Cal. WATER CODE §§133, 74570 (West 1971).

314. Such local committees were employed during the early years of the Central and Southern Florida flood control project. This system proved successful for a time in making the needs of the various areas known and in recommending changes in construction plans. See C. & S.F.F.C.D., EIGHT YEARS OF PROGRESS, 1949–1957, at 37–38 (1957). As detailed planning of the project progressed, these committees became less active and are no longer in existence. Coordination of planning and construction is now carried on by the district with county and city officials, local drainage districts, conservation and recreation groups, and interested landowners, in order to achieve a well-rounded viewpoint. The Southwest Water Management District has been divided into ten watershed basins. See MALONEY, PLAGER, & BALDWIN §101.2. Each watershed basin is under the control of a local basin water management board appointed by the governor. Fla. Laws 1961, ch. 61–691, §5 (2). Members of the district governing board serve as ex officio chairmen of the basin management board within their area and act as liaison men with the district. Fla. Laws

The provision in 1.17 (13) has its source in the Model Water Use Act.<sup>315</sup>

(14) Consult and advise all users of water resources and permit applicants as to the availability of water resources and the most practicable method of water diversion, development, conservation, and utilization.

COMMENTARY. Section 1.17 (14) contains another feature borrowed from the Model Water Use Act.<sup>316</sup> This policy of advising permit applicants is desirable to facilitate administration of the permit system, particularly in the initial stages of operation.

(15) Exercise such additional power and authority consistent with this code as may be necessary to perform such acts and duties and to decide and dispose of such matters as are not specifically defined in or covered by this code.

COMMENTARY. Section 1.17 (15) is designed to encourage a liberal construction of \$1.17 and provide by implication those powers not specially delineated in subsections (1)–(14). A comparable provision is presently found in chapter 378, Florida Statutes.<sup>317</sup> Its inclusion in the Florida statutes was a wise one, since the functions of Florida districts have expanded from flood control to all aspects of water management. There is no comparable section in the Model Water Use Act. However, the rule-making power provisions of that act<sup>318</sup> seem broad enough to accomplish the same purpose. This subsection is original.

### **§1.18** Adoption of Regulations by the Governing Board

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

1961, ch. 61–691, §6. Works are constructed, maintained, and operated by the water management district. Apparently, local basin boards serve partly the same function as the local advisory committees set up by the Central and Southern Florida Flood Control District. They provide representation for local areas and voice local needs. But although they are more formal in structure, they actually possess very little administrative power. They are in no way equivalent to water regulatory districts authorized under the 1957 Florida Water Resources Law. FLA. STAT. §§373.142–.171 (1971).

315. MODEL WATER USE ACT §202 (4) (1958).

316. Id. at §202 (9).

317. FLA. STAT. §378.45 (1971).

318. MODEL WATER USE ACT §202 (6) (alt. 2) (1958).

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COMMENTARY. Subsection (1) confers a broad rule-making power upon the governing board. Rule-making power over water resources in Florida is now granted to water management districts,<sup>319</sup> water regulatory districts,<sup>320</sup> and the Department of Natural Resources.<sup>321</sup> This is similar to a provision of the Model Water Use Act.<sup>322</sup> This provision is original.

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

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

(b) Within ten (10) days of the adoption of the resolution of the board, notice of the regulation in the form of a summary thereof (or in full, at the discretion of the governing board) shall be published once in four (4) newspapers of general circulation in the district. Such notice shall fix the time and place for a public hearing before the governing board, to be held not less than ten (10) or more than twenty (20) days from the date of publication.

319. FLA. STAT. §378.151 (1971).

320. Id. at §373.171.

321. The rule-making power of the highest state agency, the Department of Natural Resources, is provided for in the most general terms. It is directed to "make, adopt, promulgate, amend and repeal all rules and regulations necessary or convenient for the carrying out of the duties, obligations, powers and responsibilities conferred on said department or any of its divisions." FLA. STAT. §370.021 (1) (1971).

322. MODEL WATER USE ACT §203 (a) (1958). The rule-making power given to water management districts in Florida is not quite as broad. The governing board is authorized to "make and adopt reasonable rules, regulations and orders consistent with law." FLA. STAT. §378.151 (1971). While enforcement of the Department of Natural Resources' rules is accomplished by criminal penalty (misdemeanor, \$500 or six months), only a civil remedy is provided for the water management district (mandatory injunction).

The most limited rule-making powers in Florida are possessed by water regulatory districts created under the 1957 Florida Water Resources Act. In contrast to the broad powers granted to the Department of Natural Resources and the water management districts, the powers granted to water regulatory districts are carefully enumerated. The board may (1) establish rules, regulalations, or orders affecting the use of water and forbidding the construction of new diversion storage facilities; (2) regulate the use of water within the area by apportioning, limiting, or rotating uses of water or by prohibiting those uses which the local board finds have ceased to be reasonable or beneficial; and (3) make other rules, regulations, and orders necessary for the preservation of the interests of the public and of affected water users. FLA. STAT. §373.171 (1971).

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(c) Opportunity shall be afforded interested persons to present their views at such public hearing either orally or in writing or both, at the discretion of the governing board. Objections may be raised to the nature and form of such regulation. Following such hearing the governing board may amend, revise, or rescind the resolution, which action shall be set forth in the minutes of the board, and it shall by resolution adopt the regulation as proposed, amended, or revised, or may determine that no regulation is necessary.

(d) Upon the adoption of any regulation as provided, a copy thereof certified by the chairman shall, within five (5) days of the adoption thereof, be filed in the office of the secretary of state and shall become effective fifteen (15) days after such filing except as hereafter provided.

(e) Regulations relating to the internal organization or management of the district not affecting the public interest shall be adopted by resolution recorded in the minutes of the governing board and shall become effective immediately upon the filing of a copy thereof, certified by the chairman, in the office of the secretary of state.

COMMENTARY. Subsection (2) is taken from section 334.12, Florida Statutes. This section is discussed in the commentary to \$1.09 of the code.

### **§1.19** Application and Notice

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

### COMMENTARY. This provision is original.

(2) Upon receipt of the application the governing board shall cause a notice thereof to be published in a newspaper having general circulation within the affected area. The notice shall be published at least once a week for two (2) consecutive weeks. In addition, the governing board shall send a copy of such notice to any person who has filed a written request for notification of any pending applications affecting this particular designated area. This notification shall be sent by regular mail prior to the date of last publication. COMMENTARY. The test for adequate notice has been set forth in a series of Supreme Court cases. The basic elements are that notice must be "reasonably certain to inform those affected"<sup>323</sup> but may "vary with circumstances and conditions."<sup>324</sup> Also, where alternative forms are chosen, the form chosen must not be "substantially less likely to bring home notice than other of the feasible and customary substitutes."<sup>325</sup>

When one considers that a water user in one area may be affected by a permitted use in another nearby area, it can be argued that adequate notice could only be achieved by publication in all potentially affected areas. Of course, many times this will be accomplished by publication in a single newspaper of wide circulation, but it can only be assured by statutory mandate requiring maximum exposure.

The bounds of a potentially affected area may as a matter of practicality never be completely determined in a state, such as Florida, where watercourses are lengthy and interconnected. Therefore, the drafters have decided to provide published notice wherever there are interests which *may* be affected, no matter how remote they may seem. Actually, this may not be such a burden, for several newspapers in any state enjoy statewide or near statewide circulation. Postal notice is provided for those who request it in advance.

This section is taken largely from the Iowa Code.<sup>326</sup>

(3) This section shall not be applicable to permits or licenses issued under the provisions of chapters 3 and 6 of this code.

COMMENTARY. Special notice provisions have been developed for use in chapter 6.<sup>327</sup> This provision is original.

### **§1.20** Citizen Complaints

Any person may file with the governing board a signed complaint against any other person allegedly violating any provisions of this code. The governing board shall cause an investigation to be made, and if the facts stated in the complaint are verified, the governing board shall take appropriate action and notify the

§404 (1958).

327. See MODEL WATER CODE, COMMENTARY §6.11 infra.

<sup>323.</sup> Mullane v. Central Hanover Bank & Trust Co., 339 U.S. 306 (1950).

<sup>324.</sup> Walker v. City of Hutchinson, 352 U.S. 112, 115 (1956).

<sup>325.</sup> Mullane v. Central Hanover Bank & Trust Co., 339 U.S. 306, 315 (1950). 326. IOWA CODE ANN. §455A.18 (Supp. 1971); see MODEL WATER USE ACT

complainant thereof. If the complainant is dissatisfied with the action of the governing board, he may apply to the governing board for a hearing which shall be conducted pursuant to the provisions of section 1.21. Such application must be made within ten (10) days after receipt of the notification sent by the governing board. If the complainant is dissatisfied with the action taken under this section, he may take an administrative appeal to the state board under the provisions of section 1.22. Neither the governing board nor the state board shall be obligated to assist the complainant in gathering information, making investigations, or by providing counsel for the purpose of drawing his complaint.

COMMENTARY. In recent years conservation groups and individuals have increasingly resorted to court action to challenge governmental actions or policies which they regarded as being detrimental to the environment. Beginning with *Scenic Hudson Preservation Conference* v. Federal Power Comm'n,<sup>328</sup> the federal courts have relaxed the traditional rules of standing to allow such suits.<sup>329</sup>

Standing for private citizens and organizations to commence environmental protection litigation may also be specifically provided by legislation. At the federal level, the Clean Air Amendments of 1970<sup>330</sup> authorize individual citizens to bring litigation either (1) against any person alleged to be in violation of air quality standards or an order of the Administrator of the Environmental Protection Agency or counterpart state agency, or (2) against the administrator to compel performance of nondiscretionary acts or duties.<sup>331</sup>

Several states have also enacted laws allowing citizen suits for environmental protection. Contrasting theories, however, are used in the various statutes. The Clean Air Amendments, for example, permit the citizen to bring the action directly against the polluter, but only after giving 60 days' notice to the administrator; if the administrator commences a civil action against the polluter within the 60 days, the

328.354 F.2d 608 (2d Cir. 1965), cert. denied, 384 U.S. 941 (1966).

329. See, e.g., Environmental Defense Fund v. HEW, 428 F.2d 1083 (D.C. Cir. 1970); Citizens Committee for the Hudson Valley v. Volpe, 425 F.2d 97 (2d Cir. 1970), aff'g, 302 F. Supp. 1083 (S.D.N.Y. 1969); Sierra Club v. Hardin, 325 F. Supp. 99 (D. Alas. 1971); Crowther v. Seaborg, 312 F. Supp. 1205 (D. Colo. 1970); Road Review League, Town of Bedford v. Boyd, 270 F. Supp. 650 (S.D.N.Y. 1967). But see Sierra Club v. Hickel, 433 F.2d 24 (9th Cir. 1970), aff'd sub nom. Sierra Club v. Morton, 92 S. Ct. 1361 (1972).

330. Pub. L. No. 91-604, 84 Stat. 1676 (codified in subsections of §1857, 42 U.S.C.).

331. 42 U.S.C. §1857h-2 (a) (1970).

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

COMMENTARY. This provision appears in the California Water Code.<sup>341</sup>

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

COMMENTARY. This subsection is taken from a Minnesota statute.<sup>342</sup>

(7) Each witness who appears by order of the governing board shall receive for his attendance the same fees and mileage allowed by law to witnesses in civil cases, which shall be paid by the parties at whose request the witness is subpoenaed.

COMMENTARY. This provision is derived from a California statute.<sup>343</sup>

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

COMMENTARY. This subsection is taken from the Model Water Use Act.<sup>344</sup>

(9) The governing board is authorized to hold conferences for the purpose of consolidating applications for a hearing, selecting dates for a hearing satisfactory to the parties, exploring all feasible methods to eliminate surprise and delay, and to shorten the hearing, including arrangements for the parties in advance of the hearing to exchange written qualifications of professional

341. CAL. WATER CODE §1100 (West 1971).
342. MINN. STAT. ANN. §105.44 (6) (1964).
343. CAL. WATER CODE §1081 (West 1971).
344. MODEL WATER USE ACT §212 (b) (1958).

expert witnesses, and maps, charts, engineering analyses, and other items contemplated for introduction as evidence, and to encourage stipulations among the parties directed toward the same or similar ends.

### COMMENTARY. This provision is original.

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

COMMENTARY. This subsection applies to permit applications. Since the state board does not ordinarily administer the various permit systems (with the exception of chapter 6 permits), this provision has been omitted from §1.10. This provision is original.

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

COMMENTARY. This subsection is original.

### **§1.22** Administrative Review

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

COMMENTARY. Subsection (1) gives the state board unlimited authority to review any action, or any failure to act, by the governing board. There is no direct means of judicial review of actions of the governing board provided for in the Model Water Code.

This provision is original.

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

(3) The state board may find the governing board's action or inaction to be appropriate and proper. Upon finding that the action of the governing board, or the failure of the governing board to act, was inappropriate or improper, the state board may:

(a) direct that the appropriate action be taken by the governing board,

(b) refer the matter to any other state agency having jurisdiction,

(c) take the appropriate action itself, or

(d) any combination of the foregoing.

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

COMMENTARY. Upon a finding that the governing board's conduct has not been proper, the state board may proceed in a number of ways. Normally, the state board would merely direct that a particular course of action be taken. However, in cases of obstinate conduct by the local board, the state board may act in its place. This provision is original.

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

### COMMENTARY. This subsection is original.

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

COMMENTARY. This provision is original.

### **§1.23** Acquisition of Real Property

(1) The legislature declares it to be necessary for the public health and welfare that water and water-related resources be conserved and protected; the acquisition of real property for this objective shall constitute a public purpose for which public funds may be expended.

(2) The state board and the governing boards are empowered and authorized to acquire real property and easements therein

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by purchase, gift, devise, lease, eminent domain, or otherwise for flood control, water management, or water and water-related resource conservation.

(3) Lands, water areas, and related resources which may be acquired for this purpose shall include, but not be limited to, streams and watercourses, parks and recreation areas, beaches, submerged lands, and other open areas, as well as necessary access sites and rights-of-way.

(4) This section shall not limit the exercise of similar powers delegated by statute to any state or local governmental agency.

COMMENTARY. Recent years have seen a marked increase in legislative concern over the conservation of water and water-related resources. This concern has resulted in legislation authorizing state or local water management agencies to take real property by eminent domain for the purpose of conserving and best utilizing water resources. The states have differed in their approaches to delegating the power of eminent domain.

A survey of southeastern and eastern states indicates that the power to condemn real property for water conservation purposes has been delegated mainly to flood control, drainage, and water management districts. Alabama,<sup>345</sup> Mississippi,<sup>346</sup> South Carolina,<sup>347</sup> North Carolina,<sup>348</sup> Tennessee,<sup>349</sup> and Virginia<sup>350</sup> expressly authorize such districts to condemn real property for the conservation of water. Since most of these states have only recently authorized their districts to take such action, there has not yet been any judicial interpretation as to the scope of the power to condemn land for water "conservation" purposes. However, due to increasing public concern over the protection of water resources, it seems likely that courts will liberally construe the power of a water district to condemn land for such purposes.

Several of these states have gone one step further and have specifically authorized their water districts to condemn land in order to protect water-related natural resources<sup>351</sup> and wildlife<sup>352</sup> and to pro-

345. ALA. CODE tit. 2, §§273(2), (14) (Supp. 1970).

346. MISS. CODE ANN. tit. 16, §§3665-02, 09(g) (Supp. 1971).

347. S.C. Code §§63-172, -181 (Supp. 1970).

348. N.C. STAT. §§139-2, -38 (Supp. 1971).

349. TENN. CODE §§70-1818(d), (i) (Supp. 1970).

350. VA. CODE §21-112.21 (1960), §21-2 (Supp. 1971). 351. Id. at §21-2 (Supp. 1971); N.C. STAT. ANN. §139-2 (1964).

352. VA. CODE §21-2 (Supp. 1971); N.C. STAT. ANN. §139-2 (1964).

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vide public recreation facilities.<sup>353</sup> Mississippi's authorization<sup>354</sup> to the Pearl River Valley Water Supply District to condemn land for "public parks and recreational facilities, and for the preservation of fish and wildlife"<sup>355</sup> was upheld in *Pearl River Valley Water Supply District v*. *Brown*<sup>356</sup> as a constitutional taking for a public use. Since Florida's constitution has a requirement similar to that of Mississippi, that any governmental taking of private property be for a public purpose,<sup>357</sup> it would seem that any authorization to Florida's water districts to condemn land for the protection of natural resources, wildlife, or recreation would be upheld so long as the particular project constitutes a "public purpose." There has been no judicial determination as to whether these additional powers to condemn for natural resource, recreation, and wildlife protection must be specifically authorized, or whether they are inherent in a water district's basic authority to condemn for the purpose of water conservation.

Other areas of the United States have also recognized the importance of conserving water and water-related resources. Some states delegate this duty to water management districts while others use various state agencies to accomplish the same purpose. For example, Vermont has established a water resources board with the power to condemn real property for the purposes of water conservation,<sup>358</sup> public recreation,<sup>359</sup> and fish and wildlife development.<sup>360</sup> West Virginia allows its division of water resources to condemn private property in order to reduce or abate pollution in the state waters.<sup>361</sup> One of the broadest grants of authority is Maine's authorization to its water districts to condemn land for *any* public purpose.<sup>362</sup> However, the courts of Maine have yet to construe the term "any public purpose" and it remains to be seen just how far this provision will stretch. Minnesota also grants broad powers to its water districts and permits

353. TENN. CODE §70-1818(r) (Supp. 1970).

354. Miss. Laws, ch. 197 (1958).

355. Id. at ch. 197 §13.

356. 156 So. 2d 572 (Miss. 1963), cert. denied, 376 U.S. 970 (1964). See also Wright v. Pearl River Valley Water Supply District, 167 So. 2d 660 (Miss. 1964); Pearl River Valley Water Supply District v. Wood, 160 So. 2d 917 (Miss. 1964); Horne v. Pearl River Valley Water Supply District, 162 So. 2d 504 (Miss. 1964).

357. FLA. CONST. art. X, §6(a).

358. VERMONT STAT. ANN. §§633, 638 (Supp. 1971).

359. Id. at §§637, 638.

360. *Id*.

361. W.VA. CODE §20-5a-11a (1970). 362. MAINE STAT. ANN. tit. 35, §3291 (1965). them to take real property in order to conserve the water supply for recreational use or any other public use.<sup>363</sup>

The California Water Code contains the most explicit authorization in connection with its provisions on the Central Valley Project.<sup>364</sup> One section provides that:<sup>365</sup>

The legislature further finds and declares it to be the policy of this State that recreation and the enhancement of fish and wildlife resources are among the purposes of state water projects; that the acquisition of real property for such purposes be planned and initiated concurrently with and as a part of the land acquisition program for other purposes of state water projects; and that facilities for such purposes be ready and available for public use when each state water project having a potential for such use is completed.

The State Department of Water Resources has been granted extensive eminent domain powers in the California Water Code.<sup>366</sup> The Department can initiate condemnation proceedings by making a written declaration, concurred in by resolution of the California Water Commission, concerning the public interest and necessity of the taking.<sup>367</sup> Another provision of the California Water Code states that the written declaration of the department shall be conclusive evidence of all of the following: (1) the public necessity of the acquisition, (2) that the property is necessary, and (3) that the proposed acquisition is planned in a manner which will be most compatible with the greatest public good and the least private injury.<sup>368</sup> The department's condemnation of land for the purpose of protecting fish and wildlife was upheld in *State Department of Water Resources v. Natomas Company*.<sup>369</sup>

Section 1.23 was modeled primarily after "open space" legislation designed to enable local governmental bodies to preserve certain lands in their natural state.<sup>370</sup> The guideline for this type of legislation was

363. MINN. STAT. ANN. §§112.36, .41 (1964).

364. CAL. WATER CODE §§11100-11925 (West 1971).

365. Id. at §11900.

366. Id. at §§11580-88.

367. Id. at §11581.

368. Id. at §11582.

369. 49 Cal. Rptr. 64, 239 C.A. 2d 547 (3d D.C.A. 1966).

370. See Note, Open Space Legislation: Suggestions for a Model Act, 2 GA. L. REV. 294 (1968); Eveleth, Appraisal of Techniques to Preserve Open Space, 9 VILLANOVA L. REV. 559 (1964); Note, Techniques for Preserving Open Spaces, 75 HARV. L. REV. 1622 (1962). provided in 1961 when the federal government enacted the Open Space Land Act<sup>371</sup> which provided for the condemnation of land for the public needs of "necessary recreational, conservation, and scenic areas."<sup>372</sup> A number of states have since enacted open-space legislation in response to the federal act. In addition to allowing condemnation of real property, the language regarding the interest acquirable is usually broad enough to encompass the acquisition of development rights.<sup>373</sup> Although not all open-space statutes are conservation oriented, many of them do contain references to conservation and environmental protection. Indeed, both open-space legislation and this proposal provide for condemnation of development rights on the theory that conservation might be promoted by simply allowing some lands to remain in their present condition.

Subsection (1) is a legislative declaration of policy. A legislative declaration that a particular objective is to be considered a public purpose, while not conclusive, is given great weight by the courts and will not normally be disturbed unless it is shown to be arbitrary and unfounded.<sup>374</sup> Consequently, the inclusion of this provision in the code is highly important since the finding of a public purpose is essential to the validity of this section.<sup>375</sup> A survey of open-space legislation reveals that a declaration of policy is often found.<sup>376</sup> Subpart (a) was taken from section 2 of the Model Open Spaces Act;<sup>377</sup> similar provisions appear in the laws of California,<sup>378</sup> Maryland,<sup>379</sup> and New York.<sup>380</sup>

Subsection (2) permits the flood control and water management districts to acquire land by various means, including eminent domain. Similar provisions are found in New Jersey<sup>381</sup> and Illinois<sup>382</sup> statutes. The Model Open Spaces Act contains a specific grant of eminent

371. 42 U.S.C. §§1500–1500d–1 (1970).

372. 42 U.S.C. §1500 (d) (1970).

373. Eckert, Acquisition of Development Rights: A Modern Land Use Tool, 23 U. MIAMI L. REV. 347, 351 (1969).

374. Spafford v. Brevard County, 92 Fla. 617, 110 So. 451 (1926); see Grubstein v. Urban Renewal Agency of City of Tampa, 115 So. 2d 745 (Fla. 1959).

375. Note, Open Space Legislation: Suggestions for a Model Act, 2 GA. L. REV. 294, 303 (1968).

376. N.J. STAT. ANN. §13:18A-2 (1968).

377. Note, supra note 375, at 305.

378. CAL. GOVT. CODE §§6933, 7001 (West 1966).

379. Md. Ann. Code, art. 66C, §357A (a) (1970).

380. N.Y. GEN. MUNIC. LAW §247.2 (McKinney Supp. 1971).

381. N.J. STAT. ANN. §13:18A-2 (1968).

382. ILL. ANN. STAT. ch. 57½, §112 (d) (Smith-Hurd Supp. 1971).

domain authority.<sup>383</sup> A number of other states expressly confer condemnation powers upon governmental bodies in open-space legislation,<sup>384</sup> while the Virginia statute specifically excludes it.<sup>385</sup> The remaining open-space statutes contain no references at all to eminent domain. This proposal permits condemnation of less than a fee interest. The landowner's right to develop his land to its most profitable use is basic to the concept of land ownership and is constitutionally protected against unreasonable regulation.<sup>386</sup> The concept of developmentright acquisition is based on the recognition of this right, and further on the recognition that a landowner's interest in developing his land is a severable component of his entire interest in the land. As such, however, it is subject to acquisition by the state through condemnation.<sup>387</sup>

Subsection (3) contains an enumeration of those lands which may be acquired. A similar description appears in the Rhode Island openspace statute,<sup>388</sup> as well as in the Florida Recreation and Conservation Act.<sup>389</sup> The purpose of this subsection is to define more explicitly the types of land and, indirectly, the types of uses contemplated in subsections (1) and (2). The scope of the state's program can best be modified by adding or deleting material in this subsection. The present version, therefore, is very broad.

Subsection (4) provides that the conferred conservation and eminent domain powers are not intended to diminish any similar powers which presently or in the future may be possessed by other state or local governmental agencies. A similar provision appears in the California Water Code.<sup>390</sup> Indeed, in California, some of the Central Valley Project's lands are actually managed by other state agencies.<sup>391</sup>

### **§1.24** Salt Water Barrier Line

(1) The governing board may, at the request of the board of county commissioners of any county, municipality, or water dis-

383. Note, supra note 375, at 306.

384. E.g., CONN. GEN. STAT. REV. §7–131b (Supp. 1971); ILL. ANN. STAT. ch. 57<sup>1</sup>/<sub>2</sub>, §112 (d) (Smith-Hurd Supp. 1971); Mass. GEN. LAWS ANN. ch. 40, §8C (Supp. 1968); N.J. REV. STAT. §13:8A–6 (1968); PA. STAT. ANN. tit. 72, §3946.17 (b) (1968).

385. VA. CODE ANN. §10-152 (b) (Supp. 1971).

386. See Goldblatt v. Hempstead, 369 U.S. 590 (1962).

387. Eckert, supra note 373, at 348.

388. R.I. GEN. LAWS ANN. §45-36-1 (1971); see also MAINE REV. STAT. ANN. tit. 30, §3851 (Supp. 1970).

389. FLA. STAT. §375.031 (5) (1971).

390. CAL. WATER CODE §11901 (West 1971).

391. Id. at §11917; see also id. at §§11918, 11920.

### Administrative Structure and Operation

trict responsible for the protection of a public water supply or, having determined by adoption of an appropriate resolution that salt water intrusion has become a matter of emergency proportions, by its own initiative, establish generally along the seacoast, inland from the seashore and within the limits of the area within which the petitioning board has jurisdiction, a salt water barrier line. Inland of this line no canal shall be constructed or enlarged and no natural stream shall be deepened or enlarged which shall discharge into tidal waters without a dam, control structure, or spillway at or seaward of the salt water barrier line to prevent the movement of salt water inland of the salt water barrier line. Provided, however, that the governing board is authorized, in cases where salt water intrusion is not a problem, to waive the requirement of a barrier structure by specific permit to construct a canal crossing the salt water barrier line without a protective device and provided further that the agency petitioning for the establishment of the salt water barrier line shall concur in the waiver.

(2) Application by a board of county commissioners, a municipality, or a water district for the establishment of a salt water barrier line shall be made by adoption of an appropriate resolution agreeing to require compliance with the provisions of this law by county or district forces under their control; by those individuals or corporations filing plats for record; and by individuals, corporations, or agencies seeking authority to discharge surface or subsurface drainage into tidal waters.

(3) No final order establishing a salt water barrier line shall be adopted by the governing board until a public hearing shall be held, and the evidence presented at the hearing shall be given consideration in determining the location of the salt water barrier line.

COMMENTARY. The salt water barrier line is a line inland of the seacoast beyond which no canal or natural stream can be constructed, deepened, or enlarged without a control structure at or seaward of the line to prevent the movement of salt water inland of the line. This measure is intended to protect fresh water bodies from salt water encroachment.

Salt water barrier lines are established in Florida under the supervision of the Division of Interior Resources.<sup>392</sup> Salt water barrier lines

392. FLA. STAT. §373.194 (1971).

have been established along much of the coast of southern Florida. This provision was taken from the Florida statutes.<sup>393</sup>

### **§1.25** Penalties: Common Law Remedies

(1) The state board may enforce its regulations and orders, adopted pursuant to this code, by suit for injunction, or for damages, or both.

(2) The governing board may enforce its regulations and orders, adopted pursuant to this code, by suit for injunction, or for damages, or both.

COMMENTARY. Under subsections (1) and (2) the state board and governing boards are given the power to enforce their orders and regulations in a civil action. Experience has shown, particularly in the area of pollution control, that criminal penalties are seldom employed successfully.<sup>394</sup> These subsections are parallel to a Tennessee statute.<sup>395</sup>

(3) Any person who violates any provision of this code shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment not to exceed six (6) months, or a fine not to exceed \$1,000, or both. For a continuing offense, each day during which the offense is committed shall be considered a separate violation.

COMMENTARY. Subsection (3) provides for criminal penalties for violations of the Model Water Code. Substantial fines may be imposed for a continuing offense. This provision is parallel to a Tennessee statute.<sup>396</sup>

(4) No provision of this code shall bar the right of any injured person to seek other legal or equitable relief against a water user for actions in violation of this code.

COMMENTARY. The Model Water Code does not take away any common law remedies formerly available to injured parties. A suit for

394. MALONEY, PLAGER, & BALDWIN §111.2 (b).

395. Tennessee Water Quality Control Act of 1971, §§15-16 [1 Environmental Rptr. 916:0101, 916:0107].

396. Id. at §14.

<sup>393.</sup> Id.

damages, particularly in nuisance or negligence, may still be maintained against a wrongdoer.<sup>397</sup> This subsection is original.

### **§1.26** Severability

If any section, subsection, sentence, clause, phrase, or words of this code are for any reason held to be unconstitutional, or invalid, such action shall not affect the validity of any remaining portion of this code.

### COMMENTARY. This provision is original.<sup>398</sup>

397. See Maloney, Plager, & Baldwin §112. 398. See generally Model Water Use Act §703 (1958).

### Chapter 2

## **Regulation of Consumptive Uses**

In the past, because there was an ample supply of water available, the common law standard of relative reasonableness under the reasonable use rules facilitated adjustment of conflicts between uses in the eastern United States in accordance with the demands of each user and the dictates of the general public interest,<sup>1</sup> and detailed statutory regulation was unnecessary.

Recently, however, criticism has been leveled at the riparian system because of its restriction of the use of stream water to riparian owners and its requirement that the water be used only on riparian land. Many critics feel that better use may frequently be made at other places by riparian or nonriparian owners.<sup>2</sup> A major criticism of the common law riparian system concerns the element of uncertainty associated with the reasonable use of water for nondomestic purposes. Because the reasonableness of each use is determined by the needs of other riparians, unforeseen conditions arise when others commence or enlarge uses despite long nonuse of their rights.<sup>3</sup> A further uncertainty exists in those states where a riparian neither making nor intending to make use of water can enjoin an existing use as unreasonable with regard to his right.

Another criticism of the system relates to the lack of administrative controls.<sup>4</sup> In many jurisdictions the extent of a riparian's right of reasonable use can be determined only by litigation. The critics maintain that this uncertainty results in a needless loss when water use patterns of established industries are upset by later competing uses. Perhaps of greater concern is the water unused or devoted to less valuable use when industries fearful of such losses refuse to locate

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

2. See Fisher, Western Experience and Eastern Appropriation Proposals, in THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 75, 78–79 (Haber & Bergen eds. 1958).

3. Id. at 79.

4. Id. at 80.

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in the area.<sup>5</sup> Due to their lack of expertise and the inefficiency of a case-by-case approach, the courts are structurally not as capable of uniformity in the application of the law as a single centralized agency.<sup>6</sup>

As population growth and technological development in agriculture and industry have made greater demands on eastern water supplies, the problem of maintaining streamflows and ground water levels has assumed increasingly greater importance. Concern over the adequacy of existing laws in the face of emerging water resource problems has led many executive and legislative study committees to propose new methods of dealing with these problems.<sup>7</sup>

There has developed a strong movement in the eastern states, evidenced by the increasing number of permit systems, toward a modification of the riparian doctrine. This movement to modify the riparian system can be characterized as a move toward certain elements of the appropriation doctrine. In seeking to make a more effective utilization of their water resources, the eastern states can certainly benefit from the experience of the West.

The western states, following the appropriative system, all provide a formal means for acquiring water rights, and most do it through some type of permit system.<sup>8</sup> These systems vary widely in detail, but all require, before the permit is granted, that some administrative body make a determination of the public interest involved. The predominant feature of the western system of prior appropriation is that a riparian or other owner can appropriate, in perpetuity, the right to use as much water as he can successfully divert and beneficially employ as long as he does so prior to other users. This right of use may be lost only through abandonment and forfeiture.

One of the principal advantages claimed for the appropriation system is that the users of water are more certain of their rights.

5. Bagley, Some Economic Considerations in Water Use Policy, 5 KAN. L. REV. 499, 507 (1957).

6. Maloney, Florida's New Water Resources Law, 10 U. FLA. L. REV. 119, 136 (1957).

7. Fisher, *supra* note 2, at 88–91.

8. Alas. Stat. Ann.  $\S46.15.010-.270$  (1971); Ariz. Rev. Stat. Ann.  $\S45-142$  (Supp. 1971); Cal. Water Code  $\S1225$  (West 1971); Idaho Code Ann. \$42-202 (Supp. 1969); Kan. Stat. Ann. \$2a-709 (1969); Neb. Rev. Stat. Ann. \$46-233 (1968); Nev. Rev. Stat. Ann. \$533.325 (1963); N.M. Stat. Ann. \$75-5-1 (1968); N.D. Century Code Ann. \$61-04 (Supp. 1971); Okla. Stat. Ann. \$46-5 (1969); Ch. 58, \$\$5.121-.134 [1971] Tex. Laws 125-29; Utah Code Ann. \$73-3-1 (Supp. 1967); Wash. Code Ann. \$90.03.250 (Supp. 1970); Wyo. Stat. Ann. \$41-201 (Supp. 1971).

Certainty of water rights has three different aspects: (1) legal certainty; (2) physical certainty; and (3) tenure certainty.<sup>9</sup>

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

The physical uncertainties of changing weather conditions and drought are equally applicable to riparians and appropriators.<sup>10</sup> Under the appropriation system the physical uncertainty is greatly reduced for senior appropriators, but similarly increased for junior appropriators who may have their supply completely cut off while the senior users get their full quotas. A number of western permit systems have sought to reduce some of this uncertainty by providing for emergencies a special system of priorities which supersedes the existing priorities. Domestic uses usually are given first preference, agricultural uses second, and commercial and industrial uses third.

Tenure certainty involves the protection of water rights against the lawful acts of others, as opposed to unlawful acts in the case of legal certainty. The appropriative right defines the amount of water, its priority, and place of diversion. Appropriators are protected against junior users and juniors are protected against increases in use by senior users.

It has been claimed that the appropriative system leads to the most beneficial use of water by placing emphasis on encouraging the sound development, wise use, conservation, and protection of water.<sup>11</sup> However, prior appropriation often results in waste since senior appropriators are frequently located in downstream areas, and the streams supplying these areas often pass through arid regions where evapora-

9. Ciriacy-Wantrup, Concepts Used as Economic Criteria for a System of Water Rights, 32 LAND ECONOMICS 295, 297 (1956). Security of water rights will be discussed in detail in pp. 173–77 infra.

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

11. C. BUSBY, THE BENEFICIAL USE OF WATER IN SOUTH CAROLINA 14–15 (1952) (Preliminary Report for the South Carolina Soil Conservation Committee).

tion seepage losses are high.<sup>12</sup> In addition, once an appropriator has begun using a certain amount of water, he will frequently continue to draw that amount even though it may be considerably more than he really needs, since failure to do so may result in loss of his appropriative right to the excess. In such cases the appropriation system encourages waste and discourages use of new irrigation techniques requiring less water.<sup>13</sup>

The appropriation doctrine tends to "freeze" a specific quantity of water to a specific tract of land in two ways, both of which appear undesirable for eastern adoption. First, the appropriative rights are granted in perpetuity and can be lost only by abandonment or statutory forfeiture. This element of inflexibility prevents more effective use by subsequent landowners. A periodic administrative review appears workable and more beneficial to the welfare of all the community. Second, the appropriative system is also inflexible in its method of apportioning water during times of drought. It would appear more desirable to give the administrative authorities broad emergency power to suspend permits and apportion the water among all the users rather than allowing the senior appropriator to take his entire amount while the junior gets nothing.<sup>14</sup>

The framers of the Model Water Code have therefore arrived at the conclusion that prior appropriation, in its pure form, would be unsuitable for eastern jurisdictions. Nevertheless, some aspects of prior appropriation may provide an answer to the inadequacies of the common law approach.

The Model Water Code employs a number of prior appropriation features in chapter 2. The code provides that permits be granted for specific quantities of water. As in the West, the permit system is administered by a water regulatory agency. Also, the reasonablebeneficial use rule is strongly western oriented in its emphasis on the public interest and prohibition of waste. In addition, the common law restrictions to use on riparian land have been abandoned. On the other hand, under the code, permits are not granted in perpetuity and provisions are made for temporary reallocation of water during periods of extreme water shortage. While priority in time has a place in the code's permit system, it is not as determinative of water rights as in the prior appropriation system.

12. Trelease, A Model State Water Code for River Basin Development, 22 LAW & CONTEMP. PROB. 301, 311 (1957).

13. Fisher, supra note 2, at 95.

14. E.g., see IOWA CODE ANN. §§455A.28 (2), (3) (Supp. 1971).

in the code's permit system, it is not as determinative of water rights as in the prior appropriation system.

In short, the drafters of the code have attempted to integrate the most desirable features of both eastern and western water law in a manner which will insure fairest and most beneficial utilization of the state's water resources.

Before examining the permit provisions of the Model Water Code, it may be helpful to consider briefly some of the existing eastern regulatory legislation; it includes a variety of partial permit systems, for the most part inactive, in common law riparian jurisdictions and engrafted onto the riparian doctrine of those jurisdictions. A brief consideration of the constitutionality of statutes bringing about a change from pure riparianism to a permit system will then be undertaken, after which the permit provisions of the Model Water Code will be examined in some detail.

### Regulation under Eastern Permit Systems

Such eastern states as Minnesota,<sup>15</sup> Wisconsin,<sup>16</sup> and Maryland<sup>17</sup> have adopted compulsory permit systems, but have created such exceptions to their application that these systems cannot be considered comprehensive. New Jersey<sup>18</sup> and Indiana<sup>19</sup> have enacted statutes which require compulsory permits only in regions specifically designated as "problem areas." The Model Water Use Act<sup>20</sup> and the Iowa Water Resources Act<sup>21</sup> are the only statutory proposals at present which provide for comprehensive regulation of water resources in a riparian jurisdiction.<sup>22</sup>

### Model Water Use Act

The Model Water Use Act was drafted by the Legislative Research Center at the University of Michigan Law School, and was approved in 1958 by the National Conference of Commissioners on Uniform State Laws. In general, it contemplates the creation of a state water resources agency and the issuance of permits for some definite period of time. The act also provides for the exemption of domestic uses, and

15. MINN. STAT. ANN. §105.39 (1964), as amended (Supp. 1970).

16. WIS. STAT. ANN. §30.18 (1964).

17. Md. Stat. Ann. 96A, §§11-18 (1964), as amended (Supp. 1971).

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

19. Ind. Stat. Ann. §§27–1301 to –1316 (1960).

20. MODEL WATER USE ACT (1958).

21. IOWA CODE ANN. §455A (Supp. 1971).

22. Mississippi has adopted a form of prior appropriation; see MISS. CODE ANN §5956-04 (Supp. 1971).

for preservation of other existing uses. It is of interest to note that the act would specifically do away with the acquisition of rights to use water by prescription. An optional provision of the act would allow the commissioner to award permits among competing applicants on the standard of beneficial use, without regard to priority in time of application.<sup>23</sup> It also specifies that each permit be issued subject to a condition that the authorized uses must not interfere substantially or materially with domestic uses, preserved pre-existing uses, or uses covered by permits previously issued. The Model Water Use Act has been enacted only in Hawaii; there it was accepted in modified form and affects only ground water.<sup>24</sup>

### Iowa's Permit System

In 1957 the Iowa Legislature passed a water rights law establishing a permit system under the control of the Natural Resources Council, administered by a Water Commissioner, and regulating rights to both surface and ground water.<sup>25</sup> Though the law purports to leave unimpaired all "vested rights,"<sup>26</sup> it regulates both existing and unused rights to water. In this sense it goes beyond many state statutes which specifically exempt water rights being exercised at the time of their enactment.<sup>27</sup>

The Iowa law requires that all substantial uses of water be "beneficial"; that term is defined to mean the application of water to a useful purpose enuring to the benefit of the water user and subject to his dominion and control.<sup>28</sup> Permits are issued by the Water Commission. These permits have a general limitation of ten years, and 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, establish priorities for water distribution, and thus protect the public interest from danger.<sup>29</sup>

The statute directs that the standard for determining the disposi-

23. MODEL WATER USE ACT §407 (d) (1958).

24. HAWAII REV. LAWS §177-15 (1968).

25. IOWA CODE ANN. §455A (Supp. 1971). 26. Id. at §455A.21.

27. E.g., MISS. CODE ANN. §§5956-02 (g) (2)-(3), 5956-04 (a) (Supp.

1971); Kan. Stat. Ann. §88a–701 (d) (Supp. 1961); Model Water Use Act §303 (a) (1958).

28. IOWA CODE ANN. §455A.1 (Supp. 1971).

29. Id. at §455A.28 (3).

tion of applications is one of beneficial use to be applied in a broad manner. The commissioner has not sought to discriminate on the basis of differences among beneficial uses; if the applicant can show that his use is beneficial, he will receive a permit. The effect of this policy, along with the abundant rainfall in the state, has been that in the first ten years of operation only two applications for permits were denied. Both involved the disposition of drainage waters. Not a single application to divert, store, or withdraw water was denied during this period.<sup>30</sup>

Two of the major problems faced by the Iowa Council have been determining what uses are in fact consumptive and deciding on the protected level of flow. Generally, only irrigation uses have been designated consistently as being consumptive. Certainly many municipal and industrial users consume substantial amounts of water, or pollute it to the extent that it is unusable by others, and should also be classified as consumptive users to guarantee a protected flow in the affected streams.<sup>31</sup> The difficulty of determining the level of flow in Iowa has been alleviated by the United States Geological Survey, which maintains flow-gauging stations on about one hundred streams and has records over a twenty-five-year period. During times of water shortage, the commissioner's office is kept informed of stream gauge readings, and provides permit holders with a fixed standard to determine the protected flow at these points of withdrawal. In an emergency the commissioner may suspend operation of a permit without a hearing.<sup>32</sup>

### THE CONSTITUTIONALITY OF REGULATING WATER RIGHTS

### Nature of the Police Power

One of the primary concerns of those preparing proposals for the regulation of consumptive use of water in riparian states is the problem of constitutionality. In the East it has sometimes been asserted that water rights are a species of property and that alteration or termination of these property rights through the enactment of a water permit system violates due process.<sup>33</sup> The drafters of some water permit sys-

30. Hines, A Decade of Experience under the Iowa Water Permit System (Part One), 7 NAT. Res. J. 499, 532-33 (1967).

31. Davidson, Demands For and Use of Water in Industry, IOWA'S WATER RESOURCES—SOURCES, USES AND LAWS 71 (Timmons, O'Byrne, & Frevert eds. 1956).

32. IOWA CODE ANN. §455A.28 (2), (3) (Supp. 1971).

33. See Fisher, Due Process and the Effect of Eastern Appropriation Pro-

### **REGULATION OF CONSUMPTIVE USES**

tems have sought to avoid constitutional challenge by making permit provisions inapplicable to persons who have "vested" rights in a watercourse, or by giving such persons preferential status in the regulatory scheme. While some consideration is given to presently existing uses in providing for permits, the Model Water Code, in general, regulates all water users in the same fashion without regard to "vested" rights. In order to justify the constitutionality of such an approach, it will be necessary to examine the nature and limitations of the police power as well as the nature and extent of riparian rights as property.<sup>34</sup>

Many of the powers inherent in the sovereign body to perform its necessary governmental functions are contained in the concept of the police power.<sup>35</sup> Since the nature of sovereignty itself is the source of this authority, the police power exists independently of the federal Constitution. Today, it is universally recognized that all property is held subject to reasonable regulation by the state under its police power;<sup>36</sup> no assertion of a property right is so unlimited that it is superior to the public good.

The police power has traditionally extended to providing for and protecting the public health, the public morals, the public safety, and the general welfare.<sup>37</sup> Regulation of water resources is grounded in the general welfare aspect of the police power. This category includes such an expansive area that it is incapable of any precise definition. Moreover, the idea of general welfare is constantly changing, and prevailing political and economic values may influence a determination of what is proper for the public welfare at any given point of time. The police power, however, is not entirely without limits. Although the police power is not derived from the federal Constitution, nevertheless, its exercise is subject to constitutional limitations.<sup>38</sup> In particular.

posals on Existing Rights, with Special Emphasis on the Michigan Proposal, in The LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 441 (Haber & Bergen eds. 1958).

34. See Lauer, The Riparian Right as Property, WATER RESOURCES AND THE LAW 133 (1958); King, Regulation of Water Rights under the Police Power, WATER RESOURCES AND THE LAW 271 (1958); and O'Connell, Iowa's New Water Statute—The Constitutionality of Regulating Existing Uses of Water, 47 Iowa L. Rev. 549 (1962).

35. The Mayor of New York v. Miln, 11 Pet. 102 (1837).

36. Queenside Hills Realty Co. v. Saxl, 328 U.S. 80 (1946); Eiger v. Garrity, 246 U.S. 97 (1918); Atlantic Coast Line R.R. v. City of Goldsboro, 232 U.S. 548 (1914).

37. See Chicago, B. & O. Ry. Co. v. People of the State of Illinois ex rel. Drainage Comm'rs, 200 U.S. 561, 592 (1906).

38. Lake Shore & M.S. Ry. Co. v. Smith, 173 U.S. 684, 689 (1899).

the due process clause of the Fourteenth Amendment is applicable to police power and will invalidate arbitrary and unreasonable state action.<sup>39</sup>

Since the outer limits of the police power cannot be ascertained by any set formula, they must be determined by examination of the subject matter upon which the power is exercised. The reasonableness of a regulation is tested by relating the object of the regulation to the means utilized. Under some circumstances the state may properly destroy one class of property in order to protect another which is of greater value to the public.<sup>40</sup>

A mere declaration that the restriction of a property right is for the public welfare, however, will not preclude judicial inquiry into whether this is a legitimate and proper exercise of the police power. Generally, the proper exercise of this authority requires that the object so regulated be one within the proper scope of the police power, that the classification be reasonable, that the means used not be arbitrary or unreasonable, and that the exercise of the police power bear a real and substantial relation to a legitimate public end.<sup>41</sup> The legislature, in the light of the constitutional protection of private property, may always enact measures which do not affect private property to such a degree that there has been a taking without due process of law. It may also pass measures which effect a taking of private property for public use only if provision is made for the payment of just compensation to the owner of such property, but may never effect a taking of private property for purely private purposes.<sup>42</sup>

Nevertheless, the United States Supreme Court clearly presumes that state legislation regulating economic interests is a valid exercise of the police power. So strong is the presumption of validity of property regulation legislation that the Supreme Court has indicated in effect that no violation of the Fourteenth Amendment can exist if "there is any rational basis for the action of the legislature."<sup>43</sup> With the increased strain on the nation's water resources, it is manifestly within the purpose of the police power to regulate the use of water in order to protect the public and promote the general welfare. It is apparent that without the proper utilization of its water resources society must seriously suffer.<sup>44</sup>

39. Liggett Co. v. Baldridge, 278 U.S. 105 (1928); King, supra note 34, at 282.

40. Miller v. Schoene, 276 U.S. 272 (1928).

41. King, supra note 34, at 276-77. 42. Lauer, supra note 34, at 138.

43. Sage Stores Co. v. Kansas ex rel. Mitchell, 323 U.S. 32, 35 (1944).

44. King, supra note 34, at 291.

Historically, because of water's important relation to the public welfare, the United States Supreme Court has upheld state regulation of water under the police power. The Court rejected the proposition that each riparian owner had a vested right in the use of flowing waters and was entitled to have them flow as they were wont, unimpaired as to quantity and uncontaminated as to quality, and instead held that every state was free to change its laws governing riparian ownership and to permit the allocation of flowing waters for such purposes as it may deem wise.<sup>45</sup>

### Riparian Rights as Property

Any analysis of the constitutional limitations of governmental regulation of property rights must consider whether the existence of a relationship between a person and an object amounts in legal significance to property, and whether a governmental act which results in a taking thereof is a denial of due process of law. Therefore, in evaluating the constitutionality of any proposed legislation which would modify the riparian doctrine, it must be ascertained to what degree rights of water use under the riparian doctrine are properly describable as property. If the existence of property rights to water use under the riparian doctrine is admitted, then the legislation must be examined to determine whether it would operate as a taking of any of this riparian property without due process of law.<sup>46</sup>

Two issues must therefore be considered in dealing with water rights rules. It must be determined whether the legal rules relating to the exercise of the riparian right to use water in themselves constitute property, and, if the rules do not constitute property, to what extent existing rules may be changed or new rules added before a taking of the usufructuary right will result.<sup>47</sup> There is virtually no authority as to whether the particularized rules which have been developed within the riparian doctrine over the past century are included within the concept of "property."<sup>48</sup>

Legal theorists are accustomed to dealing with objects of property which are inert in character, occupy an ascertainable situs, and may be subjected to effective and exclusive control. In the law concerned with less tangible forms of property, however, a substantial degree

<sup>45.</sup> Connecticut v. Massachusetts, 282 U.S. 660, 670 (1931). See also Hudson County Water Co. v. McCarter, 209 U.S. 349 (1908).

<sup>46.</sup> Lauer, supra note 34, at 138-39.

<sup>47.</sup> Id. at 188.

<sup>48.</sup> Id. at 174.

of confusion has resulted. Similarly, oil and gas, like wild animals "fugitive and vagrant [but] beneath the surface of the earth,"<sup>49</sup> have resisted the application of traditional property concepts.

Originally, no property right in water was recognized. In ancient Rome, water was placed in the same category as the air, the sea, or wild animals-res nullius, the property of no one, or as res communes, common property of everyone.<sup>50</sup> Similarly, the law of England historically held that a watercourse should be allowed to continue to flow in its established course, this theory of law being regarded as consistent with recognition of the community interest in watercourses, since anyone who acquired access to a watercourse might make use of the water. This doctrine of community ownership of flowing waters was gradually displaced during the nineteenth century by the notion that riparian owners had exclusive rights to the water. Restriction by the courts of the public right to use flowing waters can probably be attributed to several factors: the protection generally accorded to the creation of "absolute" private property in land, the recognition of the fact that industrialization and increased population would require a relatively stable doctrine of water use and would demand vastly increased uses, and doubtless a realization that some parcels of land appeared naturally more accessible than others to the water.<sup>51</sup> The modern riparian right, however, must still be considered far less certain and secure than most other forms of property.

The very nature of water renders property rights in it particularly susceptible to change by regulation. The uncertainty of such "rights," dependent as they are upon such variables as supply, the reciprocal rights of others, and the powers of government such as the federal government's navigation servitude, qualifies the extent to which they can be considered absolute property rights at all. To the extent that they are uncertain, a reasonable change under the police power alters expectations less, and arguably does not deprive a riparian of property without due process of law.

Common law rights to water are subject first of all to the fluctuations of water supply. These conditions create such uncertainty that it is extremely difficult to place a value on such rights, even when compensation is required. Furthermore, an examination of common law doctrines of water rights reveals the extent to which the reciprocal

51. Lauer, supra note 34, at 184-85.

<sup>49.</sup> Id. at 157-58.

<sup>50.</sup> Trelease, Government Ownership and Trusteeship of Water, 45 CALIF. L. Rev. 638, 640 (1957).

rights of others qualify the rights of any given person to water. In the East, a riparian's right to use water for artificial purposes is frequently subject to other riparians' natural or domestic uses. Likewise, a riparian's artificial uses must be reasonable when compared with the needs of the other users for artificial purposes.

In addition, riparian rights are subject to the federal government's navigation servitude. The United States Supreme Court has held that no riparian owner on a navigable stream is entitled to compensation for an impairment of his rights caused by the exercise of federal control over navigation. This would include loss of access to the navigable water,<sup>52</sup> loss of water power in a navigable stream,<sup>53</sup> and very likely even interference with diversion of water for beneficial purposes.<sup>54</sup> As far as nonnavigable streams are concerned, the United States Supreme Court has stated that "when the United States appropriates the flow either of a navigable or non-navigable stream pursuant to its superior power under the Commerce Clause, it is exercising established prerogatives and is beholden to no one."<sup>55</sup>

In addition to the power over navigation, the authority of the federal government to enter into treaties may restrict the exercise of riparian rights. Interstate compacts also take precedence over private water rights. Similarly, interstate apportionment by the United States Supreme Court in disputes between states may adversely affect riparian rights where the Supreme Court determines that uses made in one state are excessive and orders the state to reduce its consumptive uses. State-created water rights must also yield to interstate allocation of water by Congress.<sup>56</sup>

Thus, the uncertainty of riparian rights encourages an interpretation that there is no unconstitutional taking when these rights are exchanged for permit rights of finite duration. The very uncertainty of riparian rights militates against exempting existing uses from regulation, particularly where this would, in effect, give existing users the right to a fixed quantity of water, a right which they did not have at common law.

In fact, any distinction between existing uses and unexercised riparian rights may create a problem. The very nature of a riparian's property interest in water being usufructuary—not ownership of water

52. Scranton v. Wheeler, 179 U.S. 141 (1900).

53. United States v. Chandler-Dunbar Water Power Co., 229 U.S. 53 (1913).

54. Sato, Water Resources—Comments upon the Federal-State Relationship, 48 CALIF. L. REV. 43, 46 (1960).

55. United States v. Grand River Dam Authority, 363 U.S. 229, 233 (1960). 56. Arizona v. California, 373 U.S. 546 (1963).

### COMMENTARY

but the right to use it—makes questionable any distinction between the rights of a riparian presently using water and one who is not. The right to use the water which a riparian has already captured is only one aspect of his riparian rights. It is the right to continue capturing in the future that is truly valuable. It may be asked how constitutionally significant it should be whether a riparian is at the moment capturing water. It would seem that the element of expectation in the case of water rights, especially insofar as the reasonable use theory is adopted, is by definition more dominant than with more conventional property rights in land or chattels.<sup>57</sup>

It would follow that if the right to the use of water is considered to be property, then neither the validity of this right nor its status as property is determined by whether it is presently being exercised. The test of whether a right exists, or the nature of that right as property if it does exist, does not depend upon its present enjoyment. However, this does not foreclose the possibility that rights to the use of water not now being exercised can be restricted through an exercise of police power regulation or by a legislative abolition of the riparian doctrine.<sup>58</sup>

It is the opinion of the drafters of the Model Water Code that while the right to gain available water subject to equitable rules for distribution is a legally protectable interest, there is no property interest in those particular rules of distribution prevailing at any time.<sup>59</sup> To the extent that a change in the riparian system destroys equitable distribution, such a change may be unconstitutional as an invasion of property rights. However, if the rules are rationally changed, reflecting changing needs or a more realistic awareness of hydrologic phenomena, such legislation should be upheld as constitutional. The property interest each riparian has is not an interest in the rules as they exist at any given time—an interest which prevents the change of these rules or the introduction of any new ones. The property interest is rather a right to make use of the water under a system of reciprocal rights.<sup>60</sup>

A number of state courts have sanctioned systems altering existing uses of riparians. The Kansas Supreme Court, in *State* ex rel. *Emery* 

57. O'Connell, supra note 34, at 610.

58. Queenside Hills Realty Co. v. Saxl, 328 U.S. 80 (1946); Eiger v. Garrity, 246 U.S. 97 (1918); Atlantic Coast Line R.R. v. City of Goldsboro, 232 U.S. 548 (1914).

59. Baumann v. Smrha, 145 F. Supp. 617 (D. Kan.), aff'd 352 U.S. 863 (1956).

60. O'Connell, supra note 34, at 615.

v. Knapp,<sup>61</sup> upheld the validity of that state's new appropriation law against the objection that the property of riparians was taken without due process of law. The court indicated that riparian rights were always subject to modification by the legislature to the extent required by the conditions and wants of the people. Likewise, in *In re Water Rights of Hood River*,<sup>62</sup> the Oregon Supreme Court upheld sections of a statute which redefined "vested" rights and preserved the riparian rights only to the extent of their use at the time of its enactment or shortly prior thereto. The constitutionality of the Oregon Code, regulating both users' and nonusers' rights, was again upheld by the Ninth Circuit in *California-Oregon Power Co. v. Beaver Portland Cement Co.*<sup>63</sup>

However, in some cases where water rights statutes have cut off the existing rights of riparians, they have been held unconstitutional. A Nebraska statute that nullified riparian rights except in the very smallest streams was invalidated.<sup>64</sup> In California, parts of the 1913 California Water Code which (1) limited all water users to beneficial and reasonable uses, (2) limited the amount of water which could be used to irrigate each acre of cultivated land, and (3) provided for the loss of riparian rights for nonuse for ten years, were held unconstitutional as abridgments of riparian rights.<sup>65</sup> The Idaho Supreme Court held that a statutory appropriation system could not override the constitutional provision which guaranteed the right to divert unappropriated waters.<sup>66</sup> However, a modern interpretation of the police power may now allow introduction of a permit system even in those states which formerly held such legislation unconstitutional.

The fear of unconstitutionality has led one writer to suggest a statute of limitation-type curative provision.<sup>67</sup> Such a statute would require all persons claiming rights to the use of water as the result of interests acquired prior to the effective date of the act to file their claims with the commissioner before a certain date or their claims

61. 167 Kan. 546, 207 P. 2d 440 (1949).

62. 114 Ore. 112, 227 P. 1065 (1924).

63.73 F. 2d 555 (9th Cir. 1934), aff'd on other grounds, 295 U.S. 142 (1935). See Comment, 9 TEMP. L. Q. 354 (1935).

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

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

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

67. Hines, A Decade of Experience under the Iowa Water Permit System (Part One), 7 NAT. RES. J. 499 (1967); (Part Two), 8 NAT. RES. J. 23 (1968).

would be barred. A provision of this type is found in the Mississippi statute<sup>68</sup> and this fact has no doubt contributed to the lack of litigation under it. A similar feature is included in the Model Water Code. Existing users are given an opportunity to exchange their "riparian rights" for a permit. Those who had valid uses under the common law but who cannot qualify for a permit are entitled to compensation. There is a conclusive presumption of abandonment if no application is filed within a specified time.

### The Reasonable-Beneficial Use Standard

The reasonable-beneficial use standard is intended to protect other water users and the general public from wasteful uses of water. Both the riparian and prior appropriation systems were, in their earliest and least sophisticated forms, wasteful—although for different reasons. The reasonable use limitation and the beneficial use limitation, respectively, were grafted onto the two systems to improve their efficiency. The reasonable use rule in the East allows each riparian owner to use only such amounts of water as are reasonable under the circumstances with respect to the uses of other riparian owners.<sup>69</sup> The rule is sufficient to protect other riparians from some wasteful operations, but is of little use to nonriparians or to the general public.

The beneficial use rule of prior appropriation holds that an appropriator who diverts more water than is needed for his actual requirements and allows the excess to go to waste acquires no rights to the excess. There is no requirement of "reasonableness," however, in relation to other users or potential users. The courts have always exercised the power to declare that some uses were not beneficial or that certain applications of water did not fall within accepted classifications of beneficial uses.<sup>70</sup> In some western states administrative agencies have adopted detailed regulations prescribing the maximum allowable "duty of water," that amount reasonably necessary for a particular purpose or use, for which new rights will be granted. Legislative standards as to maximum amounts of irrigation water that may be used per acre, however, do not appear to have been overly successful; the amounts set are quite ample and tend to be the amount for which new rights are granted, and there seems to be some ten-

70. In re Deschutes River, 134 Ore. 623, 286 P. 1049 (1930).

<sup>68.</sup> See, e.g., Miss. Code Ann. §§5956-01 through -30 (Supp. 1971).

<sup>69.</sup> Maloney and Plager, Florida's Lakes: Problems in a Water Paradise, 13 U. FLA. L. REV. 1, 52 (1960).

dency to repeal these statutes and to divest administrative officials of the authority to prescribe appropriate limits in each case.<sup>71</sup>

The reasonable-beneficial use standard of the Model Water Code<sup>72</sup> is an attempt to combine the best features of the reasonable use and beneficial use rules. First of all, the quantity of water used must be efficient with respect to the use itself. This is basically a test of economic efficiency with water being regarded as a raw material. Thus, if a particular crop can be grown properly with five acre-feet of water per year, it would be wasteful to use ten acre-feet, since no increase in value is obtained from the increased use of water. On the other hand, if it is technically feasible to use 5,000 gallons per day in an operation, but total costs can be reduced substantially by the use of 10,000 gallons per day, the reduction in overall costs may justify the increased use of water. It should be noted that this part of the reasonable-beneficial use test allows only that quantity of water to be used as is necessary for an economically efficient operation. The value of the use itself in relation to other uses is not considered initially. In an agricultural operation, for example, the test does not require a farmer to raise one crop because it takes less water per dollar of crop value than another crop. Nor does the test require that a permit be denied to an agricultural operation because the ultimate dollar value produced per gallon of water used is greater for industrial operations than agricultural uses. This type of limitation as to quantity of water may be imposed at common law under the reasonable use rule. However, efficiency is required at common law only when other riparians are injured as a result. In the example above, under the common law rule the farmer would be free to use ten acre-feet unless the water supply is affected thereby to the detriment of other riparians.

The reasonable-beneficial use standard also requires that the water (regardless of amount) be used "for a purpose . . . which is both reasonable and consistent with the public interest." The requirement means that the purpose must be reasonable in relation to other uses. This criterion does not require that the use be the most economical use of water possible, but only that the use not be detrimental to other users or totally inconsistent with the character of the watercourse from which the supply is taken.<sup>73</sup> But the use must also be consistent

71. See Nev. Rev. Stat. Ann. §533.070 (1963); Fisher, supra note 2, at 97. 72. MODEL WATER CODE §1.03 (4).

73. Under the original reasonable use rule, a particular use, regardless of the quantity of water used, might be considered unreasonable if other riparians

with the public interest. This requirement is entirely foreign to the riparian system; however, in all but two of the seventeen prior appropriation states a permit application may be denied if the proposed use would be contrary or detrimental to the public interest.<sup>74</sup> The legislation which confers this power on the administrative agency seldom provides standards for its exercise, but preference provisions have been considered as one standard of the public interest in certain instances. There are few reported decisions relating to denials of applications on this ground, however, and despite the favorable judicial attitude reflected in each of them, these cases suggest that to date this power has been infrequently used in the West.<sup>75</sup>

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

In short, the reasonable-beneficial use standard, as applied in the Model Water Code, is an attempt to combine the best features of both the eastern reasonable use rule and the western beneficial use standards for consumptive use of water. The standard is somewhat flexible,

74. Davis, Australian and American Water Allocation Systems Compared, 9 B.C. IND. AND COM. L. REV. 647, 689 (1968).

75. Cookinham v. Lewis, 58 Ore. 484, 114 P. 88, 115 P. 342 (1911); Young & Norton v. Hinderlider, 15 N.M. 666, 110 P. 1045 (1910); Fisher, *supra* note 2, at 129-30.

were adversely affected. The earliest cases, usually involving watercourses, put primary emphasis on the right of the riparian owner to use the water for domestic and household purposes, including watering of farm animals; and these uses were generally referred to as "natural" uses, as distinguished from "artificial" uses, such as for irrigation and manufacturing. As a general rule, the riparian owner was permitted to use such water as was necessary for his natural uses regardless of the effect on lower owners on the watercourse. On the other hand, he could not use the water for artificial purposes if it would interfere with the flow to the lower owners who were making natural uses. The reasonableness of the use was not a consideration. In many eastern states no distinction is made between natural and artificial uses and riparian owners have a common right in water, with each owner entitled to make such natural or artificial use of the water as is reasonable under the circumstances with regard to the uses of the other riparian owners.
but through a process of judicial and administrative interpretation may be expected to become more certain at the operative level.

#### Security and Transferability of Water Rights under a Permit System

Acceptance of a regulatory statute by water users will depend in large part upon the certainty or security of the water rights obtained under its provisions. One of the goals of much of the statutory modification of riparianism in the East has been to create a more secure water right than is possible under the common law. In the West, complete tenure security is given by means of a perpetual right to a fixed quantity of water under the prior appropriation system. However, the authors believe that water rights exercised under the proposed code should not become so inflexible that water resources cannot meet new needs and demands by transfer from existing uses to more beneficial new uses. In order to avoid the undesirable effects of inflexibility in the transfer of water rights while retaining adequate security, three approaches are available. The first is to establish a permit term of short duration; the second is to grant a long-term permit but also to impose a preference system; and the third is to grant a perpetual permit and allow free alienability of water rights.

The easiest way to maintain flexibility is to keep the term of the permit short. However, economists generally have maintained that this period should be sufficient to allow water users to recover their investments made in water resource works. Nearly all water uses by private individuals or firms require the investment of capital or labor in some form of plant or equipment for capturing the water or for using the water after capture. Investment of either type will ordinarily be made only if the investor can evaluate the risk of losing his capital and if he can foresee the probability that he can use the plant for a sufficient time to bring him a profit. A policy against granting secure water rights may prevent water use for desirable purposes. Complete uncertainty under common law riparianism may prevent any investment in facilities for water diversion or water use, but granting the right for a period of time may not remove the objection if the period is too short.<sup>76</sup> This principle was accepted by the drafters of the Model Water Use Act, who inserted a permit term of up to fifty years.<sup>77</sup> New Jersey's permit system likewise pro-

76. Trelease, Policies for Water Law: Property Rights, Economic Forces, and Public Regulations, 5 NAT. Res. J. 25 (1965).

77. MODEL WATER USE ACT §406 (1958).

vides for a term sufficient to allow amortization of capital, but imposes a limit of twenty-five years.<sup>78</sup>

A second means of obtaining flexibility in the regulation of water resources is to provide for involuntary transfer of water rights through the operation of a preference system. This method has been employed extensively in the West to temper the otherwise inflexible system of water rights under the prior appropriation doctrine.<sup>79</sup> These preferences are applicable in two situations. They may allow the subordination or termination of an existing use, usually upon payment of compensation, in order that the water may be reallocated to a preferred use. Preferences may also function as guides for the state agency in deciding whether to approve, modify, or reject applications for new rights.<sup>80</sup>

Preference provisions in some states are made expressly applicable to the acquisition of new rights. In a few states the provisions also require that, when competing applications for appropriation of the same water are pending concurrently, the agency must approve the application contemplating the more preferred use even though that application was filed later than other applications.<sup>81</sup> Domestic and municipal uses are accorded first preference in all states having preference provisions, and irrigation is generally favored over industrial and other uses.<sup>82</sup>

Assuming that a preference is a desirable means of promoting transfer of water rights for application to a more beneficial purpose, it must then be determined if compensation should be paid to a user when he is displaced by a preferred user. In those states which have adopted prior appropriation, involuntary transfers under the preference system always involve compensation.<sup>83</sup> One reason for this is that water rights under prior appropriation are certain in quantity (subject to uses of higher priority) and perpetual in duration. Compensation for such transfers has also been defended on the basis of the "compensation principle" of welfare economics. This principle is most often stated in terms of the "Pareto criterion": a change that makes at least one individual better off and leaves no individual worse off represents an increase in welfare.<sup>84</sup> That aspect of the principle

78. N.J. STAT. ANN. §58:1-44 (1966).

79. E.g. Thomas, Appropriations of Water for a Preferred Purpose, 22 ROCKY MT. L. REV. 422 (1950).

80. Fisher, supra note 2, at 123.

81. Id. at 127; e.g., ARIZ. REV. STAT. §45-147 (1956).

82. Fisher, supra note 2, at 124; e.g., KAN. STAT. ANN. §82a-707 (1969).

83. Fisher, supra note 2, at 123. 84. Trelease, supra note 76, at 31.

requiring that no person's position be worsened is usually satisfied by compensation for those injured by the change. The amount of such compensation is another factor which must be considered if a preference system is to be established. Compensation must not be such as to discourage transferability, but should be kept to the minimum necessary to allow safe investment. A formula allowing for payment of original capital outlay plus a fair return may satisfy this need.<sup>85</sup> In the East, the use of a preference system without provision for compensation may be possible; however, the fact that this approach is attended by even greater uncertainty for users than that faced under the short-term permit system militates against its adoption.

A third alternative is to grant a permit of perpetual or extremely long duration but to provide for free alienability. Some economists have argued that security of water rights which fosters development and investment will not necessarily result in loss of flexibility. Rather, a water right with these aspects of security and transferability is a property right that can move in response to economic forces.<sup>86</sup> To some extent this has occurred in western states in situations where the preference system was not a factor.

After careful study, the drafters of the Model Water Code have chosen the first alternative, provision for permits of limited duration, as the method best suited to introducing a permit system to a riparian state. In general, permits under chapter 2 of the Model Water Code are granted for a period of twenty years. During this time the water user is assured that he will have sufficient water for the use set forth under the terms of his permit. At the expiration of this period, however, the water user must apply for another permit in order to continue his use.

The question arises whether one whose permit is not renewed should receive compensation. One approach to the problem of compensation is found in federal legislation relating to hydroelectric dam licenses. The Federal Power Act has a provision which authorizes the federal government to recapture licensed projects, upon the expiration thereof, upon the payment of new investment in the project.<sup>87</sup> The Federal Power Commission may also refuse to renew the license and instead grant the license to a new applicant who would have to pay the former license-holder the same amount as the government would.<sup>88</sup> While a number of these licenses are now reaching expiration,

85. Id. at 25–26. 86. Id. at 29–34. 87. 16 U.S.C. §807 (1970). 88. Id.

the Federal Power Commission has not yet exercised its right of recapture.<sup>89</sup> It would appear that there is considerable reluctance on the part of the government to displace an existing license-holder with a new one without some compelling federal policy.

The Federal Power Commission has also inserted a condition in some hydroelectric license applications which would enable it to allow another to make joint use of the licensee's facilities. The licensee would be compensated at least to the extent of reimbursement for damages or expenses arising from the joint use. This device has been upheld by the courts.<sup>90</sup> Rumford Falls Power Co. v. Federal Power Comm'n appears to state that one who undertakes to use a public resource will be protected to this extent. While he is making use of the resource he will receive a full return on his actual dollar outlay, but he will not be entitled to receive the full market value of the public resource.<sup>91</sup>

There is, of course, a basic distinction between compensation for capital outlay expended in a hydroelectric project and compensation for a right to use water. In the latter instance, for example, there normally is no use of the earlier permittee's facilities by the subsequent water user. Therefore, the recapture provisions of federal power licenses are not clearly analogous to provisions in the Model Water Code regarding compensation due to a permittee upon nonrenewal of his permit.

Another problem is the measure of compensation. Should it be the value of the water itself, the capital outlay invested in facilities used to obtain, transport, and store water (whether or not the new user makes any use of them), or the total damage to the operation up to the entire investment if the operation must be terminated? Must the state pay compensation if the permit is not given to another but is simply not renewed? These difficulties have led to the conclusion that no compensation should be paid upon expiration of the permit since the investment in theory is supposed to be amortized over the life of the permit. Under the Iowa statute, permits are granted for only ten years with no provision for compensation in the event of nonrenewal. This policy has not been challenged thus far, but as of 1968 no renewal application had been refused in Iowa. Nevertheless, the drafters of the Model Water Code have followed the Iowa approach

89. J. SAX, WATER LAW PLANNING & POLICY 281 (1968).

90. E.g., Rumford Falls Power Co. v. Federal Power Comm'n, 355 F. 2d 683 (1st Cir. 1966).

91. Id. See Sax, Licenses: Restricting Private Rights in Public Resources, 7 NAT. RES. J. 339 (1967). citizen cannot begin another action, but may intervene by right.<sup>332</sup> The Florida<sup>333</sup> and Tennessee<sup>334</sup> acts have a 30-day notice and waiting period, analogous to the Clean Air Amendments. Conversely, the Michigan Environmental Protection Act of 1970 does not require the citizen to notify the responsible state agency, and the citizen may commence his action immediately, without waiting for possible agency action.<sup>335</sup>

The latter approach seems to be premised on the theory that failure of the agency to act in the first instance is sufficient evidence that it is unwilling to act to justify direct judicial intervention. But arguably the best interests of the court, the agency, and the public will be served by giving the agency a fair opportunity to bring its expertise to bear before turning its job over to the courts on the theory that its failure to act indicates prejudice on behalf of the party to be regulated. As one court has recently put it, in another context,<sup>336</sup> "The potential for litigious interruption of orderly administrative procedures is certainly greater where plaintiff has not even bothered to obtain an initial determination by the administrative agency." This section adopts this latter approach by allowing any person or organization to file a complaint with the governing board. Once before the governing board, the complainant may utilize the administrative and judicial review provisions of the code, §§1.22 and 1.11, if he is dissatisfied with agency action.

Other states having similar provisions are California Water Pollution Control Laws, \$13320; Illinois Environmental Protection Act, \$31 (b); and Tennessee Water Quality Control Act of 1971, \$17. The subsection of the proposed code is taken largely from the Tennessee and Illinois laws which permit any person to file with the board a complaint against any person in violation of their law.

#### **§1.21** Proceedings before the Governing Board

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

332. 42 U.S.C. §1857h-2 (b) (1970).

333. Environmental Protection Act of 1971, FLA. STAT. §403.412 (1971).

334. Tennessee Water Quality Control Act of 1971 §9 (a) [Environmental Rptr. 916:0105].

335. MICH. COMP. LAWS ANN. §§691.1201-.1207 (1970).

336. Sierra Club v. Hardin, 325 F. Supp. 99, 116 (D. Alas. 1971).

COMMENTARY. The provisions of \$1.21 are exactly the same as those of \$1.10 concerning enforcement proceedings before the state board.<sup>337</sup> This subsection is original.

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

COMMENTARY. This subsection was taken from a Florida statute.<sup>338</sup>

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

COMMENTARY. This provision was modeled after a part of the California Water Code.<sup>339</sup>

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

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

COMMENTARY. This subsection is patterned after a Florida statute.<sup>340</sup>

337. See Model Water Code, Commentary §1.10 infra.
338. Fla. Stat. §120.23 (1971).
339. Cal. Water Code §1080 (West 1971).
340. Fla. Stat. §373.181 (1971).

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and made no provision for compensation for failure to renew a consumptive use permit.

#### Seasonal Permit Proposals

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

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

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

#### **§2.01** Permits Required

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

COMMENTARY. This subsection declares that no consumptive use of water other than a domestic use as defined in §1.03 (6) shall be made without first obtaining a permit from the governing board. The phrase "withdrawal, diversion, impoundment" has been inserted to include such activities as hydroelectric power production where water is not permanently removed from the source of supply. Under the Model Water Code, all withdrawals of water other than for domestic

uses will be subjected to some degree of regulation. The domestic use exemption was included because (1) it is impractical to regulate numerous small users; (2) domestic use is permitted at common law under both the natural flow doctrine and the reasonable use modification; (3) individual domestic users collectively account for a relatively small amount of water used; and (4) regulation of municipal waterworks and other public water suppliers can effectively control domestic consumption in urban areas.

Waters that constitute the boundaries of the state are exempted in some state statutes.<sup>92</sup> In most cases control would be difficult because some users would lie beyond the jurisdiction of the regulating state. Nevertheless, in recognition of the principle that political boundaries are not relevant to hydrologic problems, no such exemption was included in the Model Water Code. It is hoped that the state would employ its powers under §1.06 (11) (b) to regulate boundary waters by means of interstate compacts. This subsection is original.<sup>93</sup>

(2) In the event that any person shall file a complaint with the governing board that any other person is making a diversion, withdrawal, impoundment, or consumptive use of water not expressly exempted under the provisions of this code and without a permit to do so, the governing board shall cause an investigation to be made, take appropriate action, and notify the complainant thereof.

COMMENTARY. Subsection (2) authorizes the governing board to investigate complaints of illegal uses of water. The governing board is authorized to use its powers of entry and inspection under \$1.17 (2) when investigating such a complaint. No specific procedure is provided for the issuance of an order to discontinue use, but the provisions of \$1.21 would be applicable in the event that the defendant wished to contest the order. The governing board could also initiate a criminal prosecution under \$1.25 (3). This subsection is modeled after a provision of the Iowa Code.<sup>94</sup>

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

92. E.g., Fla. Stat. §373.091 (2) (1971); Iowa Code Ann. §455A (Supp. 1971).

93. All provisions of chapter 2 are original unless otherwise indicated in the commentary.

94. IOWA CODE ANN. §455A.32 (Supp. 1971).

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COMMENTARY. No consumptive regulation of salt water, such as control over desalinization plants, is intended under the permit system established in chapter 2. Coastal waters as defined in \$1.03 (13) are expressly excluded from the purview of this chapter even though such waters are included within the general definition of waters of the state in \$1.03 (8), and are subject to regulation under chapter 5 (water quality). Neither does chapter 2 attempt to regulate consumptive use of atmosphere moisture. Once the rain falls to earth, it becomes subject to the provisions of chapter 2 as surface or ground water.

#### **§2.02** Conditions for a Permit

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

COMMENTARY. The proposed statute is similar to the Iowa Water Permit Statute in that there is only one type of permit available and the basic criteria are the same for all permit users.<sup>95</sup> This means that, in general, available water will be assigned on the basis of priority to any qualified applicant. Subpart (a) requires that the proposed use meet the requirements of the reasonable-beneficial standard.<sup>96</sup> Subpart (b) requires that the proposed use not interfere with presently existing legal uses of water. This category would include domestic uses exempted under §2.01 (1) of the Model Code, as well as existing uses exercised under the authority of a valid permit. Subpart (c) requires that the use not conflict with the public interest. For example, a proposed use, otherwise valid, which would have an unreasonably harmful effect on fish or wildlife might well be rejected as being inconsistent with the express statement of public interest in the protection of fish and wildlife found in §1.02 (3). Subpart (c) also

95. This is analogous to the issuance of fishing licenses as Hines has pointed out: "The licensee-permittee receives a permit to carry on an activity illegal without the permit. Some restrictions are placed on his conduct of the licensed activity (daily creel limits) but there is no notion of competition for the right to carry on the regulated activity. No real inquiry is made concerning whether the applicant is more or less deserving of his permit than other applicants." Hines, *supra* note 30, at 506.

96. MODEL WATER CODE §1.03 (4).

requires that the permit be in accord with the State Water Use Plan and the State Water Quality Plan which together constitute the State Water Plan. Such elements of the State Water Plan as streamflows must always be complied with. In addition, when the State Water Use Plan sets out a prohibited use, this requirement will also operate to deny a permit for such use. In addition, sufficient water must be left in a watercourse to maintain the stream standards designated for the particular source of supply by the State Water Quality Plan.

However, a permit application would not necessarily have to be denied for failure to meet the conditions of subpart (c) if restriction providing adequate safeguards on the use of water could be inserted in the permit. For example, a permit authorizing a diversion or impoundment without restrictions as to time of year might be harmful to a particular species of fish or wildlife during a certain time of the year, such as the breeding period. This objection could be removed, however, if the permit forbade the diversion or impoundment during this crucial period but permitted it at other times when no harm to the species would occur.

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

COMMENTARY. This subsection modifies the common law to allow transportation of surface water beyond riparian or overlying land. If a system of water law is to be efficient, it must permit the use of water on nonriparian land. The same principle applies to use of ground water beyond overlying land. Many of the existing eastern permit statutes are silent on this point, so that it is not certain whether the common law place-of-use restriction remains in force in those jurisdictions.<sup>97</sup>

An Illinois statute allows nonriparian use under permit for industries, manufacturing, or public utility purposes.<sup>98</sup> The Wisconsin irrigation permit statute allows irrigators to use water on contiguous nonriparian land provided the total irrigated acreage does not exceed that

<sup>97.</sup> Davis, supra note 74, at 700.

<sup>98.</sup> ILL. STAT. ANN. ch. 19, §65 (Smith-Hurd Supp. 1970).

which is irrigable on the riparian tract alone.<sup>99</sup> The present Florida statute provides for such transfer,<sup>100</sup> although only for "excess" waters. Other riparian states such as Kentucky,<sup>101</sup> Minnesota,<sup>102</sup> Virginia,<sup>103</sup> and Wisconsin<sup>104</sup> have used the excess or surplus water approach. The Model Water Code, however, imposes no "excess water" limitation on transfer of water beyond riparian land. Permits will be issued to qualified users regardless of whether or not they plan to use the water on overlying or riparian land. This provision is primarily intended to assist municipalities, which are seldom considered riparians at common law. There is considerable evidence that many municipal users in the past have made extensive consumptive use of surface and ground water in violation of the common law limitations.<sup>105</sup>

This subsection is a modified version of FLA. STAT. §373.141 (1) (1971).

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

COMMENTARY. This provision is designed to integrate the operation of the permit system with the State Water Use Plan and State Water Quality Plan. Under this subsection, the governing board by regulation may set aside a fixed quantity of water; no future permit application can be made for water reserved in this fashion. Subsection (3) would be of particular value in connection with the maintenance of water quality standards, as it would provide a margin of safety during periods of low flow.

This subsection was taken in modified form from CAL. WATER

99. WIS. STAT. ANN. §30.18 (5) (Supp. 1971).

100. FLA. STAT. §373.141 (1) (1971).

101. KY. REV. STAT. ANN. §262.690 (3) (1965) [Repealed in 1966 c. 23, §39 per KY. REV. STAT. (1969)].

102. MINN. STAT. ANN. §§105.38-.64 (Supp. 1971); see Ellis, Some Current and Proposed Water-Rights Legislation in the Eastern States, 41 IOWA L. REV. 237, 239-41 (1956).

103. VA. CODE ANN. §§62.1–104 to -115 (1968).

104. WIS. STAT. ANN. §30.18 (2) (Supp. 1971).

105. See Dufer and Becker, Public Water Supplies of the 100 Largest Cities in the United States, GEOLOGICAL SURVEY WATER SUPPLY PAPER 1812 (1964).

#### COMMENTARY

CODE §1258 (West 1971). Reservation of water under the California provision, however, may only be made to implement water *quality* control plans.

**\$2.03** Existing Uses

(1) All existing uses of water, unless otherwise exempted from regulation by the provisions of this code, may be continued after the effective date of this code only with a permit issued as provided in section 2.04 of this code.

COMMENTARY. The drafters have taken the position that so-called vested rights arising from ownership of riparian or overlying land are subject to reasonable regulation under the state police power in the same manner as any other property right.<sup>106</sup> Therefore, nondomestic uses of water in existence at the time of enactment may be continued only upon compliance with the provisions of §2.03.

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

COMMENTARY. Several alternative methods of treating existing water uses were considered by the drafters. One possibility is to exempt presently existing uses from the provisions of chapter 2 entirely. This approach avoids the vested rights problem altogether and has been adopted in a number of water law statutes in the East.<sup>107</sup> However,

106. Where use of water on nonriparian land is allowed, the problem of nonriparian users' lack of access to water can arise. Adoption of the "easement or aquaduct" concept would alleviate that problem. The concept empowers a water user to condemn a right-of-way for a ditch across a third person's land to gain access to water. This principle was incorporated into European water codes in the nineteenth century. Payment of compensation is required in those states which have adopted this concept. *E.g.*, COLO. CONST. art. XVI, §7; COLO. REV. STAT. ANN. §§31–14–3, 50–2–1 (1964); MONT. CONST. art. III, §15; MONT. REV. CODE ANN. §89–820 (1964); NEB. REV. STAT. ANN. §§46–236 to -247 (1968); NEV. REV. STAT. ANN. §533.050 (1963); N.M. STAT. ANN. §75– 1-3 (1968); OKLA. STAT. ANN. tit. 82, §2 (1970); ch. 58, §5.035 [1971] TEX. LAWS 116; UTAH CODE ANN. §73–1–6 (1961); WASH. REV. CODE ANN. §90.03.-040 (1962); WYO. STAT. ANN. §1–794 (Supp. 1971). However, it would seem that the granting of the power to condemn a right-of-way and the determination of where it is to run should be controlled by the governing board.

107. See, e.g., IND. STAT. ANN. §27-1305 (1970); MD. STAT. ANN. art. 96A,

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wholesale exemption of present users is contrary to the concept of comprehensive regulation of water resources. A second alternative is to grant a perpetual permit to existing users for the amount of water being used at the time the statute becomes effective. This concept was incorporated into an earlier Michigan proposal.<sup>108</sup> The irony of this approach is that riparian rights are converted into a species of prior appropriation. While this approach is feasible, in theory at least, considerable problems can be anticipated where two types of water rights, vested rights and permit rights, co-exist in the same watercourse. Even greater difficulties would be encountered if riparian rights were not reduced to a specific quantity of water. This situation exists in several western states where both riparian and prior appropriation rights are recognized.<sup>109</sup>

A final alternative, other than refusing to recognize any distinction at all, is to give existing rights priority in the granting of a permit. The Mississippi prior appropriation statute follows this approach by giving riparians the first opportunity to perfect their rights.<sup>110</sup> Existing users are given a somewhat similar advantage under the provisions of this section of the Model Water Code since the requirements of \$2.02 (1) (c) are waived. This treatment is admittedly not as generous as the Mississippi statute, since the riparian rights are exchanged for a twenty-year permit rather than one of unlimited duration. It should also be noted that, to qualify under this provision, the existing use must be "lawful under the common law of this state." This is intended to preclude all uses in violation of the riparian doctrine particularly those involving use beyond riparian or overlying land. The code makes no express mention of water uses in violation of the riparian doctrine to which prescriptive rights have attached. Such rights have been recognized in some jurisdictions.<sup>111</sup>

In essence, subsection (2) will do little more than guarantee existing users a twenty-year extension of their use. This approach will not alleviate the loss of a riparian who has purchased his property at a price reflecting the potential value of undeveloped water, but who has

110. See Miss. Code Ann. §5956-04 (A) (Supp. 1971).

111. Beuscher, Appropriation Water Law Elements in Riparian Doctrine States, 10 BUFFALO L. REV. 448, 452 (1961).

<sup>§11 (</sup>Supp. 1970); MINN. STAT. ANN. §105.39 (1964); N.J. STAT. ANN. §58:1 (1966).

<sup>108.</sup> Proposed Surface Water Law for Michigan, in THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 49 (Haber and Bergen eds. 1958). 109. See, e.g., Rarick, Oklahoma Water Law, Stream and Surface in the Pre-

<sup>1963</sup> Period, 22 OKLA. L. Rev. 1 (1969).

not yet exercised these rights. While it is quite likely that such a person could successfully apply for a permit at a later time, the Model Water Code makes no provision for compensation in the event his permit application is denied.

(3) Applications for permit under the provisions of subsection (2) above must be made within a period of three (3) years from the effective date of this code. Failure to apply within this period shall create a conclusive presumption of abandonment of the use, and the user if he desires to revive the use must apply for a permit under the provisions of section 2.04 of this code.

COMMENTARY. Since the total amount of water assigned to existing users under §2.04 must be known before the provisions of the State Water Use Plan and the State Water Quality Plan can be implemented, this subsection provides for a three-year grace period after which further applications for a permit under §2.03 are precluded by a conclusive presumption of abandonment. This is a prior appropriation feature; riparian rights did not lapse through nonuse under the common law. The Model Water Use Act has adopted a similar abandonment provision;<sup>112</sup> however, the abandonment period is four consecutive years of five out of seven years. The code provides for a more stringent three-year period.

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

COMMENTARY. Those existing uses which are valid under the common law riparian doctrine of the state but fail to meet the requirements of the reasonable-beneficial use standard will be terminated, but the user will receive compensation for the impairment of his property rights. The burden of proof would be upon the water user to establish that he is entitled to compensation under the provisions of this subsection. The Massachusetts Wetland Statute<sup>113</sup> employs a similar approach. Under its provisions, any person damaged by action of the special

112. MODEL WATER USE ACT §306 (1958). 113. MASS. STAT. ANN. ch. 252, §12 (1968). district's activities may proceed to obtain compensation under the state eminent domain statute.

**§2.04** Application for a Permit

(1) All permit applications filed with the governing board under this chapter and notice thereof required under section 1.19 of this code shall contain the name and address of the applicant (in the case of a corporation, the address of its principal business office), the date of filing, the date set for a hearing if any, the source of the water supply, the quantity of water applied for, the use to be made of the water and any limitations thereon, the place of use, the location of the well or point of diversion, and such other information as the governing board may deem necessary.

COMMENTARY. This subsection sets out the information that must be included on the permit application. The governing board by regulation may require additional information from all applicants and may require additional information from a particular applicant at its discretion. This provision is modeled closely after a portion of the California Water Code.<sup>114</sup>

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

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

(3) If the proposed application does not exceed [150,000] gallons per month, the governing board may consider the application and any objections thereto without a hearing. If no objection to the application is received, the governing board, after proper investigation by its staff, may at its discretion approve the application without a hearing if the proposed application does not exceed [1,500,000] gallons per month. Otherwise, the

114. CAL. WATER CODE §1301 (West 1971).

## governing board shall set a time for a hearing under section 1.21 of this code.

COMMENTARY. No public hearing is required if the proposed use involves a minimal amount of water even though an objection has been filed under subsection (2). The Iowa statute exempts entirely all uses of water under 5,000 gallons per day.<sup>115</sup> This figure would amount to 150,000 gallons per month. This figure was regarded by the drafters as minimal. In some states a substantially larger figure might be realistic. A monthly total was used rather than an annual one to avoid a situation where a permittee makes use of his annual total (about 1.5 million gallons) within a relatively short time. The monthly total represents an absolute limit, which may not be exceeded in any month. It should be noted that the governing board may still refuse to grant a permit under these circumstances. Since waiver of the hearing is at the board's discretion, it would appear that a hearing would be held if the governing board was of the opinion that the permit application should be denied. An administrative appeal under \$1.22 would be available to all interested parties whether or not a hearing under §1.21 is held.

If the quantity of water desired is between 150,000 and 1.5 million gallons per month, the governing board may waive a hearing if no proper objections are received. A hearing will always be required whether or not an objection is made to the application if the quantity of water involved exceeds 1.5 million gallons per month.

This subsection is original, although provisions of the same general type may be found in Texas,<sup>116</sup> Minnesota,<sup>117</sup> Iowa,<sup>118</sup> and Washington statutes.<sup>119</sup>

#### **§2.05** Competing Applications

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

116. Ch. 58, §5.123 [1971] TEX. LAWS 126.

118. IOWA CODE ANN. §455A.19 (1) (Supp. 1971).

119. WASH. REV. CODE ANN. §90.03.260 (1962).

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<sup>115.</sup> IOWA CODE ANN. §455A.25 (2) (Supp. 1971).

<sup>117.</sup> Minn. Stat. Ann. §105.44 (1) (Supp. 1971).

COMMENTARY. This subsection provides for determination of water rights when two or more parties have filed permit applications for the same source of supply. Ordinarily, priority in time results in priority of right of earlier permit holders. However, this situation can develop when an objection is filed to an initial permit application and the objector immediately files an initial application. This would be considered a simultaneous filing. Also, an application may be filed to appropriate water currently being used in accordance with a valid permit. Such an application would be considered at the time the current permit expired.

In a state where water is plentiful, this situation would be relatively uncommon. However, in certain highly developed areas it is conceivable that water needs might well exceed available supplies, or at least exceed those supplies which are economically most attractive to utilize.

Since water rights under the prior appropriation system are based on priority alone and are granted in perpetuity, the problem of competing applications seldom arises in western states. The Iowa statute does not expressly consider the problem at all. The Model Water Use Act provides that "in granting permits when there are competing applicants for the supply of available water, the commission shall give no preference or priority to application first in time, but shall be governed by the standard of beneficial use."<sup>120</sup> This suggests that some review is given to the permit at the time of renewal but does not indicate what action the agency must take when both proposed uses are beneficial. Also the definition of "beneficial use" under the act appears to be an absolute standard, not a comparative one.<sup>121</sup> Therefore, the water resources agency could not conveniently determine which use was "more beneficial," nor does the provision suggest such an approach.

Since the Model Water Code does not establish a preference system, each application receives the same consideration if the proposed use is beneficial. Therefore, the governing board must first examine the applications to see if each one meets the requirements of \$2.02. If the State Water Plan has established a preferred use for the particular source of supply, the permit will be granted on that basis if one of the proposed uses fits into that category. The problem may also be solved by rejecting one or more applications for failure to qualify as a reasonable-beneficial use. Since the governing board need not grant

120. MODEL WATER USE ACT §407 (d) (1958). 121. *Id.* at §102 (a).

the entire amount of water requested, it may also apportion available water between two applicants by granting less than either has requested.

If the amount of water requested causes an otherwise reasonablebeneficial use to fail to meet the requirements of the standard, the board may see fit to reduce the amount requested. The application might be approved so as to satisfy all needs. Thus, the governing board through a process of negotiation may be able to apportion the water among all of the competing applicants in such a way as to satisfy each one's demands.

If the governing board determines that both proposed uses meet the requirements of §2.02, it becomes necessary to apply an additional test to decide which user will be granted the permit. Under the provisions of this subsection, the governing board must consider the relative benefits to be derived by the public from the proposed uses of water. This language, while undeniably vague, does suggest general criteria for the board to consider. Public bodies, such as municipalities, governmental agencies, and public utilities, should be preferred over private users. Economically more productive uses should normally be preferred over less productive uses since the economy of the area would benefit more from the former. Certain purposes, such as protection of fish and wildlife, navigation, public recreation, municipal uses, and others, are expressly declared to be in the public interest in \$1.02 (3). It would seem also that uses which do not substantially impair water quality might be preferred over those that do. Despite these general guidelines, however, the governing board retains considerable discretion in such cases, and may be expected also to take into account additional factors of a similar nature. In any event, the board's decision is subject to administrative and judicial appeal and may be overruled if it appears to be arbitrary or unfair.

This subsection is original. However, a similar approach is followed in §14 of the Michigan proposal.<sup>122</sup>

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

COMMENTARY. Only when the proposed uses are equal in every respect will the governing board award the permit on the basis of

122. See Proposed Surface Water Law for Michigan, supra note 108, at 54.

priority. There appears to be a sound equitable basis for preferring a renewal applicant over a new user under these circumstances. Priority should also be considered, all things being equal, when both parties are initial applicants.

#### **§2.06** Duration of Permits

(1) Permits may be granted for any period of time not exceeding twenty (20) years. The governing board may base duration of permits on a reasonable system of classification according to source of supply, type of use, or both.

COMMENTARY. The Model Water Code provides each permit user with a secure right to a specific amount of water for a specific length of time. While other alternatives are available,<sup>123</sup> most statutory modifications of the riparian system have adopted a similar approach. The Model Water Use Act provides for a permit period of up to fifty years.<sup>124</sup> The Iowa statute allows only a ten-year maximum.<sup>125</sup>

The fifty-year period would probably be excessive for most water uses. Such a long period would allocate the prime sources of water supply to present uses for a long period of time, while limiting more productive future water uses to less desirable sources of supply. A lesser period with frequent renewals would impart more flexibility to the permit system and provide more opportunities for future users to share in available water supplies. The ten-year maximum allowed under the Iowa statute<sup>126</sup> has been criticized as being insufficient to allow recovery of depreciation for many investments.<sup>127</sup>

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

## (2) The state board may authorize a permit of duration of up to fifty (50) years in the case of a municipality or other govern-

123. See discussion at pp. 173-77.

124. MODEL WATER USE ACT §406 (1958).

125. IOWA CODE ANN. §455A.20 (Supp. 1971).

126. Id.

127. O'Connell, supra note 34, at 579.

mental body where such a period is required to provide for the retirement of bonds for the construction of waterworks and waste-disposal facilities.

COMMENTARY. Discussions with officials in the Department of Housing and Urban Development revealed that federally supported projects involving public water supply systems frequently required local bond issues with maturity dates in excess of thirty years. The fact that no such projects had been approved in Iowa since the 1956 water statute suggested that a short permit term with respect to municipalities might have an adverse effect on applications for federal assistance.<sup>128</sup> Therefore, this subsection was inserted to allow the state board to waive the normal twenty-year permit term when a longer period is required for the retirement of bond issues in connection with public water supply projects.

#### **§2.07** Modification and Renewal of Permit Terms

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

(2) If the proposed modification involves an increase in water use of 150,000 gallons per month or more, the application shall be treated under the provisions of section 2.04 in the same manner as the initial permit application. Otherwise, the governing board may, at its discretion, approve the proposed modification without a hearing provided that the permittee establish that (a) a change in conditions has resulted in the water allowed under the permit becoming inadequate for the permittee's need, or (b) the proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

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

No formal procedure is established for a modification which involves only the use of a smaller amount of water. However, the

128. Interview with officials of the Department of Housing and Urban Development, August 1969.

governing board might provide by regulation that the user notify the governing board of such a modification.

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

COMMENTARY. A renewal is treated in the same manner as an original application. As a practical matter, the existing user would normally encounter little difficulty in obtaining a renewal. The renewal applicant would have a strong equitable position unless changed conditions have intervened. In that event, the governing board would be completely free to allocate available water in a manner that is best suited to these new conditions. If, for example, the State Water Use Plan or the State Water Quality Plan have been modified in such a way as to affect the use, a hearing would be required to establish whether the use is still compatible with the new provisions. A hearing should also be required if another application for the same water has been received. A renewal procedure is provided under the Model Water Use Act<sup>129</sup> and under the Iowa statute.<sup>130</sup>

#### **\$2.08** Revocation of Permits

After a hearing under section 1.21 of this code the governing board may revoke permits as follows:

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

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

(3) For violation of any provision of this code, the governing board may revoke the permit, in whole or in part, until the permittee complies with all provisions of the code.

(4) For nonuse of the water supply allowed by the permit for a period of two (2) years or more, the governing board may revoke the permit permanently and in whole unless the user can

129. MODEL WATER USE ACT §411 (1958). 130. IOWA CODE ANN. §455A.20 (Supp. 1971).

prove that his nonuse was due to extreme hardship caused by factors beyond his control.

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

COMMENTARY. Although an impressive array of civil and criminal sanctions are available to the governing board under \$1.25, revocation of permit rights will probably prove to be the most effective tool in enforcing the provisions of this chapter.

Under this section revocation may be total or partial, and temporary or permanent. In addition to its use as a sanction, revocation may also be employed to formalize a complete or partial abandonment of permit rights. As under western permit systems, water rights do not remain dormant but must be exercised. Of course, a permit may also be revoked with the consent of the permittee. This would happen when such a person has decided to obtain his water from another water supply.

This section is original. Subsection (4), however, is comparable to provisions in the Arizona<sup>131</sup> and Texas<sup>132</sup> statutes.

#### **§2.09** Declaration of Water Shortage

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

COMMENTARY. Both the Model Water Use Act and the Iowa Code have provisions dealing with water shortages. Under the former, there are two classes, water shortage<sup>133</sup> and water emergency.<sup>134</sup> Both of these conditions enable the agency to restrict water uses and apportion water. In effect, the permit system is suspended for the duration of the water shortage or emergency. Under the Iowa statute, if it is found necessary in an emergency to protect the public health and safety, to protect the public interest in lands or waters, or to protect persons or property, the commissioner may also suspend

131. ARIZ. REV. STAT. ANN. §45-101 (c) (Supp. 1971). 132. Ch. 58, §§5.172-.182 [1971] TEX. LAWS 133-35. 133. MODEL WATER USE ACT §501 (1958). 134. Id. at §502 (1958).

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operations under the permit.<sup>135</sup> As this power involves only temporary suspension of operations, no provision is made for an immediate hearing.<sup>136</sup> A critical look at the provisions of both statutes reveals that this approach is essentially crisis-reactive rather than intended to prevent a crisis condition.

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

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

COMMENTARY. This subsection delineates those conditions under which a condition of shortage may be declared. It should be noted that, unlike the permittee in a prior appropriation system, the holder of a permit under the Model Water Code is assured of the full amount of water allowed under the terms of his permit. A declaration of water shortage may be made whenever even one permit holder is unable to obtain water. Since the declaration is made by regulation, the notice and hearing provision of §1.18 shall be applicable.

(3) In accordance with the plan adopted under subsection (1) above, the governing board may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

COMMENTARY. No express limitations are placed on the governing

135. IOWA CODE ANN. §455A.28 (3) (Supp. 1971). 136. Hines, *supra* note 30, at 516.

board by this subsection except that it proceed on the basis of the classification established under subsection (1) above. Considerable discretion may be vested in the governing board since the plan of action is known in advance and its provisions would have been subject to administrative review by the state board under §1.22.

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

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

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

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

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

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

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#### **REGULATION OF CONSUMPTIVE USES**

(7) If an emergency condition exists due to a water shortage within any area of the district, and if the executive director, with the concurrence of the governing board, finds that the exercise of the powers under section 2.09 (1) are not sufficient to protect the public health, safety, or welfare, or the health of animals, fish, or aquatic life, or a public water supply, or recreational, commercial, industrial, agricultural, or other reasonable uses, the executive director may issue orders reciting the existence of such emergency and requiring that such action, including but not limited to apportioning, rotating, limiting, or prohibiting the use of the water resources of the district, be taken as the executive director deems necessary to meet the emergency.

COMMENTARY. The water emergency provisions of this subsection can be activated by the executive director, with the concurrence of the governing board, only when the water shortage plan and the powers granted in subsections (1)-(6) of this section are inadequate to protect the public health, safety, and welfare or other specified interests.

(8) An affected party to whom an emergency order is directed under section 2.09 (7) shall comply immediately but may challenge such an order in the manner set forth in section 1.20 of this code. The governing board shall give such proceedings precedence over all other pending cases.

COMMENTARY. Subsection (8) complements subsection (7)—the emergency order provision. This subsection directs that the emergency order not be stayed pending appeal, but that the normal appeal times are suspended and the alleged violator may have an appeal to the board as soon as possible. This subsection is original.

#### Chapter 3

### Construction, Operation, and Regulation of Water Wells

It is estimated that between 95 and 97 per cent of the fresh water available in the United States is made up of ground water.<sup>1</sup> Almost every part of the United States has underlying geological formations which constitute vast natural reservoirs of fresh water accumulated over the centuries.<sup>2</sup> It has been estimated that through 1955 only .2 of 1 per cent of the ground water supply has been used. In contrast, the nation has depleted its petroleum resources by 66 per cent, iron ore by 57 per cent, and saw timber by 43 per cent. At the present rate of depletion, the ground water resource would last for another 7,800 years.<sup>3</sup> As of 1963, only four states, Arizona, Arkansas, Mississippi and Texas, were obtaining more than one-half of their water supply from ground water sources.<sup>4</sup> In spite of its availability, ground water today accounts for no more than 17 per cent of the total fresh water used in the United States.<sup>5</sup>

But ground water use is increasing. One reason is the low cost of obtaining it with modern pumping equipment. The average cost of ground water at the tap is considerably less than other supply alternatives. The average cost of ground water varies from two to five cents per thousand gallons; in comparison, the average cost of treated surface water at the point of use is thirteen cents per thousand gallons, and the lowest foreseeable price for desalted sea water is thirty cents per thousand gallons.<sup>6</sup> Moreover, with reservoir sites becoming more scarce and treatment costs increasing, the cost of surface water will continue to rise. Consequently, the use of ground water as a source

1. PUBLIC EDUCATION COMMITTEE OF THE NATIONAL WATER WELL ASSOCIA-TION, GROUND WATER: AMERICA'S PRICELESS RESOURCE 2.

2. Geraghty, 7,800 Years of Water Supply Underground, 20 WATER WELL JOURNAL no. 3, 8 (1966).

3. Id. at 4.

4. D. Miller, J. Geraghty, and R. Collins, WATER ATLAS OF THE UNITED STATES, plate 23 (1963).

5. Humes, Let's Look at the Water Business, 23 WATER WELL JOURNAL no. 5, 33 (1969).

6. Humes, Ground Water, AIR CONDITIONING, HEATING AND VENTILATION 40 (August 1967).

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of conventional water supply will continue to increase at a rapid rate.<sup>7</sup>

In most areas the ground water resources are virtually untouched. Consequently, most states have few laws, if any, to control, protect, conserve, or utilize this resource. This chapter provides the means of protecting the ground water supply from contamination and waste. Ground water is quite different from surface water. Surface water can be cleansed in relatively short periods of time, provided the will and the financial means to do so are available. This is not true of ground water. Ground water is cleansed as it moves through the earth. Since ground water usually moves at a very slow rate, rarely exceeding one or two feet per day, once polluted or contaminated it may remain in that state for years.

In those jurisdictions in which measures have been taken to protect and preserve the ground water supply, the most common approach has been to curb the demand by regulation. This is basically a negative approach. Regulations of this nature are incorporated in the Model Water Code through the use of permits. In addition to this negative approach of restricting withdrawals, the code incorporates a positive approach by providing the means to augment the quantity of ground water available by artificially recharging the supply.

As water passes through the hydrologic cycle, a portion of the water that falls upon the earth finds its way into the ground water supply. The rainfall that finds its way into the ground and is not pulled back to the surface by a capillary force or absorbed by plant roots will eventually infiltrate the soil deeply enough to reach the zone of saturation.<sup>8</sup> The water that reaches the zone of saturation is commonly referred to as recharge. In recent years a variety of methods has been developed to assist nature in transporting water to the zone of saturation through artificial recharge.

The three most common classes of artificial recharge are incidental recharge, induced recharge, and applied recharge. As the name implies, incidental recharge is the recharge of ground water which is incidental to some other motivation. For instance, on Long Island, New York, artificial recharge is used to dispose of storm water runoff, but as the water is disposed of underground, this water is added to the ground water supply. Induced recharge results when the withdrawal works are so designed and located as to increase the natural rate of recharge

8. Briggs, *Terminology*, Air Conditioning, Heating and Ventilation 41 (August 1967).

<sup>7.</sup> McGuinness, New Thrusts in Ground Water, 23 WATER WELL JOURNAL no. 2, 22, 23 (1969).

from the surface. Applied recharge, which is the most widely used method, involves various methods of spreading surface water on the ground as well as the use of diffusion or recharge wells.<sup>9</sup>

As of 1963, twenty-six states were utilizing some form of artificial recharge. While the most common purpose of artificial recharge projects is to supplement the quantity of ground water available, they also are used to reduce, prevent, or correct salt water intrusion, conserve and dispose of runoff and flood water, reduce or eliminate the decline in the water level of ground water reservoirs, and store water to reduce costs of pumping and piping.<sup>10</sup> In addition, storing water in the ground offers several distinct advantages over surface reservoirs. There are no construction and little maintenance costs; there is no problem of silting; water yield is relatively stable in quality and temperature; valuable surface areas are not pre-empted; there is no flooding of some areas to keep others dry; there is no water loss because of evaporation; and the storage does not alternately expose mud flats and drown forests when storage levels fluctuate.<sup>11</sup> However, there are certain disadvantages to underground reservoirs compared to surface reservoirs: response time to management is slow; water generally must be pumped out; and, being invisible and not directly measurable, these facilities are frequently unknown to water planners.<sup>12</sup>

With the demands for land for building sites, paved areas, and drainage facilities rapidly increasing, areas that had once allowed water to percolate into the ground and eventually find its way into the ground water system are now impermeable. Present-day concern is with drainage and getting rid of water, with little realization that this is affecting future ground water supply. Trends of this nature only increase the need and importance of artificial recharge if the ground water supply is to play its proper role as a resource of the future.

Several factors heavily influenced the drafters of this chapter. First, increasing water demands and a diminishing surface water supply indicate the need for additional sources of water. Ground water offers the most practical solution to this problem. Its availability, both in quality and quantity, plus its low treatment cost are strong indicators that ground water is a key to future water supply problems.

9. Muegge, Artificial Recharging of Water-Bearing Formations, 50 JOURNAL AMERICAN WATER WORKS ASS'N 168, 169-70 (1958).

10. See Task Group Report, Purposes of Artificial Recharge, 52 JOURNAL AMERICAN WATER WORKS ASS'N 1315 (1960).

11. Nace, Ground Water: Perspectives and Prospects, 23 WATER WELL JOUR-NAL no. 2, 28 (1969).

12. Id. at 29.

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Second, since ground water use has not yet become widespread, now is the time for states to promulgate the necessary laws. Prompt action will avoid some of the problems being faced today with respect to surface water.

Third, in managing any resource, more is required than just a negative approach of restricting use in order to regulate properly. Chapter 3 provides for positive means to increase the amount of ground water available for use.

In summary, this chapter is designed to provide a basic legal structure through which ground water resources can be most efficiently and beneficially controlled, conserved, protected, and utilized.

#### **§3.01** Definitions

When appearing in this chapter or in any rule, order, or regulation adopted pursuant thereto, the following words shall mean:

(1) Well—Any artificial excavation constructed by any method which is capable of extracting water from, or injecting water into, the ground. It shall include, but not be limited to, watertable wells, artesian wells, core-boring holes, recharge wells, drainage wells, geothermal wells, waste disposal wells, and all excavations made for the purpose of obtaining or prospecting for oil, natural gas, minerals, or quarrying, or for inserting media to repressure oil- or natural gas—bearing formations, or storing petroleum, natural gas, or other products.

COMMENTARY. The definition of "well" is the most important definition in this chapter. It is very comprehensive and includes virtually every type of artificial excavation capable of withdrawing or injecting water into the ground. For example, any mining operation that breaches a water-bearing formation will result in a well as defined in \$3.01 (1). Likewise, any core-boring hole that penetrates one or more water-bearing formations will also fall within this definition. While these operations are not usually considered to involve well construction, it is important that they be included within the definition of "well" because they can have as much, if not more, effect on the ground water than a water well. If, in a rock-mining operation, the excavation penetrates a water-bearing formation, it is as capable of withdrawing water as a well. If the water-bearing formation happens to be an artesian aquifer and the potentiometric pressure is sufficient. a free-flowing spring will be created. In the case of the core-boring hole, although water may or may not flow from it, the hole may serve

as a conduit for water to move from one formation to another. If the core-boring hole penetrates a confining bed between a formation containing potable water and one containing unpotable water, this process may contaminate the potable water supply. While these are only some of the means by which an artificial excavation may affect ground water, they show why it is necessary to regulate these artificial excavations if the ground water is to be properly controlled, conserved, protected, developed, and utilized.

It should be noted also that the "well" definition includes gas and oil wells. Because these wells usually penetrate several water-bearing formations, they may have a substantial effect on the ground water of an area. Those states which have considered the effects of these wells on their ground water supplies in promulgating their gas and oil well regulations may find it desirable to exempt gas and oil wells from the "well" definition.

This subsection is original, but incorporates ideas drawn from the Model Water Well and Pump Installation Act.<sup>13</sup>

(2) Well driller—Any person, firm, or corporation which constructs, alters, or repairs wells.

COMMENTARY. The definition of well driller was taken from Orders of the Southwest Florida Water Management District (Regulatory).<sup>14</sup>

(3) Well construction—The producing of any well, including the construction, alteration, or repair thereof, but excluding the installation of pumps and pumping equipment.

COMMENTARY. This definition includes the construction, alteration, and repair of a well. Consequently, an approved permit for well construction, as provided in §3.10, is required prior to the initiation of any work for the construction of a well and, in addition, prior to any alterations or repairs to a well. Although the installation of pumps and pumping equipment is excluded from this definition, this operation is included within the "installation of pumps and pumping equipment" definition of §3.01 (6), and will be regulated by a permit for

13. See Model Water Well & PUMP INSTALLATION Act  $\S3(i)$  (1965); see also California Development of Water Resources, Bulletin no. 74 at 14 (1968).

14. Fla. Admin. Code, ch. 357R-1, \$1.01 (2) (b) (1969), hereinafter cited as SWFWMD(R).

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installation of pumps and pumping equipment, as provided in §3.11. Subsection (3) is original.<sup>15</sup>

(4) Pumps and pumping equipment—Any equipment or materials utilized or intended for use in withdrawing or obtaining ground water, including, without limitation, seals, tanks, fittings, and controls.

COMMENTARY. Subsection (4) was taken from the Model Water Well and Pump Installation Act.<sup>16</sup>

(5) Pump installation contractor—Any person, firm, or corporation which is in the business of installing or repairing pumps and pumping equipment.

COMMENTARY. This definition was taken from the Model Water Well and Pump Installation Act.<sup>17</sup>

(6) Installation of pumps and pumping equipment—The procedure employed in the placement and preparation for operation of pumps and pumping equipment, including all construction involved in making entrance to the well, and establishing seals and repairs, as defined in section 3.01 (7), to existing installations.

COMMENTARY. Subsection (6) is patterned after the Model Water Well and Pump Installation Act.<sup>18</sup>

(7) Repairs—Any change, replacement, or other alteration of any well, pump, or pumping equipment, which requires a breaking or opening of the well seal.

COMMENTARY. A Colorado statute is the source of this definition.<sup>19</sup>

(8) Well seal—An approved arrangement or device used to cap a well or to establish and maintain a junction between the

15. See also SWFWMD(R) 1.01 (2) (c) (1969); Model Water Well & Pump Installation Act 3(b) (1965).

16. MODEL WATER WELL & PUMP INSTALLATION ACT §3 (f) (1965).

17. Id. at §3 (g).

18. Id. at §3 (d).

19. COLORADO CODE FOR WATER WELL CONSTRUCTION AND PUMP INSTALLA-TION (1968).

casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the other terminal.

COMMENTARY. Subsection (8) was taken from Model Regulations for Water Well Construction and Pump Installation Act.<sup>20</sup>

(9) Abandoned well—Any well whose use has been permanently discontinued. Any well shall be deemed abandoned which is in such a state of disrepair that continued use for the purpose of obtaining ground water is impractical.

COMMENTARY. This definition was taken from Model Regulations for Water Well Construction and Pump Installation Act.<sup>21</sup>

(10) Artificial recharge—The intentional introduction of water into any underground formation.

COMMENTARY. Subsection (10) was taken from a Colorado statute.<sup>22</sup>

**§3.02** Powers and Duties of the Governing Board

In addition to other powers and duties delegated to it by section 1.17 of this code, and other acts authorized by law, the governing board shall:

(1) require registration of all existing wells, as provided in section 3.03;

(2) require registration of all well drillers and pump installation contractors, as provided in section 3.04;

(3) require permits for well construction, as provided in section 3.10;

(4) require permits for installation of pumps and pumping equipment as provided in section 3.11;

(5) require well completion reports, as provided in section 3.13;

(6) develop well construction standards, as provided in section 3.14;

20. Model Regulations for Water Well Construction and Pump Installation Act 2.21 (1965).

21. Id. at §2.1.

22. Colorado Code for Water Well Construction and Pump Installation 2(19) (1968).

(7) develop pump and pumping equipment installation standards, as provided in section 3.14; and

(8) adopt, modify, promulgate, and enforce all rules, regulations, and orders necessary to carry out the provisions of this code.

COMMENTARY. Section 3.02 outlines the duties and powers that are delegated to the governing board of a water management district. The provisions of this section are original.

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#### **§3.03 Registration of All Existing Wells**

(1) Any person owning or operating any well shall register said well with the governing board of the water management district within which the well is located. Registration shall be on the forms provided by the governing board.

(2) The registration report shall include:

(a) the water use permit number,

(b) the legal description of the land upon which the well is located,

(c) the location of the well,

(d) the purpose of the well,

(e) the diameter of the well,

(f) the name of the well driller who constructed the well,

(g) the maximum capacity of the well,

(h) the name of the pump installation contractor who installed the pump and pumping equipment, and

(i) such other data as the governing board may require.

(3) The governing board shall maintain a permanent record in which shall be entered the information gathered from the persons owning or operating all wells reported.

(4) In addition to the penalties prescribed in section 1.25, a governing board may deny the issuance of a water use permit, as provided for in chapter 2, until such time as the applicant registers all wells which he owns or operates.

COMMENTARY. It should be noted that while not all existing wells are required to obtain a water use permit, they are all required to be registered under this section. Whenever an attempt is made to regulate a resource, it is important that the amount of present use be known. This section will enable the governing board to determine the amount and the point of withdrawal of all ground water within the district.

This information will be kept current through the well completion report, as provided in §3.13.

The information obtained through the inventory will serve as the basis for evaluating applications for water use permits and well construction permits. This represents one of the initial steps that the governing board must take in order to obtain the basic information to develop an optimum coordinated program of ground water management. This section is modeled after an Arizona statute.<sup>23</sup>

#### \$3.04 Registration of Well Drillers and Pump Installation Contractors

(1) Any person who wishes to engage in business as a well driller or a pump installation contractor shall be registered with the governing board of the water management district in which he intends to engage in such business and shall be the holder of a valid, current registration certificate.

(2) Qualifications for Well Driller's Certificate and Pump Installation Contractor's Certificate:

(a) To be qualified to receive a registration certificate, the applicant must:

(1) be at least 21 years of age;

(2) be of good moral character;

(3) have not less than two (2) years' experience in the work for which he is applying for registration;

(4) have knowledge of the rules, regulations, and orders adopted under this code; and

(5) have passed a satisfactory examination conducted by the governing board.

(3) Certificates of Registration:

(a) shall not be transferable or assignable;

(b) shall be valid only within the water management district from which they are obtained; and

(c) shall be assigned an identification number.

COMMENTARY. As the demands for ground water increase, it is becoming clear to government leaders and the responsible elements of the well construction industry that some form of regulation is needed. At present, twenty-five states impose some form of licensing require-

23. ARIZ. REV. STAT. ANN. §45-304 (1956); see also ORE. REV. STAT. §§537-.610, .665 (1969).

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ments upon all well drillers and pump installation contractors.

While registration requirements do not exist nationwide, the well drilling industry has generally endorsed such legislation. In fact, the National Water Well Association, a nationwide association of persons involved in ground water development, provides legislative assistance to any state that requests help in developing legislation pertaining to any phase of the well drilling industry. In addition, the NWWA has developed a model code which suggests legislation for well construction and pump installation.

This section provides for the registration of well drillers and pump installation contractors. Because the well drillers and pump installers are the ones who work with the ground water resource, this section provides the governing board with the means to supervise adequately the activities of these people as well as to protect the resource. In addition, the registration requirements protect the well drilling industry from dishonest or incompetent contractors.

The qualifications set forth in subsection (2) are those generally found in the states with the more comprehensive codes.<sup>24</sup> Because this is a model code, a "grandfather" clause was not provided, but most states that have enacted a registration act have included one.

The type of examination that the governing board will administer is left to the board's discretion. A majority of the states require that an examination be given, but the type of examination varies, and may be written, oral, or a field examination or demonstration of the applicant's ability to operate equipment for the development of wells.

This section was taken from the SWFWMD (Regulations)<sup>25</sup> and Model Water Well and Pump Installation Act.<sup>26</sup>

#### **§3.05** Issuance of Certificates and Bonds

When an application for a certificate of registration has been approved by the governing board, the applicant shall be notified in writing, after which he shall have thirty (30) days in which to file with the governing board a performance and compliance bond in the amount of \$5,000.00 per certificate with a corporate surety authorized to do business in the state, conditioned that such applicant will comply with the laws of the state and the

26. MODEL WATER WELL & PUMP INSTALLATION ACT §9 (a) (1965); see also Rules of the Texas Water Development Board §605.3 (1968); Md. WATER RESOURCES REGULATION §2.35 (1968).

<sup>24.</sup> E.g., Texas, Wisconsin, Maryland, and Michigan.

<sup>25.</sup> SWFWMD(R) §1.02 (1969).

rules, orders, and regulations of the governing board while engaging in the business for which he is registered.

COMMENTARY. Although the governing board has the power to refuse, suspend, or revoke a well driller's or a pump installation contractor's certificate for the reasons set out in §3.08, there may be times where such action against the driller or contractor will not cure the problem. For example, a registered well driller might apply for and receive a well construction permit and after drilling several hundred feet of hole suddenly abandon his job. The board could suspend or revoke the driller's certificate under §3.08, but the real problem is what would happen to the abandoned hole? In addition to providing surface pollutants with direct access to the ground water, the abandoned well would also serve as a vertical conduit for the mixing of varying qualities of ground water, which, in effect, could destroy a potable ground water supply.

The performance and compliance bond is to be used by the governing board only when the well driller or pump installation contractor fails to comply with the board's rules, regulations, and orders, and is not available to private individuals to enforce contracts with well drillers or pump installation contractors.

This provision was taken from a Colorado statute.<sup>27</sup>

#### \$3.06 Supervision of Well Construction and the Installation of Pumps and Pumping Equipment

(1) All well construction operations shall be performed under the direct and personal supervision of the registered well driller who received the permit for well construction, as provided in section 3.10.

(2) All operations connected with the installation of pumps and pumping equipment shall be performed under the direct and personal supervision of the registered pump installation contractor who received the permit for installation of pump and pumping equipment, as provided in section 3.11.

COMMENTARY. This section makes it clear that, as each well is being drilled, a registered well driller will be present to supervise the construction personally, and as each pump is being installed a registered

27. COLORADO RULES & REGULATIONS FOR WATER WELL DRILLING & PUMP INSTALLATION CONTRACTORS 3 (3) (a) (1968); see also SWFWMD(R) 1.02 (5) (1969).

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pump installation contractor will likewise be present. This aids the governing board in enforcing the provisions of this chapter because one person can be held responsible for the work being performed. Since one of the purposes of this chapter, in requiring the registration of all well drillers and pump installation contractors, was to insure that only competent well drillers and pump installation contractors would be working with the ground water, it would be undesirable to allow unregistered persons, who are perhaps incompetent, to conduct and supervise the well drilling and pump installation operations.

Section 3.06 was taken from the SWFWMD (Regulations).<sup>28</sup>

### **§3.07** Marking of Vehicles and Equipment

It is the duty of all registered well drillers and registered pump installation contractors to see that all vehicles, trailers, and rigs used by them or their employees in their business are marked with legible identification numbers at all times. The identification number to be used shall be the registration number which appears on the registration certificate. The governing board shall set out in detail in its rules, regulations, and orders the specific method and manner for marking vehicles and equipment.

COMMENTARY. Requiring the marking of all vehicles, trailers, and rigs used by registered well drillers and registered pump installation contractors in their work will aid the governing board in enforcing the provisions of this code and the rules, regulations, and orders adopted pursuant thereto. By checking the vehicles at any job site, the governing board should be able to determine immediately if the well driller is registered and if the well driller has a permit for well construction.

This provision was modeled after a Texas statute.<sup>29</sup>

# \$3.08 Grounds for Refusal, Suspension, or Revocation of Certificates

The governing board may refuse to issue or renew, or may suspend or revoke, a certificate of registration on one or more of the following grounds:

28. SWFWMD(R) §1.02 (13) (1969).

29. TEXAS WATER WELL DRILLERS ACT OF 1965, ART. 7621e, §14 (Supp. 1971).

(1) material misstatement in the application for certificate of registration;

(2) failure to have or retain the qualifications required herein;

(3) intentional misrepresentation of a material fact by an applicant in connection with any information or evidence furnished the governing board;

(4) willfully aiding or abetting another in violation of any provision of this code or any regulation or order issued pursuant thereto;

(5) gross incompetency in the performance of his work;

(6) failure to apply for registration prior to beginning well drilling operations or pump installation operations within the water management district; or

(7) willful disregard or violation of any provision of this code, or rule, order, or regulation issued pursuant thereto.

COMMENTARY. In this section are set forth the grounds upon which a certificate of registration may be refused, suspended, or revoked by the governing board. Prior to the refusal, suspension, or revocation of any certificate, the hearing provisions of §3.09 must be followed.

Section 3.08 was taken from a number of sources.<sup>30</sup>

\$3.09 Proceedings to Refuse, Suspend, or Revoke Certificates

(1) Proceedings to refuse, suspend, or revoke a certificate of registration may be instituted by the water management district or by any other party by filing a written complaint with the governing board on forms provided by the board.

(2) The governing board, upon investigation and after a hearing, as provided in section 1.21 of this code, may refuse, suspend, or revoke the certificate of registration.

COMMENTARY. The procedure which the governing board must follow in order to refuse, suspend, or revoke a certificate of registration is set forth in this section. The grounds for refusing, suspending, or revoking a certificate are set out in §3.08. If a governing board refuses, suspends, or revokes a certificate, the aggrieved party may appeal the governing board's action by petitioning the state board under the procedure set forth in §1.22. If the state board affirms the action taken

30. SWFWMD(R) 1.02 (14) (1969); Tennessee Drillers Act, Tenn. Code Ann. 70.2305 (a) (Supp. 1970); Model Legislation for Water Well Construction and Pump Installation 9 (g) (1966).

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by the governing board, the aggrieved party may then appeal to the appropriate court for relief, as provided in §1.11.

This provision is original.<sup>31</sup>

# **§3.10** Permit for Well Construction

(1) Prior to the beginning of construction of all wells, permission must be obtained from the governing board by making written application for the construction on forms to be provided by the board. The application shall be made by the well driller who will perform the work and shall contain the following:

(a) the name and registration number of the applicant,

(b) the name and address of the person who will control and operate the well,

(c) the number of the water use permit,

(d) the location of the well,

(e) the proposed depth and method of construction,

(f) the size and expected capacity of the well,

(g) the name and registration number of the pump installation contractor, and

(h) such other information as the governing board may require.

(2) The governing board shall issue a permit whenever it finds that an application is in proper form and contains the required information, provided that, on the basis of the information therein contained, the proposed construction will not be contrary to applicable law, rules, orders, or regulations. Receipt of the permit by the well driller will constitute permission to begin well construction. The permit will also direct the well driller to file a well completion report, as provided in section 3.13.

(3) The governing board shall issue a Notice of Rejection, as provided in section 3.12, whenever it finds that an application fails to meet the requirements of this code or any rule, order, or regulation adopted pursuant hereto.

(4) The permit shall be prominently displayed at the site of the well prior to beginning any work thereon and shall remain so displayed until construction is completed.

(5) The holder of a permit under this section who desires to change the location of his well before construction is completed shall apply to the board for an amendment of his permit. The application shall contain the same information as required for

31. See also SWFWMD(R) §1.02 (15) (1969).

an original application, plus information as to the manner of sealing or plugging the incomplete and abandoned well. If the board determines that the proposed well at the proposed new location will both serve the same use as the original well and draw upon the same supply of water and that the incomplete and abandoned well will be sealed or plugged so as to prevent waste of water and damage to the water supply so as not to be dangerous to public safety, it shall approve the application and issue an amended permit therefor.

COMMENTARY. Under this section, prior permission is required from the governing board before a well driller begins work to construct a well.<sup>32</sup> Therefore, a permit for well construction is required for both construction of new wells and alterations or repairs on existing wells, since definition of construction contained in §3.01 (3) includes "alteration or repair." Although a water use permit under chapter 2 is not required for wells used for domestic purposes by individual users, a permit for well construction under this section must be obtained. Replacing the casing of a well constitutes an alteration to the well for which a well construction permit must be obtained.

The information obtained through the construction permits will be useful in evaluating applications for water use permits. In addition, the permit will insure that the proposed construction will meet the construction standards adopted by the governing board, as provided in §3.14.

It should also be pointed out that this section does not contain certain provisions that are common in most state codes. First, there is no provision to minimize the possibility of delay in the administration of the permit. Some states specify that if a specific number of days elapse after mailing the application, receipt of a permit may be implied. The drafters felt that this matter could be handled more appropriately by rules, regulations, and orders. Second, this section makes no provision for any type of emergency permit for well construction. It is likewise felt that this matter may be more appropriately handled by rules, regulations, and orders promulgated by the governing board.

Subsection (5) allows a permit holder to start over again in the event that a partially completed well is ruined by equipment failure

32. See also ARIZ. REV. STAT. §45-315 (1956); N.M. STAT. ANN. §§75-11-7, -23, -24 (1968), as amended (Supp. 1971); WASH. REV. CODE ANN. §90.44.100 (1962).

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or otherwise shows evidence of not being capable of satisfactory completion. The abandoned well must be sealed or plugged. The amended permit should be granted with a minimum of paper work and delay.

Section 3.10 should be read in conjunction with the provisions related to permits for installation of pump and pumping equipment,<sup>33</sup> notices of rejection,<sup>34</sup> well completion reports,<sup>35</sup> and well construction and pump installation standards.<sup>36</sup> This section is original.<sup>37</sup>

\$3.11 Permit for Installation of Pumps and Pumping Equipment

(1) Prior to the beginning of the installation of pumps and pumping equipment, permission must be obtained from the governing board by making written application for the construction on forms to be provided by the board. The application shall be made by the pump installation contractor who will perform the work and shall contain the following:

(a) the name and registration number of the applicant,

(b) the number of the water use permit,

(c) the number of the well construction permit,

(d) description of the pumps and pumping equipment to be installed, and

(e) such other information as the governing board may require.

(2) The governing board shall issue a permit whenever it finds that an application is in proper form and contains required information, provided that on the basis of the information therein contained, the proposed installation will not be contrary to applicable law, rules, orders, or regulations. Receipt of the permit by the pump installation contractor will constitute permission to install pumps and pumping equipment. The permit will also direct the pump installation contractor to file a well completion report, as provided in section 3.13.

(3) The governing board shall issue a Notice of Rejection, as provided in section 3.12, whenever it finds that an applica-

37. See also SWFWMD(R) 1.03 (3) (1969); Model Regulations for Water Well Construction & Pump Installation Act 1.03, .4, .5 (1966); Ariz. Rev. Stat. Ann. 1.03 (Supp. 1970); Colo. Rev. Stat. Ann. 1.03, .4, .5 (1966); Ore. Rev. Stat. 1.03, .5, .630, .762 (1969); N.M. Stat. Ann. 1.03, .5, .630, .762 (1969); N.M. Stat. Ann. 1.03, .5, .630, .762 (1969); N.M. Stat. Ann. 1.03, .5, .630, .630, .762 (1969); N.M. Stat. Ann. 1.03, .24 (1968), as amended (Supp. 1971).

<sup>33.</sup> MODEL WATER CODE §3.11.

<sup>34.</sup> Id. at §3.12.

<sup>35.</sup> Id. at §3.13.

<sup>36.</sup> Id. at §3.14.

tion fails to meet the requirements of this code or any rule, order, or regulation adopted pursuant hereto.

(4) The permit shall be prominently displayed at the site of the well prior to beginning any work thereon and shall remain so displayed until the installation is completed.

COMMENTARY. This section is essentially the same as the preceding section, §3.10, except that it relates to the installation of pumps and pumping equipment rather than well construction. The commentary for §3.10 also applies here. This section is original.<sup>38</sup>

\$3.12 Notice of Rejection, Suspension, or Revocation of Permit

(1) The governing board shall issue a Notice of Rejection whenever it determines that an application for a permit under sections 3.10 or 3.11 fails to meet the requirements of this code or any rule, order, or regulation adopted pursuant hereto.

(2) The Notice of Rejection shall:

(a) state the ground for rejection, and may state any remedial action which may be taken to make such application acceptable for approval; and

(b) be served in writing upon the persons signing the application by registered or certified mail.

(3) Any applicant receiving a Notice of Rejection may obtain a hearing before the governing board of the water management district by filing within thirty (30) days of the mailing of such Notice of Rejection a written petition requesting such hearing. The hearing before the governing board shall be conducted pursuant to section 1.21 of this code.

(4) The governing board may, upon investigation, suspend a permit and, after notice and hearing, may extend such suspension or may revoke the permit. Such suspension or revocation may be made on any one or more of the following grounds:

(a) material misstatement or misrepresentation in the application for a permit;

(b) failure to comply with the provisions set forth in the permit;

(c) willful disregard or violation of any provision of this code, or any rule, order, or regulation promulgated pursuant hereto; or

38. See Model Regulations for Water Well Construction and Pump Installation Act §§3.2, .3, .4, .8 (1966).

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# (d) material change of circumstances or conditions existing at the time such permit was issued.

COMMENTARY. In this section is set forth the procedure which a governing board must follow to suspend or revoke a permit or reject an application for a permit under §3.10 and §3.11. It also prescribes the procedure an applicant must follow in order to obtain a hearing before the governing board. Following a hearing before the governing board, an aggrieved party may petition the state board pursuant to §1.22. If the state board fails to take the action requested by the aggrieved party, he may seek judicial review as provided in §1.11.

This section was taken from SWFWMD (Regulations).<sup>39</sup>

## **§3.13 Well Completion Report**

Within thirty (30) days after the completion of the well, the well driller and pump installation contractor shall file, upon forms provided by the governing board, a written report with the board. The report shall contain the following information:

(1) a log containing the depth, thickness, and character of the different strata penetrated and the location of water-bearing strata;

(2) an accurate record of the work, including:

(a) statement of the date of beginning of work,

(b) the date of completion,

(c) length, size, and weight of the casing and how the same is placed,

(d) the size of the drilled hole,

(e) where the well is sealed off and the type of seal,

(f) number of cubic feet per second (cfs) or gallons per minute (gpm) of flow from the well when completed,

(g) pressure in pounds per square inch (psi) if it is a flowing well, and, if nonflowing, the static water level and the water temperature, and

(h) a chemical analysis of a water sample drawn from the well; and

(3) such additional information as may be required by the governing board to establish compliance with the terms of the permit, the provisions of this code, and all rules, regulations, and orders promulgated pursuant to this code.

39. SWFWMD(R) §1.03 (11) (1969).

#### COMMENTARY

COMMENTARY. The completion record is a multipurpose report and is an essential tool of this code. By using the permits for well construction as provided in \$3.10, the permits for the installation of pumps and pumping equipment as provided in \$3.11, and the well completion reports, an accurate and up-to-date inventory of all wells can be maintained by the governing board. As ground water use increases, this inventory will be increasingly important in evaluation of applications for water use permits as provided in \$2.01, well construction permits as provided in \$3.10, and pump installation permits as provided in \$3.11.

From these reports the governing board will be able to map the drilling sites of all new wells, and to know the depths, diameters, pumpages, and kinds of water obtained from these wells. In addition, valuable information on the geology and hydrology of the aquifers and aquicludes will be obtained. Such information will be valuable to the board, and will also be available to the drilling community.

The more information that a governing board obtains from these reports, the better an understanding it will have to aid it in developing and managing the ground water. It is only by careful management of the aquifers and the water they supply to wells, springs, and streams that a governing board can assure to itself, and the residents of the district, continued, unfailing supplies of clean, clear, and uncontaminated or unpolluted water.

This subsection was taken from several sources.<sup>40</sup>

# \$3.14 Well Construction Standards and Pump Installation Standards

(1) The governing board shall adopt minimum standards for the construction of wells and the installation of pumps and pumping equipment.

(2) The minimum standards for the construction of wells shall include, but not be limited to, the following provisions:

(a) all wells shall be equipped with a device for measuring the amount of ground water being withdrawn from the well, such device to be approved by the governing board;

(b) all wells shall be capped or equipped with a control valve, such cap and control valve to be approved by the governing board;

(c) approved procedures for the plugging of wells;

40. ARIZ. REV. STAT. §45-317 (1956); MISS. CODE ANN. §5956-37 (Supp. 1971); ORE. REV. STAT. §§537.630, .765 (1969).

(d) approved procedures for the grouting and sealing of wells; and

(e) criteria for the location of wells:

(1) with respect to possible pollution sources, and

(2) with respect to maintaining the well in a sanitary condition.

(3) Should any well not be equipped with a cap or valve as required in subsection (2) above, or should any well be allowed to flow so as to waste ground water in violation of this section, or should any well be contaminated because of deficiencies as set forth in subsection (2) above, in violation of this section, then:

(a) The governing board shall, upon being informed of this fact, give notice to the owner of the land upon which the well is situated to correct the defect or waste as the case may be. If the defect or waste is not corrected within ten (10) days after notice is given, the governing board shall have the necessary valve, cap, plug, or other device installed upon the well.

(b) The cost of installation of the valve, cap, plug, or other device and the control of the flow from the well shall, if made or done by the governing board, be at the expense of the owner and shall be a lien against the tract of land upon which the well is situated until the expense is paid. Said lien may be foreclosed in a civil action in any court of competent jurisdiction, and the court shall allow the plaintiff a reasonable attorney's fee to be set as a part of the cost.

(4) The minimum standards for the installation of pumps and pumping equipment shall include, but not be limited to, the following provisions:

(a) The pumps and pumping equipment shall be installed so that the pumps and their surroundings can be kept in a sanitary condition.

(b) The pumps and pumping equipment shall be of a capacity consistent with the water need and the drawdown characteristics of the well.

(c) The pumps and pumping equipment shall be durable and reliable in character.

(d) The pumps and pumping equipment shall be constructed of material which will not create a toxic condition in the water.

(e) The pumps and pumping equipment shall provide reasonable protection against entrance of pollutants.

COMMENTARY. The primary purpose of this section is to protect the ground water resource. The standards that are adopted pursuant to this section will have to be met as a basis for the issuance of each permit issued under §§3.10 and 3.11. The standards that the governing board sets represent the minimum acceptable standards that should be followed by the well drillers and pump installation contractors as they design and plan their work.

The requirement of a measuring device, set forth in \$3.14 (2) (a), is essential to the meaningful enforcement of the water use permits that are provided in chapter 2. Without a measuring device on the wells, it would be almost impossible to check the amount of ground water withdrawal.

Most states have a provision similar to \$3.14 (2) (b). The purpose of the provision is twofold: to prevent pollution and waste. In the case of an artesian or free-flowing well, the control valve will prevent the water from flowing to waste. In addition to preventing the depletion of the ground water, the extent of salt water intrusion will be lessened. In the case of a nonflowing well, the cap will prevent pollutants from entering the well.

By establishing procedures for the plugging of wells under subsection (3), the governing board will insure that the subsurface conditions will be returned to a nearly original hydrologic condition. The well can be required to be plugged in such a manner that it will not serve as a conduit for water to move freely from one water-bearing formation to another. The establishment of grouting and sealing procedures will also prevent the vertical movement of pollutants in the well.

This section is original.<sup>41</sup>

#### **§3.15** Well Construction Advisory Board

(1) The governing board of each water management district shall appoint a six- (6) member well construction advisory board. The advisory board members shall meet the following conditions:

(a) Three (3) of the members shall be registered well drillers.

(b) Three (3) of the members shall be registered pump installation contractors.

41. See also MINN. STAT. ANN. 105.41 (4) (Supp. 1971); MODEL REGULA-TIONS FOR WATER WELL CONSTRUCTION AND PUMP INSTALLATION ACT §9 (1966); FLA. STAT. §§373.021, .041 (1971); ARIZ. REV. STAT. ANN. §45–319 (1956).

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(c) Each member shall reside in the water management district on whose advisory board he serves.

(d) Each member shall have a minimum of five (5) years of experience in well construction or installing pumps and pumping equipment.

(e) No more than one member may be employed or own an interest in the same company, firm, or business association which is engaged in any phase of well construction or the installation of pumps and pumping equipment.

(2) The initial six (6) members shall be appointed for the following terms: two well drillers and two pump installation contractors for a term of one (1) year, and one well driller and one pump installation contractor for a term of two (2) years. Thereafter all subsequent appointments shall be for terms of two (2) years.

(3) The advisory board shall advise the governing board on the following:

(a) the registration requirements with respect to well drillers and pump installation contractors;

(b) the grounds for refusal, suspension, or revocation of certificates of registration;

(c) permits for well construction;

(d) permits for installation of pumps and pumping equipment;

(e) well completion reports;

(f) well construction standards and pump installation standards;

(g) the abandonment of wells;

(h) the marking of vehicles and equipment; and

(i) any other matter that the governing board requests.

COMMENTARY. Because a large portion of this chapter will directly . affect the well drillers and the pump installation contractors, it is important that these individuals be given the opportunity to present their views to the governing board concerning the rules, regulations, and orders adopted pursuant to this code. This section insures the well drilling industry that it will have a direct means of communication with the governing board.

This provision is also original.42

42. See Rules of the Texas Water Well Drillers Board §200.2 (1968); Mich. Admin. Code R. 325.235, R. 325.236 (1967).

**§3.16** Artificial Recharge

(1) No construction may be begun on a project involving artificial recharge as defined in section 3.01 (10) of this code without the written permission of the governing board of any water management district within which the construction will take place. Such application shall contain the detailed plans and specifications for the construction of the project. Should the application be rejected, the applicant may obtain a hearing before the governing board by filing a written petition requesting such hearing. The hearing before the governing board shall be conducted pursuant to section 1.21 of this code.

(2) The governing board of a water management district may do any act necessary to replenish the ground water of said district. For the purposes of replenishing the ground water supplies within the district, the board may, among other things:

(a) buy and sell water;

(b) exchange water;

(c) distribute water to persons in exchange for ceasing or reducing ground water extractions;

(d) spread, sink, and inject water underground;

(e) store, transport, recapture, reclaim, purify, treat, or otherwise manage and control water for the beneficial use of persons or property within the district; and

(f) build the necessary works to achieve ground water replenishment.

COMMENTARY. Section 3.16 gives the governing board control over all artificial recharge projects. It also authorizes the governing board to construct the works necessary for an artificial recharge project. Because the governing board is responsible for the efficient management of ground water, it must have control over the sources of withdrawal, as well as the sources of recharge.

These provisions were taken from Colorado<sup>43</sup> and California<sup>44</sup> statutes.

#### **§3.17** Abandonment of Wells

When a well is abandoned, the owner thereof shall fill and seal the well in a manner approved by the governing board. Prior

43. COLORADO CODE FOR WATER WELL CONSTRUCTION AND PUMP INSTALLATION 3 (7) (1968).

44. CAL. WATER CODE §§60220, 60221 (West 1971).

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to abandonment the owner shall file with the governing board a report showing the following:

(1) the name and address of the owner;

(2) the water use permit number;

(3) the name and address of the registered well driller who will be employed to perform the work required for abandonment;

(4) the reason for abandonment; and

(5) a description of the work to be performed to effect the abandonment consistent with the standards adopted pursuant to section 3.14 (2) (c) and (d).

COMMENTARY. Section 3.17 provides for the sealing and filling of abandoned wells in a manner approved by the governing board so as to prevent the well from acting as a channel for contamination or vertical movement of water.

This provision was taken from the Model Regulations for Water Well Construction and Pump Installation Act.<sup>45</sup>

### **§3.18** Drainage Wells

All drainage wells shall conform to the provisions of this chapter as well as the provisions of chapter 5.

COMMENTARY. This section states that prior to the construction of a drainage well, permits as provided in §§3.10 and 5.09 must be obtained from the governing board. Section 3.18 is original.

### **§3.19** Exemptions and Limitations

No provisions of this chapter shall apply to:

(1) any distribution of water beyond the point of discharge from the storage or pressure tank, or beyond the point of discharge from the pump if no tank is employed, or

(2) any well, pump, or other equipment used temporarily for dewatering purposes.

COMMENTARY. This provision was taken from the Model Water Well and Pump Installation Act.<sup>46</sup>

45. MODEL REGULATIONS FOR WATER WELL CONSTRUCTION AND PUMP IN-STALLATION ACT §3.7 (1966). 46 Id at \$4

46. *Id*. at §4.

# Chapter 4

# Construction, Operation, and Regulation of Surface Water Works

This chapter is concerned neither with the mechanics of use permits nor with the underlying policy thereof. Instead, it deals with the management and storage of surface water and with the works necessary to these ends. It is both an informational chapter—certain of its sections are devoted to acquiring vital facts and statistics and to keeping them current—and an operative chapter—certain of its sections are devoted to the construction and maintenance of dams and works.

Surface water is defined in the code to include both contained surface water and diffused surface water,<sup>1</sup> in contravention of the common law rules which define these as different types of water and attach different rules to them.<sup>2</sup> Diffused surface water has become a valuable resource that needs management the same as any other resource. Waterbodies are divided into streams, other watercourses, and impoundments,<sup>3</sup> thus eliminating the other categories of contained surface water variously recognized at common law and incorporating them into the three types of bodies of water defined here. The purpose of this condensation and simplification of terms is to provide for greater certainty in applying the rules of chapter 4 and to lessen the possibility that any significant amount of or type of surface water

1. MODEL WATER CODE §1.03 (10).

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2. Contained surface water, that in streams and lakes or in other enclosures with defined boundaries, has been governed by riparian use rules in the eastern states and by prior appropriation rules in the western states. Diffused surface water, that lying on the surface of the earth without definite banks or enclosures, has been regarded as undesirable. The laws governing it have been devoted to its disposal. Thus, the common enemy, civil law, and reasonable use doctrines have evolved with respect to the disposal of diffused surface water, but the rules governing its use are primitive. In almost all jurisdictions the owner of land has an absolute right to use any such waters lying on it. Taylor v. Fickas, 64 Ind. 167 (1878); 3 FARNHAM, WATERS AND WATER RIGHTS §833 (1904). Only New Hampshire and Minnesota have indicated any change from an absolute ownership rule to a reasonable use rule similar to that governing contained surface water. See Bush v. City of Rochester, 191 Minn. 591, 255 N.W. 256 (1934); Swett v. Cutts, 50 N.H. 439 (1870).

3. MODEL WATER CODE §§1.03 (11), (12), (14).

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escape regulation because of confusion or contradiction in terms. One of the principal objectives of chapter 4 is a comprehensive, detailed, and accurate inventory of the surface water resources of each district. Such an inventory is indispensable to the effective implementation of controls over both consumptive and nonconsumptive uses by other chapters of the code. A state changing from the common law riparian reasonable use rule to the code's permit system and reasonable-beneficial use rule cannot operate the system without an

Construction permits are required to build dams, impoundments, or diversion or drainage works. Similar permits are required for the modification of existing works. Further, construction permits must be obtained for the building or modification of all works, including those exempted from use permits. This is necessary to keep the inventory of water resources accurate and up-to-date, to effectuate the purpose of protecting public safety and health, and to help prevent cheating on the use-permit system. This assures that works will conform to the standards provided by the sections allowing the district to make inspections during the construction process and requires the filing of a detailed completion report when the work is finished.

Finally, the district has the duty to make periodic inspections of all surface water works and the power to enter onto land at reasonable times for the purpose of making such inspections. The code also provides for the correction of unsafe dams or other works and gives the district the authority to make repairs if the owner fails to do so within a reasonable time.

Both the inventory provisions and the construction permit provisions of chapter 4 are dedicated to the same end—the effective management of the district's water resources. When combined with the provisions of chapter 3 and with the use controls of chapter 2, they make possible the most efficient use of available water, the maintenance of minimum flows, minimum lake levels, and minimum ground water levels, and the preservation of fish, wildlife, the ecological balance, and the public health and safety.

# **\$4.01** Definitions

accurate inventory of resources.

When appearing in this chapter or in any rule, order, or regulation adopted pursuant thereto, the following words shall mean:

(1) Dam—Any artificial or natural barrier, with appurtenant works, raised to obstruct or impound, or which does obstruct or impound, any of the surface waters of this state.

COMMENTARY. A dam is usually defined as an artificial structure. However, the Model Water Code's definition also includes any natural topographic features that might be utilized to impound or obstruct surface water. While a construction permit under \$4.04 would not be required for a naturally occurring dam, a permit under that section would be required for alterations and additions to the dam.

This definition was taken from the California Water Code.<sup>4</sup> See also the commentary for \$4.01 (5).

(2) Appurtenant work—Any artificial improvement to a dam which might affect the safety of such dam, or, when employed, might affect the holding capacity of such dam, or of the reservoir or impoundment created by such dam.

COMMENTARY. The California Water Code<sup>5</sup> provided this definition. See also the commentary for \$4.01 (5).

(3) Impoundment—Any lake, reservoir, pond, or other containment of surface water occupying a bed or depression in the earth's surface and having a discernible shoreline.

COMMENTARY. This definition is original. See also the commentary for §4.01 (5).

(4) Reservoir—Any artificial or natural holding which contains or will contain the water impounded by a dam.

COMMENTARY. The definition of reservoir was taken from the California Water Code.<sup>6</sup> See also the commentary for §4.01 (5).

(5) Work—Any artificial structure not included in section 4.01 (1) and (2), and including, but not limited to, ditches, canals, conduits, channels, culverts, pipes, and other construction that connects to, draws water from, drains water into, or is placed in or across the waters of the state.

COMMENTARY. While the "dam," "appurtenant works," "impoundment," "reservoir," and "works" definitions individually have no out-

4. CAL. WATER CODE §6002 (West 1971). 5. *Id.* at §6006. 6. *Id.* at §6004.5.

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standing or particular significance, collectively these definitions are the most important in this chapter. Together they include virtually every type of artificial or natural structure or construction that can be used to connect to, draw water from, drain water into, or be placed in or across surface water. In essence, they include all structures and constructions that can have an effect on surface water. The significance of these definitions is pointed out in the commentary for §§4.04 and 4.05.

The "works" definition is original.

(6) Alter—To extend a dam or work beyond maintenance in its original condition, including changes which may increase or diminish the flow or storage of surface water or which may affect the safety of such dam or work.

COMMENTARY. Several existing definitions are less inclusive.<sup>7</sup>

(7) Maintenance—"Maintenance" or "repairs" shall mean only such maintenance or repairs as may affect the safety of any dam, impoundment, reservoir, appurtenant works, or works.

COMMENTARY. This definition was taken from a California statute<sup>8</sup> and a Minnesota statute.<sup>9</sup>

(8) Variants of defined word—The definition of a defined word applies to any of its variants.

#### **\$4.02** Exemptions

(1) Nothing in this chapter, or in any rule, order, or regulation adopted pursuant thereto, shall be construed to affect the right of any natural person to capture, contain, discharge, and use surface water for uses permitted by section 2.01 (1).

COMMENTARY. Section 2.01 (1) exempts persons from obtaining consumptive use permits for domestic water uses. The rationale for this exemption is that the quantity of water being withdrawn and the amount of construction associated with the use would both be so minimal that they would have no significant effect on the surface

7. See id. at §6006; Idaho Code §4217-11 (1947). 8. Cal. Water Code §6006 (West 1971). 9. MINN. Stat. Ann. §105.52 (1964). waters of the state. Any uses other than uses for domestic purposes must adhere to the provisions of this chapter.

This provision was modeled after an Iowa statute.<sup>10</sup>

(2) Nothing in this chapter, or in any rule, order, or regulation adopted pursuant thereto, shall be construed to affect the right of any person engaged in the occupation of agriculture, floriculture, or horticulture to alter the topography of any tract of land for purposes consistent with the practice of such occupation, provided, however, that such alteration shall not be for the sole or predominant purpose of impounding or obstructing surface waters.

COMMENTARY. The intent of this subsection is to allow persons engaged in agricultural, floricultural, and horticultural operations to engage in ordinary farming and gardening without obtaining a construction permit under §4.04. Theoretically, such operations may incidentally trap or divert some surface water. For example, by plowing a pasture a farmer is trapping and diverting surface water that would have constituted part of the runoff and eventually would have become part of the surface water of the state. Without this exemption the farmer would have theoretically been required to obtain a permit under §4.04. In addition, it would appear that all changes of topography which would alter natural runoff, such as contour plowing, would also require a construction permit under §4.04. The quantity of the water being diverted and trapped is so small that it would serve no practical purpose to require a permit for such work. In addition, the administrative burden of regulating such operations would be enormous. This subsection is original.

(3) All rights and restrictions set forth in this section shall be enforced by the governing board, and nothing contained herein shall be construed to establish a basis for a cause of action for private litigants.

COMMENTARY. The purpose of this subsection is to leave unfettered by legislative bonds the development of common law rights of property owners.

A possible objection to \$4.02 (3) is that it tacitly approves the "common enemy" doctrine. Since \$4.02 (1) allows a landowner to

10. See Iowa Code Ann. §455A.1 (Supp. 1970).

divert water on his own land for domestic uses, and does not give adjacent landowners concomitant remedies to the exemption, it would appear that such landowners are left to fend for themselves against the "common enemy."

However, the thrust of 4.02 (3) is not to deny common law rights, but merely to leave to the governing board enforcement of violations of these exceptions. If adjacent landowners are injured, common law remedies remain available to them.<sup>11</sup>

# \$4.03 Headgates, Valves, and Measuring Devices

(1) The owner of any dam, impoundment, reservoir, appurtenant works, or works, by means of which water is diverted from or discharged into the waters of the state, shall install and maintain a substantial and serviceable headgate or valve at the point where the water is diverted or discharged, and shall install a measuring device which meets the requirements and specifications published by the governing board at the point designated by the governing board for measuring the water discharged or diverted.

(2) If any owner shall not have constructed or installed such headgate, valve, or measuring device within sixty (60) days after the governing board has ordered its construction, the governing board shall have constructed or installed such headgate, valve, or measuring device, and the costs of installing the headgate, valve, or measuring device shall be a lien against the owner's land upon which such installation takes place until the governing board is reimbursed in full.

(3) No person shall alter or tamper with a measuring device so as to cause it to register other than the actual amount of water diverted, discharged, or taken. Violation of this subsection shall be a misdemeanor, punishable under section 1.25 of this code.

(4) Such headgates, valves, and measuring devices shall be subject to the inspections provided in section 4.07 of this code.

COMMENTARY. Proper resource management requires knowledge of the amount of resource available, the amount being withdrawn, and the amount being returned. This section will enable the water management district to maintain accurate data on the quantity of water being withdrawn from and discharged into the surface waters of the state.

11. See 59 A.L.R. 2d 421 (1958).

The administrative machinery necessary to enforce this section effectively should be coordinated with the issuance of the consumptive use permits provided for in chapter 2. This section will insure that no one will withdraw more water than his consumptive use permit allows. In addition, the amount of water being withdrawn from and discharged into any surface waterbody will be the basis for evaluating future water use permits which propose to use the same surface waterbody as a source. This represents one of the initial steps that must be taken in order to obtain the basic information to develop an optimum coordinated program of surface water management.

It is expected that the water management districts will test and evaluate the available measuring devices and publish a list of approved equipment for the convenience of surface water users. Likewise, equipment not so approved but meeting the water management district's standards will be approved for use upon application by the prospective user and inspection and approval by the district.

Subsection (2) sets forth a method for the installation of these measuring devices by the water management district when an owner fails to install one. It also sets forth the means to reimburse the water management district for any and all cost involved in the installation.

Subsection (3) provides for punishment of any person who alters or tampers with a measuring device.

Subsection (4) provides the water management district with the authority to inspect these measuring devices to insure that they have not been tampered with or altered so as to cause the devices to register other than the actual amount of water discharged into or withdrawn from the surface waters of the state.

Section 4.03 was taken from Arizona<sup>12</sup> and New Mexico statutes.<sup>13</sup>

#### **§4.04** Permits for Construction or Alterations

(1) Except for the exemptions set forth in section 4.02, no person shall construct or alter a dam, impoundment, reservoir, work, or appurtenant work, other than in the course of normal maintenance, without first obtaining a permit from the governing board. The governing board may impose such reasonable conditions as are necessary to assure that the construction or alteration of such dam, impoundment, reservoir, work, or appurtenant work will not be inconsistent with the overall objectives

12. ARIZ. REV. STAT. ANN. §45-203 (1956).

<sup>13.</sup> N.M. STAT. ANN. §75-5-19 (1968). See also CAL. WATER CODE §§4103,

<sup>4125 (</sup>West 1971); IDAHO CODE §42–702 (1947).

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of the State Water Plan and will not be harmful to the water resources of the district. Nothing in this section shall be construed to be inconsistent with the provisions of chapter 2 or chapter 5 of this code.

(2) A person proposing to construct or alter a dam, impoundment, reservoir, work, or appurtenant work shall apply to the governing board for a permit authorizing such construction or alteration. The application shall contain the following:

(a) name and address of the applicant;

(b) name and address of the owner or owners of the land upon which the works are to be constructed and a legal description of such land;

(c) location of the work;

(d) engineering drawings showing the detailed plans of construction;

(e) detailed specifications of construction;

(f) name and address of the person who prepared the plans and specifications for construction;

(g) name and address of the person who will construct the proposed work;

(h) general purpose of the proposed work; and

(i) such other information as the governing board may require.

COMMENTARY. Under this section, prior permission is required from the water management district before a dam, impoundment, reservoir, appurtenant work, or work is constructed or altered. Therefore, a permit is required for both construction of dams, impoundments, reservoirs, appurtenant works, and works, and alterations to any existing works. It should be noted that any dams, impoundments, reservoirs, appurtenant works, and works that are constructed for domestic purposes are exempted from obtaining either a water use permit under chapter 2 or a construction permit under this section. Likewise, any alterations to existing structures being used for domestic purposes are also exempt from obtaining an alteration permit under this section.

The construction and alteration permits required under this section are multipurpose. First, the requirement will allow the water management district to insure that anyone constructing or altering any structures will have previously obtained a water use permit. Second, it will allow the water management district to maintain an accurate inventory of the amount of available surface water. This will be of invaluable

assistance as the water management district considers future water use permit applications. Third, it will insure that the proposed construction will not adversely affect any future works the water management district is planning to construct. Fourth, it will generally assist the water management district in protecting the surface water resources. Fifth, it will enable the permittee to be more fully informed of all the critical engineering factors that he must take into account in the design and construction of the structure.

It should also be recognized that in the appropriate cases the water management district will make sure that the water quality standards of chapter 5 will be met.

Listed below are some typical examples of construction that will be permitted under this section and the reasons why the construction must be permitted.

A permit is required prior to construction or alteration for all bridges across rivers, streams, and lakes. The water management district should make certain that the bridge will not restrict flow and there will be adequate navigational clearances, if appropriate.

All docks, bulkheads, and fills in surface water will also be subject to permit. These structures must be permitted to insure that the surface waters into which they extend will not be adversely affected. For example, docks on rivers must not extend too far into the river to be a navigational hazard. Likewise, they must not reduce the river's channel or encroach on the river's flood plain.

All dikes, dams, and related structures constructed in connection with the retention areas and setting ponds for mining operations will also be regulated under this section. While the water management district will be concerned with the quality of the water being discharged from these retention areas, it will also be concerned that the construction is adequate to insure against flash floods that would result from the failure of the structures or dikes.

This section was modeled after Arizona, California, Colorado, Iowa, Minnesota, Mississippi and Wisconsin statutes.<sup>14</sup>

# (3) Notice of all applications for permits under this section shall be published as provided in section 1.19 of this code. The

14. ARIZ. REV. STAT. ANN. §45-313 (Supp. 1970); CAL. WATER CODE §6202 (West 1971); COLO. REV. STAT. ANN. §148-5-23 (1963); IOWA CODE ANN. §469.2 (Supp. 1971); MINN. STAT. ANN. §105.44 (1) (Supp. 1971); MISS. CODE ANN. §§5956-16, -20 (Supp. 1971); WIS. STAT. ANN. §31.05 (Supp. 1971).

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notice shall contain the name and address of the applicant (in the case of a corporation, the address of its principal business office), the date of filing, the date set for a hearing if any, the source of the water to be contained, the quantity of water to be contained, the use to be made of the water and any limitation thereon, and such other information as the governing board may deem necessary.

COMMENTARY. This subsection sets out the information that must be included on the permit application. The governing board by regulation may require additional information from all applicants and may require additional information from a particular applicant at its discretion. This provision parallels the notice provisions of \$2.04 (1) dealing with consumptive use permits.

(4) The notice provided for in subsection (3) above shall state that written objections to the proposed permit may be filed with the governing board by a specified date. The governing board, at its discretion, may request further information from either applicant or objectors, and a reasonable time shall be allowed for such responses.

COMMENTARY. Objections initially must be made in writing. The governing board at this time may screen out frivolous or completely unsubstantiated objections while acquainting the applicant with any remaining ones. This provision parallels §2.04 (2).

(5) If no substantial objection to the application is received, the governing board, after proper investigation by its staff, may at its discretion approve the application without a hearing. Otherwise, the governing board shall set a time for a hearing under section 1.21.

COMMENTARY. The governing board may grant the application without a hearing if no proper objections are received. This should result in relatively few hearings, particularly on small projects where objections are unlikely to be filed. A hearing is required if the governing board is of the opinion that the permit application should be denied. Review of actions of the board based on hearings under this section is provided for in \$1.22 of this code.

The provisions of this subsection are original but are patterned in part after \$2.04 (3).

# \$4.05 Permits for Maintenance or Operation

(1) Except for the exemptions set forth in section 4.02 of this code, no person shall maintain or operate a dam, impoundment, reservoir, work, or appurtenant work without first obtaining a permit from the governing board. The governing board may impose such reasonable conditions as are necessary to assure that the operation or maintenance of such dam, impoundment, reservoir, appurtenant work, or work will not be inconsistent with the overall objectives of the State Water Plan and will not be harmful to the water resources of the district. Nothing in this section shall be construed to be inconsistent with the provisions of chapter 2 or chapter 5 of this code.

COMMENTARY. The reasons for permitting the operation and maintenance of dams, reservoirs, impoundments, appurtenant works, and works are substantially different from those associated with the construction of such works. Control of the operation gives the water management district the power to insure that such operation will be coordinated with the district's overall program of surface water management. By regulation, the water management district may require each permittee to furnish an operation schedule along with the permit application.

The operation permits will be an integral part of the water management district's plan of surface water management. The permit system will insure that the district will be able to maintain an effective program of sound surface water management.

Subsection 4.05 (1) is original.

(2) Except as otherwise indicated in sections 4.08 and 4.09, a permit issued by the governing board for the maintenance and operation of a dam, impoundment, reservoir, work, or appurtenant work shall be permanent, and the sale or conveyance of such dam, impoundment, reservoir, work, or appurtenant work or the land on which the same is located shall in no way affect the validity of the permit.

COMMENTARY. Once operational and maintenance restrictions, if any, have been initially determined, there is clearly no need to require a

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permittee to renew the operational or maintenance permit or for a purchaser to reapply for one. Barring some justification under §§4.08 or 4.09, the water management district would have no valid reason for requiring permit renewals and reapplications which would greatly increase the administrative burden.

Subsection 4.05 (2) is original.

# **\$4.06** Completion Report

Within thirty (30) days after the completion of construction or alteration of any dam, impoundment, reservoir, work, or appurtenant work, the permittee shall file a written statement of completion with the governing board. The governing board shall designate the form of such statement and such information as it shall require.

COMMENTARY. By using the permits for construction and alterations, as provided in \$4.04, and the completion reports, the state and local agencies can obtain an accurate and current inventory of all structures that discharge water into or withdraw water from the surface waters of the state.

The more information that a water management district obtains from these reports, the better an understanding it will have to aid it in developing and managing the surface water. It is only by careful management of the surface water that the district will insure maximum utilization of its surface water during droughts and minimum flood damage during the rainy season.

Section 4.06 was taken from Arizona and Colorado statutes.<sup>15</sup>

### **§4.07** Inspections

(1) During the construction or alteration of any dam, impoundment, reservoir, work, or appurtenant work, the governing board shall make at its expense such periodic inspections as it deems necessary to insure conformity with the approved plans and specifications included in the permit.

COMMENTARY. This subsection provides that the water management district will be able to inspect all dams, appurtenant works, reservoirs, impoundments, and works during their construction or alteration. The purpose of the inspection is to insure that the construction or altera-

15. Ariz. Rev. Stat. Ann. §45–709 (Supp. 1971); Colo. Rev. Stat. Ann. §148–5–25 (1963).

tion is in conformance with the approved plans and specifications and the minimum construction and alteration standards of the district. Some states require an inspection only upon completion of the construction or alteration and periodically thereafter.<sup>16</sup> However, it was felt that inspections during construction or alteration would be more beneficial to the permittee and the water management district, since errors are usually easier and cheaper to correct during construction.

This subsection was taken from Arizona and California statutes.<sup>17</sup>

(2) If during construction or alteration the governing board finds that the work is not being done in accordance with the approved plans and specifications as indicated in the permit, it shall give the permittee written notice stating with which particulars of the approved plans and specifications the construction is not in compliance and shall order immediate compliance with such plans and specifications. Failure to act in accordance with the orders of the governing board after receipt of written notice shall result in the initiation of revocation proceedings in accordance with section 4.09.

COMMENTARY. Subsection (2) establishes the procedure for the water management district to follow when it finds that the construction or alteration by a permittee is not conforming with the approved plans and specifications. Such a power is clearly implicit in the broader state police power to regulate the private and public use of surface water.

Arizona and California statutes provided the models for this subsection.<sup>18</sup>

(3) Upon completion of the work the governing board shall make periodic inspections, not less than annually, of dams, impoundments, reservoirs, works, or appurtenant works as it deems necessary to protect the public health and safety and the water resources of the state. Section 1.17 (2) of this code concerning right of entry is fully applicable to this subsection.

17. ARIZ. REV. STAT. ANN. §45-708 (1956); CAL. WATER CODE §6400 (West 1971).

18. ARIZ. REV. STAT. ANN. 45–708 (1956); CAL. WATER CODE 6404 to 66407 (West 1971).

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<sup>16.</sup> COLO. REV. STAT. §§148-5-19, -25 (1963); R.I. GEN. LAWS ANN. §46-19-1 (1970).

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COMMENTARY. This subsection is designed to allow the water management district to make reasonable periodic inspections following the completion of the construction or alteration of the dam, reservoir, appurtenant works, impoundments, and works. The conduct of the inspections is at the complete discretion of the water management district, subject to the annual requirement, which insures some control over all permitted works. The right of reasonable entry is conferred on the water management district by 1.17 (2) of the code. The primary purpose of these inspections is to insure that the operation and maintenance of all works are in conformity with the approved permits. In addition, these inspections will enable the water management district to insure that permits are obtained for all subsequent construction and alterations.

This subsection is original.

### \$4.08 Abandonment

(1) Any owner of any dam, impoundment, reservoir, work, or appurtenant work wishing to abandon or remove such works shall first obtain a permit to do so from the governing board.

COMMENTARY. In subsection 4.08 (1) it is provided that, prior to abandonment or removal of all dams, reservoirs, impoundments, appurtenant works, and works, permission to abandon or remove the works must be obtained from the water management district. The purpose of this subsection is to enable the water management district to maintain an up-to-date inventory of all surface water users and an inventory of all structures affecting the surface water. An up-todate inventory of water users is necessary for the water management district to appraise efficiently applications for water use permits. The inventory of all structures affecting the surface waters is necessary as the water management district carries out a coordinated program of surface water management, and it also assists the water management district in analyzing the problems that accompany such a program.

Subsection 4.08 was taken from a Wisconsin statute.<sup>19</sup>

(2) Where any dam, impoundment, reservoir, work, or appurtenant work is not owned or controlled by the state or any of its agencies and is not used or maintained under the authority of the owner for a period of three (3) years, it shall be presumed

19. WIS. STAT. ANN. §31.185 (Supp. 1971).

that the owner has abandoned such dam, impoundment, reservoir, work, or appurtenant work and the site thereof, and has dedicated the same to the district.

COMMENTARY. In this subsection, the water management district is allowed in the appropriate cases to assume the operation and control of any dam, reservoir, appurtenant work, impoundment, and work which is not used or maintained by its owner for a fixed period of time. Providing the water management district with this authority is necessary if the district is to maintain an effective program of surface water management.

This subsection is original.

(3) The title of the district to any such dam, impoundment, reservoir, work, or appurtenant work may be established and determined in the court appointed by statute to determine the title to real estate.

COMMENTARY. In the cases of abandonment where the water management district wants to assume the operation and control of the abandoned works, the district will want title to the real property so that it can make additions and improvements to the works without fear of the original owner claiming title to the works.

A Minnesota statute was the model for this subsection.<sup>20</sup>

#### \$4.09 Revocation and Modification of Permits

The governing board may revoke or modify a permit at any time if it determines that a dam, impoundment, reservoir, work, or appurtenant work has become a danger to the public health or safety or if its operation has become inconsistent with the objectives of the State Water Plan. Upon such revocation or modification, the governing board shall give written notification to the permittee. No permit shall be revoked or modified before the affected party is afforded an opportunity for a hearing before the governing board in accordance with section 1.21 of this code. If the governing board feels that the danger to the public is imminent, however, it may temporarily restrain the construction, alteration, or operation of the works until the hearing is concluded, or may take such action as is necessary under section 4.12 of this chapter.

20. MINN. STAT. ANN. §110.37 (Supp. 1971).

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COMMENTARY. Section 4.09 is designed to enable the water management district to enforce the provisions of this chapter and at the same time provide procedural due process at the enforcement proceedings. The modification provision is designed to give the water management district flexibility as its policies or those of the state agency change. The district may not be able to satisfy the increasing demand for water and at the same time preserve the surface water resource if it is bound by the original conditions set forth in each permit. The modification provision is not to be used as a punitive measure. Modification merely affords the water management district the capability to adjust its requirements in conformance with the best interests of the people of the district in the conservation and use of the surface water resources of the district.

Revocation of a permit, however, may be used against the owner of works which do not meet the minimum standards of the district. The permittee should be given a reasonable time to correct all deficiencies before revocation proceedings are initiated.

This section is original.<sup>21</sup>

### \$4.10 Abatement

Any dam, impoundment, reservoir, work, or appurtenant work which violates the laws of this state or which violates the standards of the governing board shall be declared a public nuisance. The operation of such dam, impoundment, reservoir, appurtenant work, or work may be enjoined by suit by the state or one of its agencies, or by a private citizen. The governing board shall be a necessary party to any such suit. Nothing in this section shall be construed to conflict with the provisions of section 4.09 of this chapter, pertaining to the revocation powers of the governing board.

COMMENTARY. This section provides the water management district and private citizens with access to the courts against those permittees who violate the provisions of their permits. It also provides that in a court action the water management district is a necessary party to the action. By making the district a necessary party to the action, the public interest will always be represented.

Section 4.10 was taken from Wisconsin and Iowa statutes.<sup>22</sup>

21. See Cal. WATER CODE §6357.1 (West 1971). 22. IOWA CODE ANN. §469.16 (1949); WIS. CODE ANN. §31.25 (Supp. 1971).

**§4.11 Remedial Measures** 

Upon completion of its inspection the governing board shall determine what alterations and repairs are necessary and order that such repairs and alterations shall be made within a reasonable time. If such landowner shall fail to make such repairs and alterations within the allotted time, the governing board may, at its discretion, cause such alterations and repairs to be made. The cost of such repairs shall be a lien against the property of such landowner until the governing board is reimbursed, with reasonable interest and attorney's fees, for its costs. Said lien may be enforced in a civil court of competent jurisdiction.

COMMENTARY. Section 4.11 sets forth the procedure for the water management district to remedy defective conditions found as a result of inspections under §4.07.

Several statutes were used as models for this subsection.<sup>23</sup>

**\$4.12** Emergency Measures

(1) The governing board shall immediately employ any remedial means to protect life and property if either:

(a) the condition of any dam, impoundment, reservoir, work, or appurtenant work is so dangerous to the safety of life or property as not to permit time for the issuance and enforcement of an order relative to maintenance or operation, or

(b) passing or imminent floods threaten the safety of any dam or reservoir.

(2) In applying the emergency measures provided for in this section, the governing board may in an emergency do any of the following:

(a) lower the water level by releasing water from any impoundment or reservoir;

(b) completely empty the impoundment or reservoir; or

(c) take such other steps as may be essential to safeguard life and property.

(3) The governing board shall continue in full charge and control of such dam, impoundment, or reservoir, and its appurtenant works, until they are rendered safe or the emergency occasioning the action has ceased.

23. Cal. WATER CODE §6390 (West 1971); COLO. REV. STAT. ANN. §148-5-9 (1963); ORE. REV. STAT. §549.520 (1969); WIS. STAT. ANN. §31.19 (Supp. 1971). COMMENTARY. This section allows the district to proceed with emergency work without unnecessary delay. It is taken from a California statute.<sup>24</sup>

### **§4.13 Immunity from Liability**

(1) No action shall be brought against the state, or any of its agencies, or any agents or employees of the state, for the recovery of damages caused by the partial or total failure of any dam, impoundment, reservoir, work, or appurtenant work upon the ground that the state is liable by virtue of any of the following:

(a) approval of the permit for construction or alteration;

(b) the issuance or enforcement of orders relative to the maintenance or operation;

(c) control and regulation of the dam, impoundment, reservoir, work, or appurtenant work; or

(d) measures taken to protect against failure during emergency.

COMMENTARY. Section 4.13 indicates that the state or the water management district assumes no tort liability in carrying out the provisions of this chapter.

This section was taken from a California statute.<sup>25</sup>

# **§4.14** Applicability to Existing Works

(1) Any person owning or operating a dam, impoundment, reservoir, work, or appurtenant work shall register said work with the governing board within which district the work is located. Registration shall be on the forms provided by the governing board.

(2) All provisions of this chapter shall apply to all dams, impoundments, reservoirs, works, or appurtenant works in existence at the time of its effective date.

COMMENTARY. It is stated in §4.14 that the provisions of chapter 4 pertain to all existing works. Obviously, the water management district must be given the authority to regulate existing works if it is to carry out its responsibilities properly.

This subsection is original.

24. CAL. WATER CODE §§6110-13 (West 1971). 25. *Id.* at §6028.

# Chapter 5

# **Protection of Water Quality**

Water pollution has received increasing recognition of late as a most serious threat to the environment.<sup>1</sup> Municipal, industrial, and agricultural operations each contribute to the pollution problem.

#### Municipal Pollution

Municipalities daily empty millions of gallons of inadequately treated effluent into the nation's rivers and streams.<sup>2</sup> In the years 1969–70, for example, 1,600 municipalities were discharging completely untreated sewage into nearby waterbodies.<sup>3</sup> This, of course, aggravated the problems of downstream users.<sup>4</sup> Municipal wastes are almost exclusively organic in nature. Currently municipal wastes are estimated to average about 10 million tons annually while industrial pollution averages approximately 15 million tons.<sup>5</sup> Treatment in general is technologically feasible;<sup>6</sup> the primary impediment is financial inability on the part of municipalities to take effective abatement measures.

The use of an organic polymeric flocculant for the primary treatment<sup>7</sup> of sewage is a promising step. Primary treatment currently

1. See generally Muskie, Environmental Jurisdiction in the Congress and the Executive, 22 Me. L. Rev. 171, 171–76 (1970); D. CARR, DEATH OF THE SWEET WATERS (1966); J. WRIGHT, THE COMING WATER FAMINE (1966).

2. Hines, Nor Any Drop to Drink: Public Regulation of Water Quality, 52 IOWA L. REV. 186, 190 (1966).

3.1 DEP'T OF INTERIOR, FEDERAL WATER POLLUTION CONTROL ADMINISTRA-TION, THE COST OF CLEAN WATER AND ITS ECONOMIC IMPACT 21 (1969).

4. Grady, Effluent Charges and the Industrial Water Pollution Problem, 5 New England L. Rev. 61, 75 (1969).

5. Nebolsine, Today's Problems of Industrial Waste Water Pollution Abatement, 1 ABA NAT. RES. LAW. no. 1, 39, 40 (1968).

6. Grady, supra note 4, at 65.

7. The physical solution to pollution is adequate treatment of wastes. Three forms of treatment, primary, secondary, and tertiary, are now available. Primary treatment includes methods of screening and gravity separation, such as sedimentation, skimming, and detention. Low dosage chlorination may also be included. Secondary treatment usually involves such chemical processes as flocculation and clarification, neutralization, ion exchange, or oxidation. Biooxidation, industrial-type filtration, wet combustion, and various other special processes may also be used. Tertiary treatment involves filtration of the type used for producing drinking water, absorption (mostly using activated carbon), removes some 35 per cent of the biological oxygen demand (BOD). The polymers, which only cost about seven dollars per million gallons of sewage treated, will increase the amount of BOD removed to about 60 per cent.<sup>8</sup> Presently available technology, including primary, secondary, and tertiary treatment, could reduce the present municipal contribution to the pollution problem up to 95 per cent.<sup>9</sup>

The financial aspect of the municipal pollution problem, however, remains unsolved. Until federal, state, and local governments develop a sound financial basis for the construction of modern treatment facilities for municipalities, abatement efforts in this area will never be successful.10

# Industrial Pollution

While municipal pollution creates substantial difficulties, industrial discharges constitute a problem of even greater magnitude.<sup>11</sup> In 1960 the organic load of industry was more than twice the organic load of all municipal sewage.<sup>12</sup> It is estimated that industrial pollution will double this amount by 1980.13 In addition, pollution from synthetic organic chemicals such as nylon, plastics, detergents, and pesticides has vastly complicated the task of industrial waste treatment.<sup>14</sup>

Inorganic industrial wastes, while of less volume than organic products, are potentially more dangerous,<sup>15</sup> and the treatment for inorganic wastes is frequently more difficult and costly. For this reason much inorganic matter is discharged into receiving waters with no treatment whatsoever.<sup>16</sup> If tertiary treatment plants utilizing current technology were installed, industrial pollution of this sort could be more adequately controlled.17

### Agricultural Pollution

The high productivity of America depends largely on the use of substantial amounts of mineral fertilizers composed primarily of phos-

application of ozone or other high-rate oxidizing chemicals, and lagooning. Nebolsine, supra note 5, at 46.

8. CHEMICAL AND ENGINEERING NEWS, October 10, 1966, at 40.

9. CARR, supra note 1, at 54.

10. For a more complete discussion of this problem see the commentary to §5.03 (5).

11. Hines, supra note 2, at 192.

13. Id. 12. Id.

14. Hines, Controlling Industrial Water Pollution: Color the Problem Green, 9 B.C. IND. & COM. L. REV. 553, 560-61 (1968). 15. Id. at 561. 16. Id. at 562.

17. CARR, supra note 1, at 153, 155.

phates and nitrates.<sup>18</sup> This fertilizer cannot be absorbed entirely by the crops and some of the residue runs into streams and lakes with every rain.<sup>19</sup> The problem is greatly complicated by the fact that it is frequently unknown where, or in what quantity, the fertilizer components enter the streams.<sup>20</sup>

The ultimate effect of such practices cannot be fully evaluated at present. However, between eight and nine parts per million of nitrate in drinking water causes serious respiratory difficulty in infants. This phenomenon is known as cyanosis and results from nitrates interfering with the hemoglobin function. For domestic animals, five parts per million is considered unsafe. Some wells in the United States are now at three parts per million of nitrate.<sup>21</sup>

In addition, nutrient pollution from septic tanks and the runoff from fertilizers used in agricultural operations results in a condition known as eutrophication.<sup>22</sup> Some nutrients are present in all bodies of surface water and are necessary to sustain fish and aquatic life. However, in excessive quantities, nutrients may cause rapid and uncontrolled growth of algae and other aquatic plants. This process impairs recreational value and accelerates the aging process.<sup>23</sup>

Water pollution from the sources discussed above has now reached such proportions that the remedies available at common law are inadequate to cope with the problem. Before discussing the various legislative responses to water pollution, it may be helpful to consider the basic common law remedies available to private persons injured by pollution.<sup>24</sup>

#### Common Law Remedies

The riparian owner, according to strict natural flow doctrine, has no right to change the natural condition or characteristics of the water in a navigable waterbody, and any such change is actionable without necessity of actual harm.<sup>25</sup> The reasonable use rule modifies the strict

18. B. COMMONER, SCIENCE AND SURVIVAL 125 (1966).

19. Id.

20. Hines, supra note 2, at 192.

21. B. COMMONER, supra note 18, at 12.

22. Kusler, Water Quality Protection for Inland Lakes in Wisconsin: A Comprehensive Approach to Water Pollution, 1970 WIS. L. REV. 35, 39. 23. Id.

24. See Note, Private Remedies for Water Pollution, 70 COLUM. L. REV. 734 (1970).

25. See generally, H. COULSON & U. FORBES, WATERS & LAND DRAINAGE 191 (6th ed. 1952); Note, Statutory Treatment of Industrial Stream Pollution, 24 GEO. WASH. L. REV. 302, 306 (1956).

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approach of natural flow and allows the lower riparian only the right to have his water kept free from unreasonable interference. A use cannot be unreasonable if there is no actual injury to other riparian owners. Even if there is injury, the use nevertheless may be privileged if reasonable under all the facts. Thus, in certain circumstances the pollution of water may be reasonable and therefore lawful under the latter approach.<sup>26</sup>

Reasonableness is a factual question controlled by the circumstances of each case. It cannot be determined in advance with any certainty.<sup>27</sup> In deciding how much pollution is reasonable, courts have considered these factors: the stream's character, volume, and velocity; past uses of the stream; location and use of the plaintiff's land; extent of plaintiff's damages; local customs and customs of the industry involved; and comparative public concern on the two sides of the controversy.<sup>28</sup>

The first Restatement of Torts took the position that pollution is unreasonable unless the utility of defendant's conduct outweighs the gravity of the harm.<sup>29</sup> While the second Restatement considers pollution control to come under the law of nuisance rather than riparian rights, the same balancing process is involved.<sup>30</sup>

A blend of property and tort law governs the common law remedies of the riparian owner damaged by pollution.<sup>31</sup> The usual theory of action in a pollution suit is private nuisance, the suit being predicated upon an unreasonable interference with the use and enjoyment of land and accompanying water rights.<sup>32</sup> Trespass is another theory employed by some courts,<sup>33</sup> but it is not often relied upon since it is considered possessory in nature. Generally, pollution creates a cause of action for an injunction, damages, or both.

26. See Parsons v. Tennessee Coal, Iron & R.R., 186 Ala. 84, 64 So. 591 (1914) (denial of damages because no substantial injury from defendant's coal mining operation); Clark v. Lindsay Light & Chem. Co., 341 Ill. App. 316, 93, N.E. 2d 441 (1950) (court refused injunction against pollution because damage only nominal); Panther Coal Co. v. Looney, 185 Va. 758, 40 S.E. 2d 298 (1946) (verdict for plaintiff reversed; no substantial change shown).

27. MALONEY, PLAGER, AND BALDWIN §112.1.

28.5 R. POWELL, REAL PROPERTY 376 (1962); Note, Purity & Utility: Diversity of Interest in River Pollution, 84 U. PA. L. REV. 630, 637 (1936).

29. Restatement of Torts §§826, 852 (1939).

30. RESTATEMENT OF TORTS (2d) §849 (ten. draft No. 17 [1971]), Scope Note 40.

31. See generally 3 Cooley, Torts §421 (4th ed. 1932); 2 FARNHAM, WAters & Water Rights §§515–25 (1904); Restatement of Torts §§832, 852, 853 (1939); 3 Tiffany, Real Property §§721, 722, 730 (3d ed. 1939).

32. PROSSER, TORTS 622 (3d ed. 1964) (hereinafter cited as PROSSER, TORTS). 33. W. G. Duncan Coal Co. v. Jones, 254 S.W. 2d 720 (Ky. 1953). See also PROSSER, TORTS 614. The preferred relief against interference with water rights is the injunction, since it furnishes relief before, rather than after, a threatened violation. Moreover, in many cases injunctive relief may be the only effective sanction because provable injury may be so small that a judgment for damages would be valuable only to prevent the defendant from gaining a prescriptive right.

But an injunction will be issued only if the plaintiff establishes facts that entitle him to an injunction according to the usual rules governing equitable relief. Thus, the plaintiff must show not only that the defendant's use is unreasonable, but also that the injunctive relief is necessary because the threatened injury is irreparable or cannot be adequately compensated by damages at law, or that a multiplicity of suits would result from failure to grant the injunction.<sup>34</sup>

In an appropriate case a court may compare the relative importance of the interests of upper and lower riparian owners and deny an injunction on the ground that public interest in permitting the pollution is of overriding importance, even though the plaintiff is clearly damaged.<sup>35</sup> This is referred to as the balance of convenience doctrine, and it is often used in defense of municipal or governmental operations. The choice of a private, rather than a public, nuisance action is probably of little importance in this context, though it may well be controlling in an action for damages where legislative authority to pollute is claimed. If injunctive relief is available, damages for past harm can usually be obtained as an adjunct to the specific equitable relief given.

Although actions arising from pollution injury are generally brought by a lower riparian, conditions may give rise to actions by others if they can show an injury to their interests. At common law the Attorney General could sue to abate a public nuisance.<sup>36</sup> A private individual could likewise bring an action to abate a public nuisance if he could show injury different in kind from that suffered by the public generally.<sup>37</sup>

34. See 56 Am. JUR. Waters §421 (1947).

35. See State ex rel. Harris v. City of Lakeland, 141 Fla. 795, 193 So. 826 (1940); Pennsylvania Coal Co. v. Sanderson, 113 Pa. 126, 6 A. 453 (1886) (leading case for denying remedy); Maloney, The Balance of Convenience Doctrine in the Southeastern States, Particularly as Applied to Water, 5 S.C.L.Q. 159 (1952).

36. Meriwether Sand & Gravel Co. v. State *ex rel*. Att'y Gen., 181 Ark. 216, 26 S.W. 2d 57 (1930) (suit by Attorney General to enjoin defendant from discharging washings from gravel beds into creek); COULSON & FORBES, *supra* note 25, at 734; PROSSER, TORTS 605.

37. Bair v. Central and Southern Florida Flood Control District, 144 So. 2d 818 (Fla. 1962).
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Defendants in water pollution suits may be riparians or nonriparians who create or maintain the nuisance which causes the injuries.<sup>38</sup> When pollution damage results from a concert of action, the parties are jointly and severally liable.<sup>39</sup> Some jurisdictions hold polluters jointly liable if they know the cumulative effect of their separate acts of pollution will result in injury.<sup>40</sup> In others, however, when parties commit separate and distinct acts without common purpose, which later intermingle to cause injury, the defendants are liable for damages only in separate actions.<sup>41</sup> Under these requirements, it is extremely difficult for a plaintiff to collect damages when more than one polluter contributes to his injury.

# **Defenses**

The primary defenses that can be raised in resisting a suit for pollution damages are the statute of limitations, prescription, agreement, and laches.

The most commonly raised defense in resisting a suit for pollution damages is the statute of limitations. The statute may begin to run at different times, depending on whether the jurisdiction applies the natural flow or reasonable use theory of riparian rights. If the strict natural flow theory is used, a cause of action arises as soon as the upstream owner starts polluting, regardless of whether there are actual injuries to others.<sup>42</sup> Under this view the period of the statute may run before actual injury exists, thus barring all recovery.<sup>43</sup> Under the reasonable use theory, a cause of action accrues only when a use becomes unreasonable; at this point in time the statute begins to run.<sup>44</sup>

Under either theory each new injury will create a new cause of action. Thus, if the injury is permanent and the statute of limitations expires, a new cause of action should arise on any increase in amount or kind of the injury. Similarly, a new cause of action arises for each additional temporary injury.45

38. Barlett v. Hume-Sinclair Coal Mining Co., 351 S.W. 2d 214, 216 (Mo. Ct. App. 1961).

39. See Prosser, Joint Torts & Several Liability, 25 CALIF. L. REV. 413 (1937). 40. See, e.g., Phillips Petroleum Co. v. Hardee, 189 F. 2d 205 (5th Cir. 1951); Bowman v. Humphrey, 124 Iowa 744, 747, 100 N.W. 854, 855 (1904); McKinney v. Deneen, 231 N.C. 540, 58 S.E. 2d 107 (1950).

41. Symmes v. Prairie Pebble Phosphate Co., 66 Fla. 27, 63 So. 1 (1913).

42. Riggs v. City of Springfield, 344 Mo. 420, 126 S.W. 2d 1144 (1939). 43. Fulmer v. Skelly Oil Co., 143 Kan. 55, 53 P. 2d 825 (1936) (pollution began in 1917, but no actual damage until 1932, held, single action for permanent damages arose in 1917-barred by two-year statute of limitations).

44. Vickers v. City of Fitzgerald, 216 Ga. 476, 117 S.E. 2d 316 (1960).

45. City of Clanton v. Johnson, 245 Ala. 470, 17 So. 2d 669 (1944).

Another common defense is that the defendant has acquired a prescriptive right to pollute. Prescription, as broadly defined, is the creation of an interest in property by one party and the reciprocal extinguishing of another party's interest in property by lapse of time.<sup>46</sup> By the acquisition of a prescriptive right, a person may continue to pollute a stream and the lower riparian will have no right to object. A prescriptive right is acquired by maintaining for the required period a continued pollution under claim of right and of such a nature that it will infringe on the right of the lower owner without change in purpose, circumstances, or extent.<sup>47</sup> The period of prescription commences at the same time a cause of action would arise under either the natural flow or reasonable use theories, whichever is applicable.<sup>48</sup> Most jurisdictions allow the acquisition of prescriptive rights by acts which constitute a private nuisance; however, when the pollution constitutes a public nuisance, it may usually be enjoined regardless of the period it has been in existence.49

An agreement may be made between riparian owners to allow a watercourse to be polluted to a greater degree than ordinarily permissible. Such an agreement is permissible if it creates a private nuisance; however, if such an agreement results in the creation of a public nuisance, it will be considered a violation of public policy.<sup>50</sup> A valid agreement creates an easement to which subsequent owners of the land who have actual or constructive notice will not be able to object.<sup>51</sup>

In an equitable suit, laches may bar relief if the plaintiff fails to act for an undue length of time and is negligent in failing to act more promptly while the other party changes his position to his detriment. The essential difference between a statute of limitations and laches is that the statute bars the action solely because of the passage of a specified period of time, while laches precludes recovery when the respondent is unduly prejudiced by the complainant's unreason-

46. RESTATEMENT OF PROPERTY ch. 38, Topic A, Introductory Note, at 2922 (1944).

47. West Ky. Coal Co. v. Rudd, 328 S.W. 2d 156 (Ky. 1959).

48. MALONEY, PLAGER, AND BALDWIN §112.3 (b).

49. W. G. Duncan Coal Co. v. Jones, 254 S.W. 2d 720 (Ky. 1953); Jones v. Breyer Ice Cream Co., 1 App. Div. 2d 253, 149 N.Y. S. 2d 426 (1956); 2 FARNHAM, *supra* note 31, at §521.

50. Daniels v. Bethlehem Mines Corp., 391 Pa. 195, 137 A. 2d 304 (1958) (written agreement to permit discharge of mine water upheld where only private nuisance); 2 FARNHAM, *supra* note 31, §526.

51. Luama v. Bunker Hill & Sullivan Mining & Concentrating Co., 41 F. 2d 358 (9th Cir. 1930).

able delay in bringing the suit, without regard to any particular interval of time.<sup>52</sup>

Common law tort liability generally has been an ineffective technique for controlling pollution. Perhaps the primary weakness is that the damage remedy, which is much easier to obtain for stream pollution than the injunction, is not designed to prevent pollution initially but to afford relief retrospectively to parties injured. Pollution and its control involve complex technical problems which courts simply are not equipped to handle effectively. Even were a particular court to have the necessary expertise, it would be in no position to formulate a comprehensive pollution control program because it is compelled to act on a case-by-case basis.

In the past two decades the national pollution problem has increased rapidly, indicating that state pollution control programs in general were not adequate. Whether this was due to lack of money, lack of power, lack of technical knowledge, or the result of political pressure, it became clear that many states needed help with their pollution control programs.<sup>53</sup> Space does not permit a detailed study of the federal influence in water quality control;<sup>54</sup> what follows is a brief description of the more prominent federal water pollution control legislation.

# Federal Legislation

The Federal Water Pollution Control Act<sup>55</sup> and Rivers and Harbors Act<sup>56</sup> are the most significant federal pollution control statutes.

The foundation of the present federal pollution control program is the Federal Water Pollution Control Act. It provides for the establishment of water quality standards for interstate waters through coordinated federal-state action,<sup>57</sup> and such standards have been implemented throughout the nation.

Two methods of enforcement are available under the act, one involving suit to enforce interstate water quality standards<sup>58</sup> and

52. See generally Note, Equity: Effect of Statutes of Limitations in Equity Suits, 3 U. FLA. L. REV. 351 (1950).

53. See Stein, Problems and Programs in Water Pollution, 2 NAT. Res. J. 388, 408-9 (1962).

54. For more information on this matter see DEGLER, FEDERAL POLLUTION CONTROL PROGRAMS (1969); Stein, The Actual Operation of the Federal Water Pollution Control Administration, 3 NAT. Res. LAW 41 (1970).

55.33 U.S.C. §§1151–75 (1970).

56. Id. at §§401–25.

57. Id. at \$\$1160 (a) (1)-(4).

58. Id. at \$1160 (c) (5) authorizing action under \$1160 (g) (1-2).

### COMMENTARY

another more general abatement procedure.<sup>59</sup> Various conditions must be met prior to the utilization of either enforcement device,<sup>60</sup> yet both emphasize voluntary compliance over a period of time. Moreover, the statute quite plainly retains for the polluter the defenses of "the practicality" and "the physical and economic feasibility" of avoiding water degradation.<sup>61</sup>

The Rivers and Harbors Act<sup>62</sup> has been in existence since 1899 and, while rarely used in the past, has recently been applied both on behalf of and against the government.<sup>63</sup> The act prohibits the discharge or deposit of "refuse" matter, other than that flowing from streets and sewers in a liquid state, into or on the bank of any navigable waters of the United States.<sup>64</sup> The "refuse" requirement is satisfied by any product that becomes waste, regardless of its commercial value or the fact that it was "accidentally" rather than "deliberately" discarded.65

Along with the criminal sanctions imposed for violation of the act,66 any person sustaining injury as a result of the violation may maintain an action for damages grounded in either negligence or nuisance.<sup>67</sup> The overall aim of the Federal Pollution Control Act, however, is to bolster state pollution control through technical and financial aid programs, research programs, and encouragement of cooperation between states and between the federal government and the states. Even the enforcement sections provide that state and multistate actions to abate pollution shall be encouraged, and that federal enforcement action shall not displace state and multistate action.<sup>68</sup> Thus, the

59. Id. at §§1160 (d)-(g). 60. Id. at §§1160 (c) (5), (g) (1-2).

61. *Id.* at §§1160 (c) (5), (h). 62. *Id.* at §§401-25. 63. Executive Order No. 11574, 35 Fed. Reg. 19627 (1970) established a formal Refuse Act permit procedure (RAPP), and the Corps of Engineers has promulgated regulations to govern the issuance of such permits. 33 C.F.R. §209.131 (1972). See Hildreth, Federal Control of Water Pollution: The Refuse Act Permit Program, 27 BUSINESS LAWYER 568 (1972). At the present time the permit program has been enjoined by a district court. Kalur v. Resor, 335 F. Supp. 1 (1971).

64.33 U.S.C. §407 (1970).

65. Accidental discharge of valuable aviation gasoline into the St. John's River held to meet "refuse" requirement. United States v. Standard Oil Co., 384 U.S. 224, 229 (1966).

66. Violation of the act is a misdemeanor punishable by a maximum fine of \$2,500 and/or imprisonment for up to one year. Of interest to concerned citizens is the further provision that one-half of the fine levied is to be paid to the person reporting the violation. 33 U.S.C. §411 (1970).

67. Maier v. Publicker Commercial Alcohol Co., 62 F. Supp. 161 (E.D. Pa. 1945), aff'd, 154 F. 2d 1020 (3d Cir. 1946). See also Annot., 16 L. Ed. 2d 1263 (1966).

68.33 U.S.C. §1160 (b) (1970).

state, rather than the federal government, has the primary responsibility for pollution abatement and maintenance of environmental quality.

# State Regulation of Water Quality

Do the weaknesses of current state pollution abatement efforts require abandonment of the area in favor of a federally conceived and directed program? While local remedies are not appropriate for the control of large-scale interstate pollution, the drafters of the Model Water Code feel that they still may be applicable to a broad program of statewide water quality control.

Failure of the states to take affirmative enforcement measures may ultimately lead to further federal intervention. In the final analysis, however, the nature and extent of federal intervention will probably be determined by the success of the state pollution abatement programs. In turn, the likelihood of an effective state response to water pollution will depend on both the authority and financial support the states make available to their pollution control agencies.

In the past there has been a tendency at both state and federal levels to provide the legal authority but not the financial support necessary for effective enforcement, then to blame the administrative agency for its failure to utilize properly the tools it had available, and finally to transfer the enforcement responsibility to a new agency. Increased emphasis, therefore, must be given to adequate financial support for state pollution enforcement agencies.

Furthermore, if the water quality control agency is to function effectively it must proceed after careful statewide planning and not on the case-by-case basis that has characterized past state enforcement action. States must also recognize that water pollution is a consumptive use of water. From this viewpoint, it is appropriate to make one state agency responsible for both types of consumptive uses, since effective pollution control, which makes water available for use or reuse, is often the most effective way of conserving a state's water supplies.

The primary purpose of the Model Water Code, including this chapter, is to provide a model for the development of a comprehensive regulatory program which would take into account the hydrologic interrelationship of all types of water resources in the state, provide greater certainty of water rights than is possible under the common law, and still retain sufficient flexibility through the use of limited permits and the establishment of an administrative agency to make

realistic long-range plans for the conservation and wise use of the state's water resources and the elimination of waste. In the final analysis, however, it must be remembered that the mere passing of laws and transferring of authority will not solve the technical and fiscal problems that must be faced if the state is to achieve a truly successful program of water resources management. State regulation of water quality will be only as effective as the enforcement that the people of the state are willing to support and pay for.

# **§5.01** Definitions

When appearing in this code or in any regulation adopted pursuant thereto, the following words shall mean:

(1) Water quality—Chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which may affect its use.

COMMENTARY. Under the Model Water Code the state and local agency must act not only to control pollution, but also to protect and improve water quality. The definition of water quality in \$5.01 (1) is taken from a California statute,<sup>69</sup> which in turn is based upon language in the definition of "pollution" in the Suggested State Water Pollution Control Act drafted by HEW (hereinafter referred to as the Suggested State Act).<sup>70</sup> Subsection (1) should be read in connection with the term, as "water quality" is used in the definition of pollution in \$5.01 (3).

(2) Impairment of water quality—Any act or condition, including, but not limited to, pollution, which temporarily or permanently reduces, or threatens to reduce, water quality below the level established by the state board pursuant to this code.

COMMENTARY. This subsection requires reference to the definition of water quality in \$5.01 (1). "Water quality" is a broader term than pollution and is inclusive of the latter as defined in \$5.01 (3). Impairment of water quality must be ascertained by reference to the state water quality plan under \$\$5.04 and 5.05.

This definition is original.

70. DIVISION OF WATER SUPPLY & POLLUTION CONTROL, U.S. DEP'T OF HEALTH, EDUCATION & WELFARE, SUGGESTED STATE WATER POLLUTION CON-TROL ACT, REVISED §2 (a) (1965) (hereinafter cited as SUGGESTED STATE ACT).

<sup>69.</sup> CAL. WATER CODE §13050 (g) (West 1971).

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(3) Pollution—Any alteration of water quality, including change of temperature, taste, color, turbidity, or odor of the waters, or the addition of liquid, solid, radioactive, gaseous, or other substances to the waters, or the removal of such substances from the waters, which will render or is likely to render the waters harmful to the public health, safety, or welfare, industrial, agricultural, recreational, or other lawful uses, or to animals, birds, or aquatic life.

COMMENTARY. Under most pollution control statutes the definition of pollution is of critical importance. In many states the regulatory agency cannot act to protect water quality until pollution is imminent or actually occurring. However, pollution is merely one aspect of the broader problem of water quality control. A statute which regulates only pollution will provide very little in the way of comprehensive planning, and will merely direct itself toward reducing existing pollution without effecting any preventive measures. Today, due to the influence of federal law, there is less emphasis on definitions of pollution and increasing reliance on specific water quality standards.<sup>71</sup>

The Suggested State Act has defined pollution very broadly.<sup>72</sup> However, most states have adopted somewhat more limited definitions of pollution<sup>73</sup> or have created exemptions for specific industries.<sup>74</sup> Under the California definition of pollution, for example, there is no "pollution" unless (1) "waters of the state" are affected, (2) the effect is caused by a present discharge of "sewage or industrial waste," and (3) the state waters are not only adversely but also "unreasonably" affected for beneficial uses, excluding, however, consideration of any health hazard.<sup>75</sup> This latter exclusion exists because, under the California law, "pollution" is distinguished from "contamination," which is confined, in state waters, to the creation of an actual health hazard.<sup>76</sup>

The definition of pollution is not of overriding importance in the Model Water Code because the agency's regulatory powers are not

71. J. SAX, WATER LAW PLANNING & POLICY 390 (1968).

72. SUGGESTED STATE ACT, §2 (a) (1965); see also ILL. ANN. STAT. ch. 19, §145.2 (a) (1963).

73. E.g., W. VA. CODE ANN. §20-5A-2 (f) (1970).

74. E.g., MICH. COMP. LAWS ANN. §323.12 (1967); OHIO REV. CODE 6111.04 (B) (Supp. 1970).

75. CAL. WATER CODE §13050 (d) (West 1971). "Sewage" and "industrial waste" are now included in the definition of "waste."

76. B. GINDLER, 3 WATERS AND WATER RIGHTS 228.2 (b) at 222–23 (Clark ed. 1967).

dependent upon a finding of pollution. Pollution is merely one form of water quality impairment, although additional remedies, such as suit for civil damages and, in some cases, summary abatement, are available to the regulatory agency when pollution, as defined in this subsection, is found to exist. It should be noted that, under the Model Water Code, pollution includes *removal* as well as discharge of a substance into waters of the state.

This definition was taken almost directly from a Georgia statute,<sup>77</sup> which in turn was modeled after the Suggested State Act.<sup>78</sup>

# (4) Wastes—Sewage, industrial wastes, and all other wastes, liquid, gaseous, solid, or radioactive, which may affect water quality.

COMMENTARY. This definition, along with the remaining subsections in §5.01, is used in connection with §5.07 concerning construction permits for outlets, disposal systems, and treatment plants. The broader term "substance" is used in connection with discharge permits under §5.08. The term "wastes" includes sewage, industrial wastes, and other wastes which are all defined elsewhere in §5.01. This definition is adopted from the Suggested State Act.<sup>79</sup> However, the reference to pollution is replaced in the Model Water Code by a reference to water quality.

(5) Sewage—Any and all waste substance, liquid or solid, associated with human habitation, or which contains or may be contaminated with human or animal excreta or excrement, offal, or any feculent matter.

COMMENTARY. This definition was taken from the California Water Quality Control Act.<sup>80</sup> The term is also defined in many other state statutes<sup>81</sup> but does not appear in the Suggested State Act.

(6) Industrial waste—Any and all solid, liquid, or gaseous substances, excluding sewage, resulting from any producing,

77. GA. CODE ANN. §17-503 (f) (Supp. 1970).

78. SUGGESTED STATE ACT §2 (a) (1965).

79. *Id.* at §2 (b).

80. CAL. WATER CODE \$13005 (1956), repealed, ch. 482, \$17 (1969) CAL. STAT. 1051. "Sewage" is now included in the definition of "waste." CAL. WATER CODE \$13050 (d) (West 1971).

81. E.g., GA. CODE ANN. §17-503 (g) (Supp. 1970); N.Y. PUBLIC HEALTH LAW §1202 (d) (McKinney 1971); S.C. CODE §70-102 (4) (1962).

manufacturing, or processing operations of whatever nature or from the development of any natural resource.

COMMENTARY. This definition was taken in modified form from California.<sup>82</sup> Although not defined in the Suggested State Act, the term is found in a number of state water pollution control statutes.<sup>83</sup>

(7) Other waste—Garbage, municipal refuse, chemicals, and all other substances, which are not sewage or industrial waste, which may pollute the waters of the state.

COMMENTARY. This term was included as a miscellaneous category to encompass all wastes not included within the definitions of sewage or industrial waste. The definition was taken from the Iowa statute.<sup>84</sup>

(8) Sewage system—Pipelines or conduits, pumping stations, and force mains, and all other structures, devices, appurtenances, and facilities used for conducting wastes to an ultimate point for treatment or disposal.

COMMENTARY. This definition was taken from a provision of the Florida pollution control statute,<sup>85</sup> which in turn was derived from the Suggested State Act.<sup>86</sup>

(9) Treatment works—Any plant or other works used for the purpose of treating, stabilizing, or holding wastes.

COMMENTARY. This term appears in various state statutes,<sup>87</sup> as well as the Suggested State Act.<sup>88</sup>

(10) Disposal system—Any system for disposing of wastes, either by surface or underground methods, including sewage systems, treatment works, disposal wells, and other systems.

82. CAL. WATER CODE §13005 (1956), repealed ch. 482, §17 CAL. STAT. 1051. "Industrial waste" is now included in definition of "waste." CAL. WATER CODE §13050 (d) (West 1971).

83. E.g., see Iowa Code Ann. §455B.2 (2) (Supp. 1971); Mich. Compiled Laws Ann. §323.351 (b) (1967); Tenn. Code Ann. §70–301 (Supp. 1970). 84. Iowa Code Ann. §455B.2 (3) (Supp. 1971).

85. Fla. Stat. §403.031 (8) (1971).

86. SUGGESTED STATE ACT §2 (c) (1965).

87. E.g., FLA. STAT. §403.031 (7) (1971), N.Y. PUBLIC HEALTH LAW §1202 (j) (McKinney 1971).

88. SUGGESTED STATE ACT §2 (d) (1965).

COMMENTARY. This subsection was taken directly from the Suggested State Act.89

(11) Outlet-The terminus of a sewer system, or the point of emergence of any sewage, industrial waste, or other wastes or the effluent therefrom, into the waters of the state,

COMMENTARY. This definition is taken verbatim from a North Carolina statute.90

### **§5.02** Exception of Atmospheric Moisture

No provision of this chapter shall apply to moisture contained in the atmosphere.

COMMENTARY. Section 5.02 has been inserted to negate any control over air pollution, under the provisions of this chapter, that might otherwise be inferred from the inclusion of atmospheric moisture in the broad definition of waters of the state contained in §1.03 (8). In some jurisdictions, the agency responsible for water quality and pollution control is vested with authority for air pollution control as well.<sup>91</sup> However, it was felt that water quality should be regulated by the same agency that has responsibility for consumptive uses of water. A water-oriented agency such as that created under the Model Water Code probably would not be suited to handle air pollution problems. The solution lies in close cooperation between the respective agencies with, perhaps, overall supervision and coordination under a state natural resources board.<sup>92</sup> Section 5.02 of the code is original.

# **§5.03** Additional Powers and Duties of the State Board

In addition to other powers and duties delegated to it under this code, the state board shall:

(1) exercise general supervision over the administration and

89. Id.

90. N.C. GEN. STAT. §143-213 (13) (Supp. 1969). 91. Del. Code Ann. tit. 7, §6002 (Supp. 1970); Minn. Stat. Ann. §§116.01-.15 (Supp. 1971); ORE. REV. STAT. §§449.760-.990 (1970).

92. See, e.g., proposal of Florida Governor's Natural Resources Committee, January 10, 1969. The committee's suggestion that the Air and Water Pollution Control Commission be placed within the Florida Department of Natural Resources has not been followed by the legislature. Instead, the legislature abolished the commission and created the Department of Air and Water Pollution Control, headed by a Pollution Control Board. FLA. STAT. §20.26 (1971). This agency is now called the Department of Pollution Control. Fla. Laws 1971, ch. 71-137.

enforcement of this chapter within the state and all regulations and orders promulgated thereunder, and adopt, modify, repeal, promulgate, and enforce such regulations implementing or effectuating its powers and duties under this code as it may deem necessary;

COMMENTARY. A two-tiered administrative system operates under the Model Water Code. The State Water Resources Board greatly resembles the state agency found in the Model Water Use Act.<sup>93</sup> In addition, under the Model Water Code, the state is divided into a number of water management districts; each will consist of a hydrologic unit such as a river basin and will be administered by a governing board. The state board is concerned with statewide planning and policy making, research, administration of grants, and general supervision and coordination of the activities of the various governing boards.

The governing boards of the water management districts administer the various permit systems established by the code. In addition, the district may assume responsibility for flood control, recreation, and other water management functions.

While actual enforcement of water quality standards normally would be the function of the governing boards of the water management districts, the state board still retains substantial supervisory powers. These powers can be implied from \$1.06 (10) which also gives the state board the authority to review and rescind any regulation of the governing board not in accord with the provisions of the code. The administrative appeal section of this code, \$1.22, also permits the state board to review local action or failure to act, so that, if the governing board fails to enforce water quality standards, the state board may act in its stead. Section 1.22 (3) (c) allows the state board to exercise all of the administrative and enforcement powers delegated to the governing board under this chapter. Thus, the residual enforcement power of the state board applies to the provisions of this chapter. A similar power appears to be possessed by the state water quality board in California.<sup>94</sup>

The California Water Code \$13320 is the source of this subsection.

(2) administer any program of research in water pollution or water quality control, accept funds from the United States or

93. MODEL WATER USE ACT §201 (1958). 94. See Cal. WATER CODE §13320 (West 1971).

any person to that end, and support programs of research by other state agencies, universities, industries, and private persons;

COMMENTARY. One of the primary duties of the state agency should be the administration of a comprehensive research program and a program for the collection of basic data.<sup>95</sup> Under this subsection, the state board is authorized to carry on research in the area of pollution control and water quality. This power is merely another facet of the state board's function as a planning and research agency.

This material was adopted from a provision of the California Water Code.<sup>96</sup>

(3) collect and disseminate information relating to water pollution and the prevention, control, and abatement thereof;

COMMENTARY. This section appears in the Suggested State Act.<sup>97</sup> A similar power is found in the Model Water Use Act.<sup>98</sup>

(4) cooperate with other state or interstate water pollution control agencies in establishing standards, objectives, or criteria for quality of interstate waters originating in or flowing through the state;

COMMENTARY. This power is also included in the Suggested State Act.<sup>99</sup>

(5) administer any program of financial assistance for water pollution or water quality control and accept funds from the United States or any person to that end.

The state board is designated as the water pollution control agency of the state for all purposes stated in the Federal Water Pollution Control Act.

COMMENTARY. No meaningful water quality program can be implemented without a significant increase in funds available to finance construction of treatment and disposal facilities. The New York ex-

95. Note, Water Pollution-State Control Committee, 17 VAND. L. REV. 1364, 1371 (1964).

96. CAL. WATER CODE §13162 (West 1971).

97. Suggested State Act §4 (f) (1965).

98. MODEL WATER USE ACT §605 (c) (1958).

99. SUGGESTED STATE ACT §4 (c) (1965).

perience is illustrative: up to the present time New York's statutory program apparently has been little more effective than the common law approach.<sup>100</sup> There appears to have been no significant improvement in the quality of New York streams, even after the 1949 Water Pollution Control Act. Although one reason has been the lack of coordination and cooperation among the various state agencies, the major factor has been the resistance of affected municipalities. Treatment of pollution can place a substantial financial burden on cities, which would in many instances cause a tax increase of well over 100 per cent. On numerous occasions New York voters have defeated local bond issues earmarked for sewage treatment facilities in that state. It was hoped at first that enforcement could be achieved through voluntary compliance, but no such cooperation has been forthcoming; municipalities and industrial polluters have likewise shown little tendency to cooperate voluntarily. Thus, enforcement could only be had through long and costly court proceedings on a case-by-case basis.101

Financial inability has rendered enforcement difficult against municipalities in Oregon as well.<sup>102</sup> The same or similar problems exist with regard to enforcement of water pollution control statutes against industries, the principal impediment to compliance usually being financial. This situation is, no doubt, the same in most other jurisdictions. Some relief is now available from the federal government in the form of construction grants for municipalities under the Federal Water Pollution Control Act.<sup>103</sup>

Under the Model Water Code the state board would administer financial assistance through a water resources development account pursuant to this subsection. The state board is officially designated as the water pollution control agency of the state in order to qualify for funds under the Federal Water Pollution Control Act of 1965.

Under the Clean Water Restoration Act of 1966,<sup>104</sup> Congress authorized grants of up to 50 per cent to the states to meet the administrative expenses for a planning agency in formulating a comprehensive water quality control and abatement plan for a river basin. These funds are available upon request of the governor of a single

100. Comment, Water Pollution Control in New York, 31 ALBANY L. REV. 50, 60 (1967).

101. Id.

102. Quesseth, Water Pollution Control Laws of Oregon—Problems of Enforcement, 3 WILLAMETTE L. J. 284, 291, 292 (1965).

103.33 U.S.C. §1151 (1970).

104. CLEAN WATER RESTORATION ACT OF 1966 §101, 33 U.S.C. §1151 (1970).

state or a majority of the governors when more than one state is involved. The plan must comply with the applicable water quality standards within the basin and must recommend treatment works and sewer systems that will provide the most effective and economical means of collection, storage, treatment, and purification of wastes for both municipal and industrial systems. The plan must also call for the maintenance and improvement of the water quality standards within the basin and adequate facilities to finance the plan.<sup>105</sup> It is suggested that each of the water management districts could qualify for assistance under this federal legislation.

This section is modeled after the Suggested State Act.<sup>106</sup> Similar provisions, however, are found in virtually every state pollution control statute.

### **§5.04 Water Quality Plan**

(1) The state water quality plan shall consist of the following:

(a) water quality standards for all waters of the state, such standards to consist of receiving water standards and, where applicable, effluent standards;

(b) water quality objectives for planning and operation of water resource development projects for water quality control activities, and for the improvement of existing water quality;

(c) other principles and guidelines deemed essential by the state board for water quality control; and

(d) a program of implementation for those waters which do not presently meet established water quality standards.

COMMENTARY. The state board will develop the state water quality plan. While the governing boards of the various water management districts will work closely with the state board on this project, the ultimate responsibility will rest with the state board. It is essential that some agency exercise responsibility for planning and coordination of a statewide pollution control program. In the past many regulatory agencies failed to recognize the necessity of long-range planning. Nearly all of the statutes empower and encourage the control agencies to engage in planning, but too often the agency has concentrated on day-to-day administration, and planning has been neglected.<sup>107</sup>

105. Edwards, The Legislative Approach to Air and Water Quality, 1 NAT. Res. LAW 58, 64 (1968).

106. SUGGESTED STATE ACT §3 (e) (1965).

107. Hines, supra note 2, at 233.

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The main feature of the state water quality plan is the establishment of water quality standards. This aspect of the plan is hardly new. Under the Suggested State Act, the state pollution control agency may establish such standards, but it is not required to do so.<sup>108</sup> No mandatory guidelines are set out in the Suggested State Act for the board to follow in formulating such standards other than a requirement that they "protect the public health and welfare and the present and prospective future use of such waters." The Federal Water Pollution Control Act of 1965 requires the various states to classify streams and adopt standards for interstate waters sufficient to meet the approval of the Department of the Interior.<sup>109</sup>

Another element of the plan is the establishment of water quality objectives. This concept appears in the California Water Code<sup>110</sup> as part of the state policy for water quality control. As such, it basically represents a planning objective. The drafters of the Model Water Code have added the phrase "and for the improvement of existing water quality." This addition changes somewhat the import of the original; coupled with the fact that it appears in a *plan* rather than a policy, the provision has become a mandatory directive for water quality improvement rather than a mere planning objective.

Subpart (c) confers authority upon the state board to insert whatever additional regulations, information, and directions it feels necessary.<sup>111</sup>

One of the primary benefits of establishing a water quality plan is that it forces the regulatory agency to formulate concrete proposals for administrative action immediately, rather than waiting until a water pollution situation becomes intolerable. Subsection (d) is intended to encourage the state board to set realistic standards since it will have to state in detail how it will achieve the desired water quality at the same time it establishes the particular standards. This program of implementation provides notice to water users and the general public of what measures the board has promised to take and should include financial planning as well as enforcement measures.

A prominent objective in such an enforcement scheme should be the consolidation of small and inefficient treatment plants. The principal weakness of the California program has been its failure to en-

108. SUGGESTED STATE ACT §6 (1965).

109. For a complete discussion of water quality standards see COMMENTARY §5.05 infra.

110. CAL. WATER CODE §13142 (b) (West 1971).

111. E.g., see id. at §13142 (d).

courage groups of communities to consolidate their waste-treatment facilities into one efficient operation. The San Francisco area regional board has a long record of encouraging local governmental agencies to undertake integrated planning for sewerage systems and waste-disposal facilities, yet no master plan has been devised to replace small overladen facilities with large efficient plants to serve wide areas.<sup>112</sup>

Subpart (a) of this section is original; subpart (b) was taken in modified form from the California Water Code;<sup>113</sup> subpart (c) is also derived from California,<sup>114</sup> while subpart (d) is original.

# (2) The state water quality plan shall be periodically reviewed and may be revised.

COMMENTARY. The state water quality plan may, and should, be periodically reviewed in light of changing conditions. In particular, the plan should provide for changing water use patterns as reflected in the state water use plan and the operation of the permit system, since the quality of water available and its time pattern of distribution affect the quantity, quality, and time pattern of wastes which can be discharged into the receiving waters.<sup>115</sup>

This subsection is original.

(3) During the process of formulating or revising the state water quality plan, the state board shall consult with and carefully evaluate the recommendations of concerned federal, state, and local agencies, particularly the governing boards of the various water management districts.

COMMENTARY. The state water quality plan was inspired by a similar approach in the California Water Code, but there is one significant difference: under the Model Water Code, the water quality plan is formulated at the state level rather than by the governing boards of the various water management districts. On the other hand, in California, the regional water quality boards develop local water quality

112. Note, Regional Control of Air and Water Pollution in the San Francisco Bay Area, 55 CALIF. L. REV. 702, 718 (1967).

113. CAL. WATER CODE §13142 (b) (West 1971).

114. Id. at §13142 (d).

115. Bower, Some Physical, Technological, and Economic Characteristics of Water and Water Resources Systems: Implications for Administration, 3 NAT. Res. J. 215, 219 (1963).

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plans and submit them to the state board for approval. It can be argued that the local board is more responsive and better informed about local problems, but under the procedure outlined above, the state board can utilize local knowledge and expertise while retaining the ability to make independent inquiries and judgments. It is hoped that this approach will enable the state board to set standards to reflect local conditions and needs, but avoid undue influence by dominant economic interests and pressure groups, although all affected parties should be consulted at this stage whenever possible.

While the state board has ultimate responsibility for drafting the water quality plan, it is expressly directed to seek the advice and expertise of other federal, state, and local agencies, particularly the governing boards of various water management districts. One important aspect of sound planning is affirmative action to coordinate the pollution control efforts of agencies with common interests. State acts usually authorize participation in cooperative programs, but local agencies have seldom taken the initiative to seek out areas of mutual interest.<sup>116</sup> This subsection requires such action. Portions of this subsection are from the California Water Code.<sup>117</sup>

(4) The state board shall not adopt or modify the state water quality plan or any portion thereof until a public hearing is held. At least ninety (90) days in advance of such hearing the state board shall notify any affected governing boards, and shall give notice of such hearing by publication within the affected region pursuant to section 1.09 of this code.

COMMENTARY. Generally, where decision is required concerning water quality standards in a particular area, hearings are necessary to obtain some sense of the public feeling about the matter and to afford affected parties an opportunity to present their cases.<sup>118</sup> Therefore, in the Model Water Code, a public hearing is provided before adoption of the water quality plan or any portion thereof.

Normally, the state board would adopt portions of the state plan on a regional basis to insure that all affected persons may conveniently attend the hearings. The final decision of the state board, however, would not be subject to challenge unless it was clearly

116. Hines, supra note 2, at 233, 234.

117. CAL. WATER CODE §13144 (West 1971).

118. See Federal Water Pollution Control Administration, U.S. Department of the Interior, Guidelines for Establishing Water Quality Standards for Interstate Waters 8, 9 (1966). unreasonable in light of the evidence presented at such hearings or obtained independently by the board. While each governing board participates in the formulation of portions of the water quality plan pertaining to its water management district as an affected party, it may nevertheless record its opposition to the plan or some provision of it at the public hearings.

This subsection is modeled after a provision of the California Water Code.<sup>119</sup>

### **§5.05** Water Quality Standards

(1) It is recognized that, due to variable factors, no single standard of quality and purity of the waters is applicable to all waters of the state or to different segments of the same waters.

(2) The state board shall group all waters of the state into classes and adopt water quality standards for each class. Such classification shall be made in accordance with considerations of best usage in the interests of the public.

(3) In preparing the classification of waters and the standards of purity and quality above mentioned, the state board shall give consideration to:

(a) the size, depth, surface area covered, volume, direction and rate of flow, stream gradient, and temperature of the water;

(b) the character of the land bordering, overlying, or underlying the waters of the state and its peculiar suitability for particular uses, and with a view to conserving the value of said land, encouraging the most appropriate use of the same for economic, residential, agricultural, industrial, or recreational purposes;

(c) the past, present, and potential uses of the waters for transportation, domestic and industrial consumption, bathing, fishing and fish culture, fire prevention, sewage disposal, industrial and other wastes, and other possible uses; and

(d) the extent of present defilement or fouling of the waters which has already occurred or resulted from past discharge therein.

(4) The water quality plan adopted by the state board shall contain standards of quality and purity for each of the various classes in accordance with the best interests of the public.

(5) In preparing such standards, the state board shall give consideration to:

119. CAL. WATER CODE §13147 (West 1971).

(a) the extent, if any, to which floating solids may be permitted in the waters;

(b) the extent, if any, to which suspended solids, settleable solids, colloids, or a combination of solids with other substances suspended in water may be permitted;

(c) the extent, if any, to which organisms or virus may be permitted in the waters;

(d) the extent of the oxygen demand which may be permitted in the receiving waters;

(e) the extent, if any, to which the temperature of the waters may be altered;

(f) the minimum dissolved oxygen content of the waters that shall be maintained;

(g) the limits of other physical, chemical, biological, or radiological properties that may be necessary for preserving the quality and purity of the waters of the state;

(h) the extent to which any substance must be excluded from the water for the protection and preservation of public health; and

(i) the value of stability and the public's right to rely upon standards as adopted for a reasonable period of time to permit institutions, municipalities, commerce, industries, and others to plan, schedule, finance, and operate improvements in an orderly and practical manner.

COMMENTARY. An extended discussion of these various properties of water may be found in *Waters and Water Rights*<sup>120</sup> and *A Primer on Water Quality*.<sup>121</sup> A modern trend in water resources legislation is the effort to provide for water quality rather than solely to prevent water pollution,<sup>122</sup> and an important aspect of this new approach is the establishment of water quality standards or guidelines for waterbodies. The purpose of such standards is to flesh out the legislature's policies concerning the type of water quality impairment that is deserving of abatement. Quality standards are a form of pollution gauge; they facilitate enforcement and yet are basically preventive in character.

These water quality standards can be divided into two categories.

120. GINDLER, supra note 76, at §201.

121. Swenson and Baldwin, A Primer on Water Quality, 20 U.S. DEPART-MENT OF THE INTERIOR, GEOLOGICAL SURVEY (1965).

122. See R. MARTIN, G. BURKHEAD, J. BURKHEAD, & F. MUNGER, RIVER BASIN ADMINISTRATION AND THE DELAWARE 79, 80 (1960); GINDLER, *supra* note 76, at 7.

One type of standard is concerned with the nature of the effluent discharged into the water. This "effluent standard" is expressed in terms of either strength or amount of the effluent or the degree of treatment required.<sup>123</sup> The second type of standard involves a determination of the quality required for the waters receiving effluent. Under this "stream" or "receiving water" approach, a minimum level of acceptable quality is established for each zone of a stream.<sup>124</sup> Because the individual characteristics of each water area must be considered in the formulation of receiving water standards, they are more difficult to establish than effluent standards.

According to one authority, opponents of water quality standards have argued that, once such standards are adopted, they will create vested rights which cannot later be impaired by alteration of the standards. According to this view, once the state has formulated a regulatory policy and persons have materially changed position in reliance upon it, a later change of standards might amount to an unconstitutional taking of property unless just compensation is provided.<sup>125</sup> Indeed, the existence of substantial injury to persons who have reasonably relied on a former regulation would be significant in determining the reasonableness of the regulation as a means for accomplishing the desired end.

The argument has a number of weaknesses, however. First, if the purpose of the regulation has sufficient social importance to outweigh the interests of the individuals being injured, the regulation may be upheld as reasonable.<sup>126</sup> Since water pollution is a matter of great public concern, this fact should be of considerable importance. Also, under most state pollution statutes, including the Model Water Code, it is difficult to see how anyone could successfully claim detrimental reliance on a water quality standard since changes will seldom be drastic or unexpected. Inherent in the concept of quality standards is the capacity to adapt to changing use requirements.

Nevertheless, some states have rejected the establishment of broad standards in favor of action on a case-by-case basis. Many of those states that are proceeding with the development of standards are doing so in gradual stages. Some have formulated broad minimal

123. E.g., MD. ANN. CODE art. 96 A §23-29 (D) (Supp. 1970); Ohio Rev. Code Ann. §6111.03 (Supp. 1970).

124. Hines, supra note 2, at 225, 226.

125. See Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 413-16 (1922); Dunham, Griggs v. Allegheny County: Thirty Years of Supreme Court Expropriation Law, SUPREME COURT REVIEW 63, 65-71 (1962).

126. See Williamson v. Lee Optical, Inc., 348 U.S. 483 (1955).

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standards applying to all waters while others have adopted an areaby-area approach to the establishment of standards.<sup>127</sup>

The establishment of water quality standards involves a number of difficulties. The state board is directed to consider all relevant physical characteristics of the water resource in setting standards. Since all streamflows vary widely during the seasons of the year, and from year to year, the state board can only look to averages or historic low flows (since pollution problems are usually greatest in time of low flow). In selecting a figure, the agency must choose a period of time over which to measure because the measuring period will have a significant effect on the outcome. Selection of the historic low flow as a measure will result in much of the stream's assimilative capacity being unused. If some common average is chosen, however, the stream would be frequently polluted.<sup>128</sup>

It is difficult to determine the precise standards which should be set for certain pollutants to achieve a desired degree of stream purity. For example, there is often no immediate and dramatic cause and effect relationship between the amount of a pollutant present and the death of fish. Sometimes it is asserted that the state of knowledge concerning factors that influence water quality is not adequate to allow standards to be set intelligently. Although extensive research is greatly needed, it would appear that sufficient information is available to permit creation of workable standards.<sup>129</sup>

Another area of uncertainty is the dilutive and assimilative capacity of the stream itself.<sup>130</sup> In many instances the water quality objectives established for state waters leave available in particular waters an assimilative capacity to dilute and purify waste discharges to some extent. The agency's water quality and pollution control techniques may result in the division of this assimilative capacity among the various waste discharges.<sup>131</sup>

The state board must set standards for floating solids, suspended solids, organisms, oxygen demand, temperature, dissolved oxygen, and other physical, chemical, biological, or radiological properties such as taste, odor, color, pH, and turbidity. The state board may also determine the extent to which any substance should be excluded from receiving waters.

In addition, the state board must determine the procedures to be

127. Hines, supra note 2, at 223.

128. SAX, supra note 71, at 389.

129. Hines, supra note 2, at 225.

130. SAX, supra note 71, at 389.

131. GINDLER, supra note 76, at 230.

followed in establishing water quality standards. No doubt the state board would follow New York's stream classification procedures since much of the text of §5.07 was modeled after the New York statute. New York's water quality control agency follows a four-step procedure in classifying streams, and it is suggested that the state board operating under the proposed model code would classify receiving waters by a similar process.<sup>132</sup> First, a survey is made of the basin to obtain the basic data needed to determine the classes which will be assigned to the various waters within the basin. The second step involves the preparation and publication of a report to serve as a basis for a public hearing before the classifications are adopted. All affected parties are given full opportunity to be heard at these meetings. The third consists of the public hearing itself. Finally, the agency, after making any adjustments it deems proper as a result of the public hearing, adopts the classifications it has made and files them with the Secretary of State.

Subsections (1) through (5) were taken almost verbatim from the New York statutes.

# (6) The state board may impose such effluent standards as it deems necessary to maintain or improve water quality.

COMMENTARY. The state board is permitted to establish effluent standards in addition to receiving water standards, but it is not obliged to do so. Effluent standards are preferred by the interests subject to regulation because they are well defined and usually promote equality of regulation among similar types of waste-creating operations. The precision and simplicity of effluent criteria make establishment and enforcement of statewide water quality standards a feasible administrative undertaking. On the other hand, effluent standards are relatively inflexible and cannot be adapted easily to varying local conditions.<sup>133</sup> Moreover, in setting effluent standards which, taken together, will produce precisely the desired water quality, no room may be left for the entry of new industry or expansion by existing plants.<sup>134</sup>

This subsection of the code is original.

# (7) The state board, by regulation, may modify classifications and upgrade the standards of quality.

132. Note, Particular Problems of Water Pollution under New York and Federal Law, 10 BUFFALO L. REV. 473, 495–96 (1961).

133. Hines, supra note 2, at 226.

134. SAX, supra note 71, at 400.

COMMENTARY. The Model Water Code permits the state board to modify water quality standards. Critics of the standards approach to pollution control have expressed fear that the standards will become permanently fixed at too low a quality level.<sup>135</sup> Experience has shown, however, that state water quality standards can be upgraded if the control agency is committed to such a program.<sup>136</sup>

This provision is original.

# \$5.06 Additional Powers and Duties of the Governing Board

In addition to other powers and duties delegated to them by this code, the governing boards of the water management districts shall:

(1) issue, revoke, modify, or deny, in accordance with the requirements of the state board, permits for the discharge or removal of any substance into the waters of the state and for the installation, modification, or operation of disposal systems or any part thereof;

COMMENTARY. A number of state water quality programs authorize the creation of special agencies to operate on a district or regional basis. California was among the first states to place planning for water pollution control on a regional basis.<sup>137</sup> In California, these regional districts have primary responsibility for pollution control within their territory,<sup>138</sup> while the state agency acts primarily in an overseeing and coordinating capacity. In other states the regional or district organizations serve a supporting function to the state agency.<sup>139</sup>

Presently, Florida authorizes the state pollution control agency to delegate its authority, thereby allowing counties to create local pollution control agencies.<sup>140</sup> Such counties may enact water quality standards similar to or more stringent than the state agency's guidelines.<sup>141</sup> In addition, the counties may establish a system for discharge permits.<sup>142</sup>

135. F. GRAHAM, DISASTER BY DEFAULT: POLITICS AND WATER POLLUTION 189 (1966).

136. Id. at 226.

137. Note, Regional Control of Air and Water Pollution in the San Francisco Bay Area, 55 CALIF. L. REV. 702, 718 (1967).

138. CAL. WATER CODE §13225 (West 1971).

139. See, e.g., MINN. STAT. ANN. 115.19 (1964); N.J. STAT. ANN. 58.12-7 (Supp. 1970); VA. CODE ANN. 21-142 (1), -168, -169 (1960).

140. FLA. STAT. §403.182 (1971).

141. Id. at §403.182 (1) (b) (1971).

142. Id. at §403.182 (2) (1971).

The experience of the Dade County pollution control agency in Florida has shown that there are significant advantages to enforcement at a local rather than a state level. The local unit is closer to the immediate problem and is frequently more responsive than a state agency. Perhaps the most distinct advantage of a local agency is that it overcomes the image of the distant state agency. Permits for construction or operation of businesses or individual facilities are handled from one easily accessible office. Contractors know that permits can be processed in three days rather than the ten days which would be required if they had to be forwarded to the state office. Dade's analysis facilities are local and immediate. Water samples are analyzed locally and each stream and waterbody within the county is tested monthly.<sup>143</sup>

It was felt, however, that enforcement by county agencies would not be as successful as enforcement by more broadly based regional boards created along hydrologically sound lines. The drafters of the code have taken the position that multicounty water management districts are better suited for this responsibility than county boards. The governing board's control over consumptive uses of water will enable it to coordinate pollution control with other water problems within its jurisdiction.

In the proposed Model Water Code, therefore, the state board retains supervisory authority over the operation of the water quality program while administration and enforcement at the regional level is delegated to the governing board.

This subsection is derived from an Arkansas statute;<sup>144</sup> however, a comparable provision also appears in the Suggested State Act.<sup>145</sup>

(2) require the prior submission of plans, specifications, and other data relative to the construction of disposal systems or any part thereof in connection with the issuance of such permits or approvals as are required by this code;

COMMENTARY. This subsection authorizes the governing board to enforce the provisions of §5.07 (2) requiring the prior submission of plans of disposal systems for approval by the board.

This provision is taken from the Suggested State Act.<sup>146</sup>

143. CODE OF METROPOLITAN DADE COUNTY, Ordinance 67–95, §1 (1967). 144. Ark. STAT. ANN. §82–1904 (8) (Supp. 1969). 145. SUGGESTED STATE ACT §4 (i) (1965). 146. *Id.* at §4 (1).

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(3) in accordance with the state water quality plan, issue, modify, or revoke orders (a) prohibiting or abating discharges or removals of various substances into the waters of the state, or (b) requiring the construction of new disposal systems or any parts thereof or the modification, extension, or alteration of existing disposal systems or any parts thereof, or the adoption of other remedial measures to maintain or upgrade water quality;

COMMENTARY. Subsection (a) concerns the governing board's responsibility to control water quality through the issuance of discharge permits. Subsection (b) permits the governing board to impose certain duties, such as construction of a treatment facility, as a condition to granting a discharge permit.

This provision was adopted with some modification from an Arkansas statute.<sup>147</sup> A comparable section is found in the Suggested State Act.<sup>148</sup>

# (4) require proper maintenance and operation of disposal systems;

COMMENTARY. This subsection was taken from section 4 (n) of the Suggested State Act.

# (5) adopt, modify, repeal, and promulgate all necessary regulations for the purpose of controlling the discharge of sewage, other wastes, and other substances from any boat; and

COMMENTARY. This section permits the board to regulate the growing volume of pollution from boats. Several states regulate boat pollution specifically.<sup>149</sup> Since boats are not exempted from any state water pollution statute, the argument can be made that all such statutes are meant to confer jurisdiction over boats as just another source of pollution. For purposes of clarification, however, and to insure that this source of pollution is abated, the code specifically directs the board to regulate discharges from boats into the waters of the state.

147. Ark. Stat. Ann. §82–1904 (6) (Supp. 1969).

149. E.g., GA. CODE ANN. \$17-505 (11) (Supp. 1970); MO. REV. STAT. \$\$306.250-.290 (1959), as amended (Supp. 1971); MD. ANN. CODE art. 27, \$468 (Supp. 1971); NEV. REV. STAT. \$\$488.315-.335 (1968); ORE. REV. STAT. \$\$449.140, .150 (1970); VA. CODE ANN. \$62.1-44.33 (Supp. 1970).

<sup>148.</sup> SUGGESTED STATE ACT §4 (n) (1965).

(6) exercise all incidental powers necessary to carry out the objectives of this code.

COMMENTARY. One such function of the governing board might be to assist individual polluters in planning and constructing treatment facilities. This scientific and engineering advice is especially needed by the small businesses and municipal corporations which are serious polluters but lack the capital and technical knowledge necessary to abate the pollution caused by their activities.<sup>150</sup> This provision is found in the Suggested State Act.<sup>151</sup>

# **§5.07** Permits for New Outlets, Disposal Systems, and Treatment Works

(1) No person shall without having obtained a written permit from the governing board:

(a) begin construction of any new outlet for the discharge of sewage, industrial wastes, or other wastes, or the effluent therefrom, into the waters of the state, including coastal waters;

(b) begin construction of any new disposal system for the discharge of sewage, industrial wastes, or other wastes, or the effluent therefrom, into the water of the state, including coastal waters, or make any change in, addition to, or extension of any existing disposal system or part thereof which would materially alter the method, the volume, or the effect of treating or disposing of the sewage, industrial wastes, or other wastes; or

(c) begin construction of any new treatment work for the treatment of sewage, industrial waste, or other wastes, or the effluent therefrom, into the waters of the state, including coastal waters, or make any change in, addition to, or extension of any existing treatment plant or part thereof which would materially alter the method, volume, or effect of treating said wastes.

(2) No permit for any new outlet or the construction of a new disposal system or the modification or extension of an existing disposal system shall be issued by the governing board until the plans have first been submitted to and approved by it.

COMMENTARY. An earlier section of the Model Water Code defines outlet,<sup>152</sup> disposal system,<sup>153</sup> and treatment works.<sup>154</sup> In order that

150. MURPHY, WATER PURITY 97, 98 (1961).

151. SUGGESTED STATE ACT §4 (0) (1965).

152. MODEL WATER CODE §5.01 (11).

153. Id. at §5.01 (10). 154. Id. at §5.01 (9).

large discharge facilities operate in such a manner as to reduce impairment of water quality to a minimum, it is necessary to insure that they are constructed properly. Therefore, the governing board must issue a construction permit before work may commence on such facilities. It is intended that the governing board not only act as supervisor in this respect, but also cooperate in every way with any party seeking to construct such facilities and make available to such party any information that will assist him in planning and constructing the most efficient facilities possible.

Subsection (1) was modeled after a New York statute.<sup>155</sup> Subsection (2) is original.

### **§5.08** Discharge Permits

(1) (a) No person shall discharge any substance into the waters of the state which may affect the quality of waters of the state without first obtaining a permit from the governing board of the area affected by such discharge.

(b) No person who is a citizen, domiciliary, or political agency or entity of this state shall discharge any substance into waters outside of the boundaries of the state without first obtaining a permit from the governing board of the area affected by such discharge.

(c) The state board may authorize the governing boards to exempt certain types of discharges from the requirements of this subsection if it is clearly established that there will be no significant impairment of water quality from such discharges.

COMMENTARY. This provision requires a discharge permit for virtually any activity that might impair water quality. The term "substance" has been used instead of "waste," to avoid creating an exception regarding discharges of pesticides and herbicides, particularly those intentionally discharged into a stream for a specific purpose.<sup>156</sup> This section covers not only discharges into waters of the state including coastal waters, but also discharges outside the boundaries of the state in cases where the state retains some jurisdiction over the discharger.

Subpart (c) allows the state board to authorize (but not require) the governing boards to exempt certain discharges which are so minimal that no impairment of water quality is likely to result.

155. N.Y. PUBLIC HEALTH LAW §1230 (1) (McKinney 1971). See FLA. STAT. §403.061 (18) (1971).

156. See GINDLER, supra note 76, §228.2 at 228.

Subpart (a) is modeled after a provision in the Model Water Use Act.<sup>157</sup> Subpart (b) is a modification of a section of the California Water Code.<sup>158</sup> Subpart (c) is original.

(2) The permit may be granted only if the governing board determines that such discharge will not lower water quality in the affected water below the standards set for that class of water pursuant to the state water quality plan. Permits may also be denied if the governing board determines that such discharge would not be consistent with water quality improvement objectives established for the affected water pursuant to the state water quality plan.

COMMENTARY. This provision makes the granting of permits subject to conditions necessary for maintenance of water quality standards and other provisions of the state water quality plan. Since compliance with the water quality standards is capable of relatively accurate determination, any questionable action of the governing board can be easily reviewed by the state board or the courts in light of such standards. The governing board may also deny permits for discharges that would not be comparable to water quality *improvement* objectives set out in the state plan. This subsection is original.

(3) The procedure for permit applications shall be governed by the provisions of section 1.19 of this code. All information required by such form must be furnished and, when information filed by any person pursuant to this section is not adequate in the judgment of the governing board, the board may require such person to supply such additional information as it deems necessary.

COMMENTARY. This subsection provides for permit application forms and states that the requisite information must be furnished thereon before the governing board takes action on the application.

Much of the language in the last sentence is taken from the California Water Code;<sup>159</sup> the rest is original.

(4) No discharge into the waters of the state pursuant to the terms of a permit issued under this section shall create a vested

157. MODEL WATER USE ACT §602 (a) (1958). 158. CAL. WATER CODE §13260 (West 1971). 159. *Id.* at §13260 (e). right to continue such discharge. All discharges into waters of the state are privileges, not rights.

COMMENTARY. While every effort should be made to protect the economic security of permit users, permission to discharge under a permit cannot be considered a vested right. There is no such right at common law, and any tendency in that direction would be inimical to the concept of comprehensive planning and development of water resources. This position is expressly stated in this subsection. It also appears in the California Water Quality Control Act.<sup>160</sup> This provision is particularly significant in connection with subsection (5) below.

(5) Permits may be modified, suspended, or revoked by the governing board after a hearing pursuant to section 5.12 of this code:

(a) for any material false statement in the permit application;

(b) for willful or negligent violation of the conditions of the permit;

(c) for refusal to allow inspection of facilities as provided under section 5.10 of this code;

(d) after a determination by the governing board that the water quality of the affected water has fallen below the water quality standards established by the state board pursuant to the water quality plan or any subsequent modification thereof;

(e) in order to protect the public health, safety, or welfare; or

(f) to protect any domestic consumptive uses or water uses exercised pursuant to the provisions of chapter 2 of this code.

(6) Discharge permits shall be issued for a term of ten (10) years. Renewals shall be treated in the same manner as initial applications.

COMMENTARY. Permits may be modified, suspended, or revoked as a punitive measure for violations of the code. However, permits may also be affected by a change in the condition of the water source, the existence of new users, or new provisions in the state water quality plan. This does not mean that, at the whim of the state or governing board, permittees are subject to loss of the right to discharge, but it does indicate that the nature of water resources requires that a

160. Id. at §13263 (g).

continual adjustment of various discharges be made. In particular, these subsections should not be interpreted to give present users an absolute preference over future users on the basis of priority alone. Modification of the discharge permit, particularly when receiving water quality standards are upgraded or new users must be provided for, does not mean that the discharger's operation will be terminated. Rather, modification means that the discharger must take measures to adjust the volume or strength of his effluent. This may indicate that additional treatment will be required. However, the same condition would theoretically obtain under the common law in a reasonable use jurisdiction when a riparian initiated a new use.

These subsections are original.

(7) A person discharging any substance into the waters of the state on the effective date of this code who does not qualify or has been denied a permit under this section may apply to the governing board for a temporary permit. No such temporary permit shall be granted by the governing board unless it affirmatively finds all of the following:

(a) the proposed discharge does not qualify for a permit under this section;

(b) the applicant is constructing, installing, or placing into operation, or has submitted plans and reasonable schedules for the construction, installation, or operation of, an approved pollution abatement facility or alternate waste disposal system which will qualify the applicant for a permit under this section, or that the applicant has a waste for which no feasible and acceptable method of treatment or disposal is known or recognized but he is making a bona fide effort through research and other means to discover and implement such a method;

(c) the denial of a temporary permit would work an extreme hardship upon the applicant;

(d) the granting of a temporary permit will result in substantial public benefit; and

(e) the discharge will not be unreasonably destructive to the quality of the receiving waters.

A temporary permit shall be reviewable annually or within a lesser period of time as the governing board may specify in the temporary permit, and it must be affirmatively shown that all of the requirements for the initial issuance of the temporary permit are still being met by the holder thereof. COMMENTARY. This subsection institutes a dual permit system using the permit and temporary permit concept. At present, thirty-one states employ a unitary permit system, under which the permit holder is allowed to pollute under prescribed conditions.<sup>161</sup> Four states have a unitary permit system under which the discharger may secure a permit only upon proof that there will be no resultant pollution as statutorily defined.<sup>162</sup> Six states statutorily recognize a dual permit system analogous to that in the proposed code.<sup>163</sup>

Subsection (7) is the provision for temporary permits. The intent of the proposed law is to draw a sharp distinction between those activities that are permitted because they do not cause impairment of water quality and those activities that are permitted temporarily and out of extreme necessity even though they cause such a condition. Subsection (7) prohibits the governing board from issuing a temporary permit unless it affirmatively finds each of the five requirements outlined. It is intended that the discharger must affirmatively demonstrate each and every proposition before a temporary permit may be granted. The last sentence of the subsection is original and provides for annual review of the temporary permit. At each annual review, the discharger must affirmatively prove that the same requirements allowing the initial issuance are still being met by him. This section was taken from a Vermont statute.<sup>164</sup>

### **§5.09** Pollution of Underground Waters: Permits

(1) No person shall use any cavity, sink, or driven or drilled well for the purpose of draining any surface water or discharging any sewage, industrial, or other wastes into the underground waters of the state without first obtaining a discharge permit from the governing board under the provisions of section 5.08 of this code.

(2) This section shall not limit the exercise by the state board of health of any powers delegated to it by statute over the underground waters of the state.

161. Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Georgia, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Mississispi, Missouri, Montana, Nebraska, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Virginia, and Wisconsin.

162. Illinois, Massachusetts, New Hampshire, and Washington.

163. Florida, North Carolina, South Carolina, Tennessee, Vermont, and West Virginia.

164. VT. STAT. ANN. tit. 10 §912a (Supp. 1970). See also TENNESSEE WATER QUALITY ACT OF 1971 §7 (a-g) (1 Environmental Rptr. 916:0101, 0104).

COMMENTARY. Water demands are satisfied from both surface and ground water sources. Both of these sources are subject to pollution, but, of the two, ground water pollution is much more difficult to correct.<sup>165</sup> Once a ground water source becomes contaminated, it may remain in that condition for years, whereas surface water sources flush themselves regularly.<sup>166</sup> Since the definition of waters of the state covers ground water, all provisions of chapter 5 are applicable to it. However, since many pollution control statutes exclude or ignore ground water, it was felt that it should be expressly included.

It should be emphasized that salt water intrusion is distinguished from water quality insofar as chapter 5 is concerned. The governing board's powers over salt water intrusion are exercised through \$1.24 which establishes a salt water barrier line and through the various provisions of chapters 2 and 3.

This section is taken, with minor changes, from a Florida statute.<sup>167</sup>

### **§5.10** Inspections

(1) The governing board shall have the power to enter at reasonable times upon any private or public property other than dwelling places for the purpose of inspecting and investigating conditions relating to water quality.

COMMENTARY. This power has already been delegated to the governing board in 1.17 (2). However, subsections (2) and (3) provide some elaboration.

This subsection is a somewhat modified form of the inspection provision in the Suggested State Act.<sup>168</sup>

(2) Such investigation shall include such engineering studies, bacteriological, biological, and chemical analyses of the water, and location and character of the source or sources of contamination as may be necessary.

COMMENTARY. This subsection was taken from an Iowa statute.<sup>169</sup> It indicates the extent to which studies and investigations may be made.

165. MURPHY, supra note 150, at 14, 15.
166. WRIGHT, supra note 1, at 114–55.
167. FLA. STAT. §387.02, .03 (1971).
168. SUGGESTED STATE ACT §9 (a) (1965).
169. IOWA CODE ANN. §455B.12 (Supp. 1971).

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### **PROTECTION OF WATER QUALITY**

(3) The governing board may require the maintenance of records relating to the operation of disposal systems, and any authorized representative of the governing board may examine and copy any such records or memoranda pertaining to the operation of disposal systems. Copies of such records shall be submitted to the state board upon request.

COMMENTARY. This subsection is taken from the Suggested State Act.<sup>170</sup>

### **§5.11 Fees**

The state board may establish fees for the issuance and renewal of any permits established under this chapter. All funds collected under this provision shall be credited to the water development account.

COMMENTARY. Fees for the issuance of discharge permits could be nominal, or they could be such as to resemble an effluent charge that is proportioned to the volume and strength of the effluent discharged. In the latter case, such fees could contribute significantly to the financing of the water quality program.

This section is modeled after a provision of the Model Water Use Act<sup>171</sup> which deals with consumptive use permits.

### **§5.12** Administrative Enforcement

(1) If the governing board has reason to believe that a violalation of any provision of this chapter has occurred, it shall serve written notice upon the violator. The notice shall specify the provision of the code or regulation alleged to be violated, and the facts alleged to constitute a violation thereof, and may include an order that corrective action be taken within a reasonable time.

(2) If, after a hearing under the provisions of section 1.21, the governing board finds that a violation has occurred, it shall affirm or modify its order previously issued, or issue an appropriate order or orders for the prevention, abatement, or control of the condition involved or for the taking of such other corrective action as may be appropriate.

(3) Any order issued under subsection (1) above shall become

170. SUGGESTED STATE ACT §9 (b) (1965). 171. MODEL WATER USE ACT §415 (1958). effective after ten (10) days unless a hearing is requested. However, any order issued after a hearing may prescribe the date by which the violation shall cease by fixing reasonable timetables for necessary action.

(4) If, after a hearing, the governing board finds that no violation is occurring, it shall rescind the order issued under subsection (1) above.

(5) The governing board may enforce its orders by injunction pursuant to the provisions of section 5.14 of this code.

COMMENTARY. Enforcement has consistently been a major weakness of state pollution regulation.<sup>172</sup> The nonenforcement problem is rooted in the essential unwillingness of the control agency to bring the full weight of the enforcement machinery to bear on the polluter.<sup>173</sup> To the largest group of polluters, private industry, pollution control is not "economical" from the standpoint of corporate profit, and industry generally is not concerned with aesthetic and recreational interests.<sup>174</sup> Extreme measures are seldom required against industrial polluters, however, because the threat of adverse publicity is often sufficient to insure compliance. In the recent efforts to abate pollution of the Detroit River in Michigan, involving some controversial proposed orders by the state agency, every polluter ultimately signed a stipulation with the commission and no cases went to final adjudication. This appears to be the general pattern throughout the nation. While there is no single explanation for this pattern, certainly a major reason is the strong desire by those charged with pollution to avoid adverse publicity.175

On the other hand, enforcement against municipal pollution is often more complex. Municipalities have always posed a dilemma in state enforcement of pollution control laws. Minnesota has found a rather drastic solution to the problem. When a municipality fails to comply with pollution abatement orders, state legislation authorizes the control agency to assume the powers of administrative officers of the municipality relating to construction, installation, or operation of treatment facilities.<sup>176</sup> The agency may also compel cooperation between two or more municipalities if such cooperation is determined to be

172. Stein, *supra* note 53, at 406. 173. Hines, *supra* note 2, at 227.

174. MURPHY, supra note 150, at 136.

175. SAX, supra note 71, at 388.

176. MINN. STAT. ANN. §115.48 (Supp. 1971).

necessary.<sup>177</sup> There is no specific provision in the Model Water Code regarding enforcement against cities; since financial problems are usually responsible for noncompliance, it is hoped that the agency will be in a position to offer financial aid for treatment facilities in order to make compliance possible.

The governing board utilizes the same procedures in determining whether a violation of this chapter has occurred as it does in administering other provisions of the code. It should be emphasized that this procedure is the normal one used in all but extremely urgent cases of pollution. The governing board's order must allow a reasonable amount of time for corrective action; however, financial inability is no defense for noncompliance. The order becomes final in ten days unless the defendant requests a hearing. If the governing board affirms its order after the hearing, the polluter will still have a reasonable time to comply. Again, however, financial hardship alone will not normally justify such an extension.

Some of the practical problems of instituting such hearings and enforcing orders will involve the determination of the source and nature of the particular stream or other pollution problem, securing the necessary evidence of pollution, such as chemical analysis of water, and other matters.<sup>178</sup>

This section is adapted with some modification from the notice and hearing provisions of the Florida Air and Water Pollution Control Act.<sup>179</sup>

# **§5.13** Summary Abatement

(1) The governing board may order any person to abate, terminate, modify, or decrease pollution which constitutes, or threatens to become, an immediate and serious hazard to public health, safety, and welfare, or a serious and immediate hazard to fish or wildlife.

COMMENTARY. Summary abatement proceedings may be used to cope with extremely serious cases of water pollution. The governing board under the code, however, is authorized to make use of this remedy in cases of a serious and immediate hazard to fish and wildlife as well. The phrase "serious and immediate" constitutes the standard which

must be applied with this section. "Serious" refers to either irreparable

177. Id. at §115.49. 178. Quesseth, supra note 102, at 291, 292. 179. FLA. STAT. §403.121 (1971).

### COMMENTARY

harm or to very extensive harm. A large fish kill, for example, may be extensive because it causes substantial harm to many species. On the other hand, the total destruction of a rare species may be irreparable without being extensive in relation to the total ecology of the area. Summary abatement would be available in either case. The term "immediate" means that the damage would occur within the ten-day period before an order issued under §5.12 becomes effective.

This subsection is original but bears some resemblance to Model Water Use Act §603 (a) (1958).

(2) Orders issued under this section shall be final and conclusive unless the affected person requests a hearing pursuant to section 1.21 of this code within ten (10) days after receipt of a copy of the order.

COMMENTARY. This subsection was taken from Model Water Use Act §603 (b) (1958).

(3) If a hearing is requested, the orders of the governing board shall not be stayed during pendency of the hearing or any review thereof.

COMMENTARY. This subsection differs somewhat from the Model Water Use Act from which it is derived. Under the Model Water Use Act, the orders of the control agency will be stayed unless the agency determines that a danger to public health or safety exists. This implies that summary abatement is available under the Model Water Use Act in circumstances where this remedy would not lie under the Model Water Code. Under the code, orders of the governing board will not be stayed pending appeal. It is the drafters' belief that summary abatement should only be available in cases of genuine emergency. The fact that the order is appealed will have no effect on the emergency condition itself.

The Model Water Code differs in one material respect from the Model Water Use Act in that, under the latter, no provision is made for the protection of fish and wildlife. Under the Model Water Use Act the agency's orders will not be stayed if "public health and safety may be adversely affected." Under the Model Water Code, however, the agency's orders will not be stayed under any circumstances, including those instances where only fish and wildlife are adversely affected.
This subsection is modeled after Model Water Use Act §603 (c) (1958).

# **§5.14** Injunctions

(1) Whenever it shall appear that any person, as defined in section 1.03 (5) of the code, is causing or threatens to cause an impairment of water quality in violation of any order of the governing board, the governing board may institute proceedings for injunctive relief from the [appropriate] court to prevent the continuance of such action.

(2) In a petition for injunctive relief, any previous findings of the governing board after due notice and hearing shall be primafacie evidence of the fact or facts found therein. The court shall grant the injunction without the necessity of showing a lack of adequate remedy at law upon a showing by the governing board that such person is violating or is about to violate the provisions of this code or is violating or about to violate any order or determination of the governing board with respect to this code.

(3) In such suit, the governing board may obtain injunctions, prohibitory and mandatory, including temporary restraining orders and temporary injunctions as the facts may warrant.

(4) No provision of section 1.22 shall apply to this section.

COMMENTARY. Injunctive relief is the ordinary method of enforcing orders of the governing board if voluntary compliance is not forthcoming, although criminal penalties are also available. The Suggested State Act also provides for injunctive relief as a means of enforcing orders of the regulatory agency,<sup>180</sup> but the state attorney general, rather than the agency itself, must bring the action. The Model Water Use Act has no specific provision for injunctive relief other than a general authorization of the agency to seek judicial enforcement of its orders.<sup>181</sup>

A water user against whom an injunction has been obtained may appeal only through the courts. No provision for such an appeal is specifically made in the code, so the state administrative procedure act would apply. Normally, a water user could appeal an order of the governing board to the state board under \$1.22 of the code. Since an injunction would issue only where the polluter has refused to avail

180. SUGGESTED STATE ACT §10 (1965).

181. MODEL WATER USE ACT §202 (8) (alt. 2) (1958).

### COMMENTARY

himself of the hearing provisions of §5.12 or has refused to comply with a final order of the governing board, no further administrative appeal would lie.

Subsections (1) and (2) were taken from the Suggested State Act.<sup>182</sup> Subsection (3) appears in a section of the Florida statutes concerning the authority of the Division of Interior Resources over oil and gas drilling operations.<sup>183</sup> Subsection (4) is original.

### **§5.15** Civil Penalties

(1) Whoever causes pollution of the waters of the state which results in harm to fish, or fish food, or which results in other damage, is liable to the state for such damages and the reasonable costs and expenses of the state incurred in tracing the source of the discharge and in restoring the waters to their former condition.

(2) Upon the request of the state board or any state agency or the alleged violator, the governing board may consider and assess these damages. If the amount so assessed is not paid within ninety (90) days, the governing board may institute civil action in the [appropriate] court for a judicial determination of liability and damages.

(3) All funds received by the state board pursuant to this section shall be deposited in the water resources development account.

(4) Nothing herein shall give the governing board the right to bring an action on behalf of a private person. Nothing herein shall prohibit the governing board from proceeding forthwith to obtain a judicial determination of the liability and damages.

COMMENTARY. This provision allows the governing board to force polluters to pay the costs of restoring a watercourse to its former state. The governing board may assess damages itself or institute a civil suit for damages. It should be noted that this section does not apply to every impairment of water quality, but only to pollution as defined in §5.01 (3) of the code.

Subsections (1), (2), and (4) are taken from a Florida statute.<sup>184</sup> Subsection (3) is original.

182. SUGGESTED STATE ACT §10 (b) (1965). 183. FLA. STAT. §377.34 (1) (1971). 184. *Id.* at §403.141.

# **§5.16 Local Jurisdiction: Conflicts**

No provision of this chapter or any ruling of the state board or a governing board is a limitation:

(1) on the power of any local governmental agency to adopt and enforce additional regulations, not in conflict therewith, imposing further conditions, restrictions, or limitations with respect to the disposal of waste or any other activity which might impair water quality;

(2) on the power of any state or local governmental agency to declare, prohibit, and abate nuisances;

(3) on the power of any state agency in the enforcement or administration of any provision of law which it is specifically permitted or required to enforce or administer; or

(4) on the right of any person to maintain at any time any appropriate action for relief against pollution under the common law.

COMMENTARY. Those counties and municipalities which seek to enforce stricter controls over water quality are free to do so under the Model Water Code. Several Florida counties presently have pollution control programs and a number of others are planning to establish their own programs. State agencies, such as the state boards of health or fresh water fish and game commissions, may also continue to exercise some powers over water quality. Subsection (4) guarantees the common law remedies against pollution.

This section is taken from the California Water Code.<sup>185</sup>

185. CAL. WATER CODE §13002 (West 1971).

# Chapter 6

# Weather Modification Operations

The unpredictable and unhampered behavior of the elements has been one of the greatest sources of discomfort, disappointment, and destruction in the history of man's existence. From ancient times, control of the weather has been an intriguing challenge to humanity. As the voice of Jehovah scornfully asked Job from the whirlwind, "Canst thou lift up thy voice to the clouds, that abundance of waters may cover thee?"

Even the most primitive people attempted to change existing weather, by using witchcraft, magic, and religious rituals. Methods ranged from the Teutonic custom of pouring water on a naked girl<sup>1</sup> to the tribal rain dances of the American Indian. Sir James Frazer adds one more to the list: "The Chinese are adepts [*sic*] in the art of taking the kingdom of heaven by storm. Thus, when rain is wanted they make a huge dragon of paper or weed to represent the rain-god, and carry it about in procession; but if no rain follows, the mock-dragon is execrated and torn to pieces. At other times they threaten and beat the god if he does not give rain; sometimes they publicly depose him from the rank of deity."<sup>2</sup> It is perhaps anticlimatic to suggest that few of these techniques produce any apparent results.

In view of these unsuccessful attempts, interest in weather modification faded to indifference in the eighteenth century, when the courts ascribed the phenomena of weather to a Providence whose decisions were legally inscrutable. Precipitation fell from the skies in expression of the "act of God."<sup>3</sup>

1. Rainmaking: A Study of Experiments, 1 UNITED NATIONS REV. 18, 19 (1954). See generally D. HALACY, THE WEATHER CHANGERS 1-12, 55-78 (1968). 2. R. FRAZER, THE GOLDEN BOUGH 74 (Abridged ed. 1940).

3. Trent and Mersey Navigation v. Wood, 4 Dougl. 287, 26 E.C.L. 358, 99 Eng. Rep. 884 (1785). For an application of the "Act of God" principle to a hurricane, see Florida Power Corp. v. Tallahassee, 154 Fla. 638, 18 So. 2d 671 (1944). This defense was also raised in a 1954 case, Adams v. California, No. 10112 (Super. Ct. Sutter County, Cal., April 6, 1954); due to the failure of Adams to establish that seeding caused the flooding, the court never reached the issue. See generally Mann, The Yuba City Flood: A Case Study of Weather Modification Litigation, 49 BULL. AM. METEOR. SOC'Y 690 (1968). See also

Interest revived near the end of the nineteenth century, with several semi-scientific proposals to produce or increase rainfall.<sup>4</sup> Two U.S. government patents on methods of rainmaking were issued before the turn of the twentieth century; one of these was based upon the production of carbon dioxide by expanding "liquified carbonic acid gas," and the other upon concussion by the detonation of explosives. Interestingly enough, the long since expired patent based on the production of carbon dioxide by expanding dry ice anticipated the cloud seeders of today.

Even litigation over weather modification is not new. In 1916 the city of San Diego hired Charles Hatfield, who claimed to make rain by use of chemicals. Shortly after Hatfield went to work, San Diego suffered one of its worst deluges in history. Unfortunately the rain washed out a dam, causing loss of life and extensive property damage. Claims totaling almost \$1 million were filed against the city for these injuries. The courts determined that the rain was an act of God, not of Hatfield.<sup>5</sup>

To date there have been reported only eight substantive and three procedural cases involving weather modification operations.<sup>6</sup> One, in

Albrecht v. God & Co., discussed in Hegstad, God Sued in Florida Court!, LIBERTY, May-June 1968, at 19.

4. On the Causes of Rain and the Possibility of Modifying Them by Art, 8 SCIENTIFIC AMERICAN, February 5, 1853, at 168; Harrington, Weather Making, Ancient and Modern, Smithsonian Report for 1894, 6 NATIONAL GEOGRAPHIC MAGAZINE 35-62 (1894). See generally, D. HALACY, supra note 1.

5. Note, Who Owns the Clouds?, 1 STAN. L. REV. 43, 44 (1948); San Diego Union, June 9, 1948, §2, p. 1, col. 4; Illegitimate Rain Creates Legitimate Problems, 1951 INS. L. J. 2, 4.

6. Adams v. California, No. 10112 (Super. Ct. Sutter County, Cal., April 6, 1954); Summerville v. North Platte Valley Weather Control Dist., 170 Neb. 46, 101 N.W. 2d 748 (1960); Slutsky v. City of New York, 197 Misc. 730, 97 N.Y.S. 2d 238 (Sup. Ct. 1950); Samples v. Irving P. Krick, Inc., Civil Nos. 6212, 6223, & 6224 (W.D. Okla. 1954); Pennsylvania Natural Weather Ass'n v. Blue Ridge Weather Modification Ass'n, 44 Pa. D. & C. 2d 749 (1968); Pennsylvania ex rel. Township of Ayr v. Fulk, No. 53 (C.P. Fulton County, Pa., Feb. 28, 1968); Southwest Weather Res., Inc. v. Rounsaville, 320 S.W. 2d 211, and Southwest Weather Res., Inc. v. Duncan, 319 S.W. 2d 940 (Tex. Civ. App. 1958), both aff'd sub nom. Southwest Weather Res., Inc. v. Jones, 160 Tex. 104, 327 S.W. 2d 417 (1959); Auvil Orchard Co. v. Weather Modification, Inc., No. 19268 (Super. Ct. Chelan County, Wash., 1956) [all substantive].

Summerville v. North Platte Valley Weather Control Dist., 171 Neb. 695, 107 N.W. 2d 425 (1961); Avery v. O'Dwyer, 305 N.Y. 658, 112 N.E. 2d 428 (N.Y. Ct. of Appeals 1953); Reeve v. O'Dwyer, 199 Misc. 123, 98 N.Y.S. 2d 452 (Sup. Ct. 1950) [all procedural].

For a description of the facts and holdings of these cases, *see* SPECIAL COM-MISSION ON WEATHER MODIFICATION OF THE NATIONAL SCIENCE FOUNDATION, WEATHER MODIFICATION: LAW, CONTROLS, OPERATIONS 50-66 (Prepared by

Texas, went in favor of those who desired to enjoin the commercial modification operations.<sup>7</sup> Four other cases went in favor of the defendant modifiers; three were decided on the grounds that damage done was not attributable to the attempted modification project.<sup>8</sup> In one New York case, the court permitted modification to continue despite a request for an injunction; however, this involved an attempt by one individual to preclude an operation that potentially could benefit the entire city of New York.<sup>9</sup> In the final two suits, consolidated for judgment in *Pennsylvania Natural Weather Association v. Blue Ridge Weather Modification Association*, the court found that the plaintiffs could not establish more than a possibility of future harm from modification; as such, in the presence of adequate remedies through a new state statute, the court refused to enjoin hail suppression activities that were claimed to have dissipated clouds that would normally bring rain to the area.<sup>10</sup>

Twenty-five years ago General Electric Company scientists Irving Langmuir and Vincent Schaefer modified clouds by "seeding" them with dry ice pellets. Not long afterward Bernard Vonnegut demonstrated that a smoke of silver iodide crystals would provide the same result. This was the beginning of modern American weather and climate modification through cloud seeding.

H. Taubenfeld, Rep. No. NSF 66-7, 1966) [hereinafter cited as Taubenfeld]; Comment, *The Weathermaker and the Law*, 1 S.D. L. REV. 105, 108-10 (1956). For consideration of unreported cases, *see generally* D. HALACY, *supra* note 1, at 68-69, 213-18; B. PARTRIDGE, COUNTRY LAWYER 77-82 (1939); Note, *supra* note 5, at 43-44; a complete digest of these unreported cases appears in Thorton, *Legal and Legislative Developments*, in L. HARTMAN, REPORT ON WEATHER MODIFICATION AND CONTROL, 71, 80-81, S. REP. No. 1139, 89th Cong., 2d Sess. (1966) [hereinafter cited as S. REP. No. 1139].

7. Southwest Weather Res., Inc. v. Rounsaville, 320 S.W. 2d 211, and Southwest Weather Res., Inc. v. Duncan, 319 S.W. 2d 940 (Tex. Civ. App. 1958), both aff'd sub nom. Southwest Weather Res., Inc. v. Jones, 160 Tex. 104, 327 S.W. 2d 417 (1959). This litigation was the subject of several commentaries; see, e.g., Note, Legal Remedies for "Cloud-Seeding" Activities: Nuisance or Trespass?, 1960 DUKE L. J. 305; Note, Torts—Protection of Property—Weather Modification, 14 S.W.L.J. 425 (1960).

8. Samples v. Irving P. Krick, Inc., Civil Nos. 6212, 6223, & 6224 (W.D. Okla. 1954); Adams v. California, No. 10112 (Super. Ct. Sutter County, Cal., April 6, 1954); Auvil Orchard Co. v. Weather Modification, Inc., No. 19268 (Super. Ct. Chelan County, Wash., 1956).

9. Slutsky v. City of New York, 197 Misc. 730, 97 N.Y.S. 2d 238 (Sup. Ct. 1950). This case also received substantial commentary, as it was the first reported weather modification case; see, e.g., Note, Rain and the Law, 39 GEO. L. J. 466 (1951); Comment, Rights of Private Land Owners as Against Artificial Rain Makers, 34 MARQ. L. REV. 262 (1951).

10. See generally Howell, Cloud Seeding and the Law in the Blue Ridge Area, 46 Bull. AM. METEOR. SOC'Y 328 (1965).

The military possibilities of this discovery led the armed services to support, from 1947 to 1952, a broad theoretical, laboratory, and field program in cloud modification known as Project Cirrus. General Electric worked with the federal government on this program. Concerned about possible liability for adverse results and damages, the company attempted to get a "save harmless" clause in its contract. Government officials objected because the clause would have indeterminantly committed the government. General Electric accepted the contract without the clause. Hoping to avoid liability through agency theory, it forbade employees to handle any equipment in outdoor experiments.<sup>11</sup>

The most controversial aspect of this program concerned the seeding of one particular storm. On October 13, 1947, seeding was accomplished on a hurricane located about 300 miles southeast of Cape Hatteras. Within six hours after the seeding, the direction of the storm changed so that the coastal area south of Savannah was hit. Fortunately, the area was lightly populated; yet damages of more than \$5 million were reported. "It is by no means certain that the change in course of this storm was causally related to the seeding equipment. Such storms have been known to change their directions before. Contrary-wise it cannot be said that the change in course was not due to the experimentation—the probability is that it was."<sup>12</sup>

Speculation about the possibilities of cloud seeding with silver iodide or carbon dioxide set off a rash of commercial cloud seeding and led to appointment of the President's Advisory Committee on Weather Control. The committee's report in 1957 presented evidence on the possibility of cloud seeding and other forms of weather modification and recommended that a federal agency be given responsibility by sponsoring research.<sup>13</sup>

The National Science Foundation cautiously responded to the subsequent congressional directive to support research. Congress found

11. Goldston, Legal Entanglements for the Rain-Maker, 54 CASE & COM. No. 1, at 3, 4 (Jan. 1949, condensed from HARV. L. RECORD, March/April 1948); R. HAVENS, HISTORY OF PROJECT CIRRUS (General Electric Research Laboratory, Contract DA-36-039-sc-15345, Report No. RL-756, July 1952).

12. R. HAVENS, *supra* note 11; M. HASSIALIS, J. BERNSTEIN, & L. O'NEILL, SOME MAJOR HAZARDS IN GOVERNMENT SPONSORED SPACE ACTIVITIES 131-32 (1964). See generally A. ROSENTHAL, H. KORN, & S. LUBMAN, CATASTROPHIC ACCIDENTS IN GOVERNMENT PROGRAMS 30-38 (1963); ARTHUR D. LITTLE, INC., ON CREDIBLE CATASTROPHIC EVENTUALITIES IN SELECTED AREAS OF GOV-ERNMENT SPONSORED ACTIVITIES 98-104 (1963).

13. U.S. Advisory Committee on Weather Control, Final Report (1957); National Science Foundation, Weather Modification: Annual Reports (1959–68).

the Bureau of Reclamation not entirely unwilling to experiment in areas where drought and overestimation of available supplies had left the bureau with projects short of water. As soon as the bureau began to show an interest in cloud seeding and accepted its first milliondollar appropriation in 1965 for experiments in the Colorado Basin, the Weather Bureau began to feel it should have a hand in such activities, and the National Science Foundation questioned whether it had gone far enough and fast enough in promoting research in this direction. Such doubts led to the appointment, by the National Science Foundation, of a Special Commission on Weather Modification, and to the organization, by the National Academy of Sciences–National Research Council, of a special panel on the subject.

The two groups submitted reports almost simultaneously in January 1966, providing the basis for wide public and congressional discussion of the next steps in probing ways of changing climate and weather.<sup>14</sup> In anticipation of their reports, the Weather Bureau, newly transformed into the Environmental Science Services Administration, contributed its own estimate of the situation along with recommendations of ways in which its activities should be expanded and enhanced.<sup>15</sup> The three reports may be regarded as complementary. The panel emphasized physical knowledge and possibilities. The commission reviewed the field, but also canvassed social, biological, and economic consequences and suggested implications for legal and administrative action. The Weather Bureau called attention to the relation of weather modification to the operations and research of the bureau, charged with weather prediction and understanding weather systems.

By early 1966, all three groups had found modest possibilities for weather modification over local areas, and saw some prospects in the offing for large-scale modification. They estimated the probability of an enlargement in man's capacity to modify the weather as sufficiently

14. Compare WEATHER AND CLIMATE MODIFICATION: PROBLEMS AND PROS-PECTS (Final Report of the Panel on Weather and Climate Modification to the Committee on Atmospheric Sciences, National Academy of Sciences, National Research Council, No. 1350, 1966) [hereinafter cited as WEATHER AND CLI-MATE MODIFICATION] with SPECIAL COMMISSION ON WEATHER MODIFICATION OF THE NATIONAL SCIENCE FOUNDATION, WEATHER AND CLIMATE MODIFICA-TION (1965) [hereinafter cited as SPECIAL COMMISSION]. For a discussion of the interagency rivalry surrounding the issue of the scope of modification activities, and the agencies to control such modification, see Wollan, Controlling the Potential Hazards of Government-Sponsored Technology, 36 GEO. WASH. L. REV. 1105, 1108–15 (1968).

15. D. GILMAN, J. HIBBS, & P. LASKIN, WEATHER AND CLIMATE MODIFICA-TION (Report to the Chief, U.S. Weather Bureau, United States Dept. of Commerce, 1965).

great to warrant action by public agencies to anticipate likely effects and to organize enlarged scientific research and technical capacity.

The most exciting aspect of weather modification is not the prospect of increased precipitation or a reduction of hail or fog layers. Rather, it is the possibility of changing atmospheric circulation patterns, thus affecting precipitation or temperatures over large regions, and of dealing with catastrophic situations such as hurricane routes and intense rainfall distribution.<sup>16</sup>

The Commission on Weather Modification emphasized the importance of understanding the interrelated systems which would be affected by modifications in the atmospheric system: not only the atmospheric system itself, but biological ecosystems, the hydrologic cycle, and the production and communication systems developed in relation to hydrologic and biological conditions.

Some ecologists, given the complexity and uncertainty of these relationships, counseled no further activity in weather modification until such relationships could be firmly established.<sup>17</sup> Others pressed for more intensive investigations, in the belief that modification would take place whether or not the full consequences were recognized and that the sooner they were anticipated the better.

Although recognizing the potential ecological dangers of weather modification and providing measures to assure that minimal ecological damage would result from any modification operations, the Model Water Code adopts the latter view and encourages the expansion of experimentation and studies of "natural modification" and "modification by accident," as well as the evaluation of all artificial modification attempts.<sup>18</sup>

In developing this chapter of the code, it was felt essential that it be drafted in terms of current and future weather modification technology.<sup>19</sup> Most present state statutes were designed primarily with

16. See generally D. HALACY, supra note 1, at 161-75; MacDonald, How to Wreck the Environment, in UNLESS PEACE COMES 181-96 (N. Clader ed. 1968); Rango, Possible Environmental Response to Weather Modification, in PROCEEDINGS OF SECOND NAT'L CONF. ON WEATHER MODIFICATION 411 (1970); L. BATTAN, HARVESTING THE CLOUDS: ADVANCES IN WEATHER MODIFICATION (1969).

17. Ecological Soc'y of America, Ad Hoc Weather Working Group, Biological Aspects of Weather Modification, 47 BULL. ECOL. Soc'y AM. 39 (1966).

18. This is accomplished through the use of a very broad definition of "weather modification." For an explanation of the definition and consideration of its ramifications, see text and notes at §6.01 (1), *infra*.

19. See D. HALACY, supra note 1; L. BATTAN, supra note 16; BATTAN, A Brief Survey of the Scientific Aspects of Weather Modification, in CONTROLLING THE WEATHER: A STUDY OF LAW AND THE REGULATORY PROCESS 46 (Task Group

"rain making" in mind. This is one of several reasons that they will be of diminishing utility as modification expands to its full potential.

## BASIC LEGAL AND ORGANIZATIONAL PROBLEMS

## The Delegation Problem

Based upon the analysis of threatened challenges to regulatory statutes in other environmental areas, consideration should be given to possible contentions that the code improperly delegates legislative or judicial powers to an executive-administrative agency. There are several provisions that might be challenged as involving improper delegation of legislative or judicial power. These provisions include:

(1) phrasing the powers in 6.03 in terms of what the state board may do, instead of what it shall do;

(2) granting the power to issue licenses and permits to applicants, through interaction of §§6.03 (1), 6.07 (1) and (5), and 6.08 (1) (a), where "public convenience, interest, or necessity will be served thereby";

(3) granting the power in §6.03 (3) to set standards for financial responsibility;

(4) granting the power in 6.03 (4) to "set standards of care to be utilized in the judicial determination of negligence liability..." as provided by 6.16 (3);

(5) granting the power in 6.03 (5) to "make determinations of those operations which constitute extraordinary weather modification operations, and establish criteria for such determinations";

(6) the use of private association (Weather Modification Association or American Meteorological Society) membership as a requirement for the Division Director; and

(7) the use of a private association (Weather Modification Association) in conjunction with license qualifications.

If these were delegations in a congressional act, there is little chance that a court would invalidate them as an improper administrative exercise of a power reserved to Congress. No congressional delegation to a regularly constituted administrative agency has ever been held invalid. Recent opinions of the Supreme Court have generally, as Professor Davis has expressed it, "been reasonably frank in recognizing that law-making power is delegable."<sup>20</sup>

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on the Legal Implications of Weather Modification, of the National Science Foundation, 1970) [hereinafter cited as CONTROLLING THE WEATHER].

<sup>20.1</sup> K. DAVIS, ADMINISTRATIVE LAW TREATISE §2.02 at 78 (1958).

Since the code is intended for state adoption, examination of congressional delegation would not be warranted except for the hope that the "progressive" direction of federal law will be reflected in state court reviews of improper delegation claims. Although various state constitutions contain delegations of legislative power to elective bodies, similar to that of the Federal Constitution, "opinions of state courts still typically cling to the verbiage that legislative power may not be delegated."<sup>21</sup> The majority of state courts might apply the traditional doctrine that the legislature may not delegate the power to enact laws, to declare what the law shall be, or to exercise an unrestricted discretion in applying a law.<sup>22</sup>

The difficulty with strict application of traditional delegation rules is evident in the opinions of the highest courts of Oklahoma and New York. In Associated Industries of Oklahoma v. Industrial Welfare Commission,<sup>23</sup> the Oklahoma court observed: "It is generally said that the power to legislate cannot be delegated. . . . However, any order which 'looks to the future and changes existing conditions by making a new rule to be applied thereafter to all or some part of those subject to its power' is legislative in character. . . . That such orders of legislative character are made by administrative boards with judicial approval and without offense to constitutional inhibitions is well recognized in this as well as other jurisdictions."<sup>24</sup>

In City of Utica v. Water Pollution Control Board,<sup>25</sup> the New York Court of Appeals noted that:

That does not, however, mean that a precise or specific formula must be furnished in a field "where flexibility and the adaptation of the [legislative] policy to infinitely variable conditions constitute the essence of the program." Lichter v. United States, 334 U.S. 742, 785. It is enough if the Legislature lays down "an intelligible principle," specifying the standards or guides in as detailed a fashion as is reasonably practicable in the light of the complexities of the particular area to be regulated. See Lichter v. United States, *supra*; 334 U.S. 742, 785; American Power & Light Co. v. Securities and Exchange

21. Id. at 78, 101-4.

22. See, e.g., State v. Atlantic Coast Line R.R., 56 Fla. 617, 47 So. 969 (1908); Knight and Wall Co. v. Bryant, 178 So. 2d 5 (Fla. 1965), cert. denied, 383 U.S. 958 (1966); Carolina-Virginia Coastal Highway v. Coastal Turnpike Authority, 237 N.C. 52, 74 S.E. 2d 310 (1953).

23. 185 Okla. 177, 90 P. 2d 899 (1939).

24. Id. at 179-80, 90 P. 2d at 903-4.

25. 5 N.Y. 2d 164, 156 N.E. 2d 301, 182 N.Y.S. 2d 584 (1959).

Commission, 329 U.S. 90, 105; Buttfield v. Stranahan, 192 U.S. 470, 496. Obviously, the Legislature cannot "constitutionally [be] required to appraise beforehand the myriad situations to which it wishes a particular policy to be applied and to formulate specific rules for each situation. Necessity therefore fixes a point beyond which it is unreasonable and impracticable to compel [the legislature] to prescribe detailed rules." American Power & Light Co. v. Securities and Exchange Commission, *supra*, 329 U.S. 90, 105. If it were otherwise, the court added, the "legislative process would frequently bog down."<sup>26</sup>

If the courts in those states adopting the code were to rely upon analogy to federal law to the extent that the New York and Oklahoma courts did, all seven incidents of delegation should be sustained. This is clearly the trend of "progressive" state decisions.<sup>27</sup> Professor Davis predicts that these liberal attitudes "will gradually become the prevailing state law of the future."<sup>28</sup>

The choice of phrasing the powers in this section in terms of what the state board may do, rather than what it shall do, reflects the draftsmen's conclusion that the code's statement of purposes, coupled with the requirements for the issuance of a license or permit, serves as the "intelligible principle" specifying the requisite standards to guide the board in the exercise of these powers. This should overcome the typical delegation challenge of insufficient legislative standards. Furthermore, the concept of "flexibility and the adaptation of the [legislative] policy to infinitely variable conditions"<sup>29</sup> compels options in the delegation of powers to a regulatory agency dealing with a field as technologically in flux as is weather modification. A similar permissive authorization characterizes the "general provisions" authority of the Atomic Energy Commission.<sup>30</sup>

Delegation of the right to determine extraordinary weather modification operations in §6.03 should be sustained since the legislature has had a role in establishing the criteria for such determinations.<sup>31</sup> The source of this approach to catastrophic operations was the federal atomic energy statute directed towards similar extraordinary disas-

27. K. DAVIS, supra note 20, at 150.

28. Id. at 151.

29. See Lichter v. United States, 334 U.S. 742 (1947).

30. See 42 U.S.C. §2201 (1970).

31. For a discussion of the mechanism by which the legislature sets the standards and the state board makes the determination, see text and notes at §6.17, *infra*.

<sup>26.</sup> Id. at 169, 156 N.E. 2d at 304, 182 N.Y.S. 2d at 587-88.

ters.<sup>32</sup> These statutory provisions have not been challenged as improper delegations.<sup>33</sup> Professor Cooper in his treatise on state administrative law indicates a trend in some states that would sustain even this delegation:<sup>34</sup> "Courts show a readiness to sustain delegations of virtually unlimited discretionary power if the sphere of regulation is characterized by baffling technicalities so complex that the judges entertain doubts as to the adequacy of judicial knowledge and techniques to deal with the matter effectively, or if they sense a need for experimentation in a new and untrodden field. Thus, looser standards would be tolerated in a statute dealing with the regulation of intrastate transportation of atomic isotopes than in a statute dealing with the licensing of candy stores." Any attempt by a court to explain the process by which artificial nucleation has generated an uncontrollable storm should convince it and other potential critics of the code's delegation provisions that the legislature and the courts are not equipped to establish criteria that have a meaningful relationship to the constantly fluctuating level of modification technology.<sup>35</sup>

Even less likely to be repudiated are the two provisions which seemingly delegate legislative or quasi-legislative functions to private associations. While it is true that a legislature may not delegate legislative functions to private persons, associations, or corporations,<sup>36</sup> it can constitutionally set the qualifications, including even membership in designated private associations, and thereby restrict the choice of potential appointees.<sup>37</sup> Thus the provisions of §6.02, stipulating the

32. See 42 U.S.C. §2014 (j) (1970).

33. The "classic" attack upon the constitutionality of the Price-Anderson Act did not even bother to consider the issue of an unconstitutional delegation. See C. COLLIER, Are the NO Recourse Provisions of the Price-Anderson Act Valid or Unconstitutional? Copies available on request from the National Coal Ass'n, 1130 17th Street, N.W., Washington, D.C. 20036. See generally A. MURPHY, Limitation on Liability for a Nuclear Accident Under the Price-Anderson Act, A.B.A. REP, SECTION OF PUBLIC UTILITY LAW 76 (1966).

34.1 F. COOPER, STATE ADMINISTRATIVE LAW 83 (1965).

35. But see Wormuth, Government and Science, 3 THE CENTER MAGAZINE 41 (March 1970), defending traditional rules of delegation and urging their application to scientific behemoths like the AEC [or the proposed state board]. "The power to make rules should not be entrusted to those who will be governed by those rules." *Id.* at 44.

36. See, e.g., 11 AM. JUR. Constitutional Law §§221, 222 (1962); Fink v. Cole, 302 N.Y. 216, 97 N.E. 2d 873 (N.Y. Ct. of Appeals 1951); Blumenthal v. Board of Med. Examiners, 57 Cal. 2d 228, 368 P. 2d 101, 18 Cal. Rptr. 501 (1962). See generally 1 F. COOPER, supra note 34, at 84–85; Jaffe, Law Making by Private Groups, 51 HARV. L. REV. 201 (1937).

37. State ex rel. Buford v. Daniel, 87 Fla. 270, 99 So. 804 (1924) (dictum). See also In re Campbell, 197 Pa. 581, 47 A. 860 (1901); Schneider v. Sweetland, 214 So. 2d 338 (Fla. 1968). qualifications for the director of the Weather Modification Division of the State Board, do not constitute an invalid delegation. The provision was worded to include qualification for membership, as well as actual membership, to insure that the private associations did not monopolize the choice of the director.38

The provisions of 6.07 (1) regarding certification by the Weather Modification Association might pose a similar challenge. Some states have restricted the right of the legislature to delegate to a private group the right to act in a potentially arbitrary or self-motivated manner to exclude others from their profession.<sup>39</sup> Section 6.07 (1) precludes successful application of the delegation argument by permitting, rather than requiring, a showing of competence "through certification by the Weather Modification Association."40

In conclusion, it must be noted that the doctrine of separation of powers cannot be, and is not, rigid and inflexible. If it were, the modern administrative agency would have been an impossibility under our law.41 The great number, diversity, and complexity of the economic and social problems facing the American public require that administrative agencies be created, and that these agencies be granted powers akin to both legislative and judicial powers. However, to guard against an undue concentration of governmental powers in these administrative agencies, and to guard against an undue invasion of private rights, boundaries must be, and have been, drawn:

1. The delegation of power to an administrative agency must be for a proper public or constitutional purpose, which purpose must be clearly delineated in the enacting legislation. The scope of the code's policy section dealing with weather modification, \$1.02 (5), is such that the purposes of regulation are clearly set out as both public and constitutional.42

2. The activities authorized by the delegation of power must be limited by some broad or general standards or guidelines, except in those instances where the subject matter of regulation is of such complexity that the legislature and the judiciary have inadequate knowl-

38. See Blumenthal v. Board of Med. Examiners, 57 Cal. 2d 228, 231, 368 P. 2d 101, 104, invalidating a statute requiring five years' experience with a dispersing optician for a new license. The court determined the statute "confers upon presently licensed dispensing opticians the unlimited and unguided power to exclude from their profession any or all persons."

39. See Annot., 3 A.L.R. 2d 188 (1949).

40. See discussion and notes at §6.07 (1), infra.

41. The history of the rules of law concerning "separation of powers" is set out in David v. Vesta Co., 45 N.J. 301, 324, 212 A. 2d 345, 357 (1965).

42. See text and notes at §1.02 (4), infra.

edge and techniques to deal with the matter effectively, or where the legislature senses the need for experimentation in a new field.<sup>43</sup> These guidelines usually are delineated in the enacting legislation, but can be implied through the "purposes" of the statute or can be interpolated by the judiciary.<sup>44</sup> As expressed by the Supreme Court of Virginia, the delegation may be in general terms if these terms "get precision from the technical knowledge or sense and experience of men and thereby become reasonably certain."<sup>45</sup>

The code's policy section, when read in conjunction with the corollary requirements in each instance of delegation, should provide sufficient guidelines or standards to sustain the code provisions in an area as complex and changing as weather modification. Although not delineated with the exactitude required under traditional state court tests,<sup>46</sup> the sufficiency of the guidelines is suggested by the apparent lack of any successful challenge to existing modification statutes.<sup>47</sup>

3. The delegation of powers to an administrative agency must insure that adequate safeguards are provided to protect both the public and those private persons directly affected by the agency's actions. The required elements of protection vary from one circumstance to another, but in every instance should include some procedural safeguards, opportunities for judicial checks through review of agency findings and actions, and some legislative supervision of the agency's administration.

Beyond the state administrative procedure acts which would dictate the scope of the state board's administration and decisions,<sup>48</sup> the code in several instances provides safeguards to protect the general public, those who are regulated, and those who are directly affected by the actions of the board. Thus, \$1.09 provides strict procedures for the adoption of regulations, \$1.10 provides procedural safeguards for

43. Cf. 1 F. COOPER, supra note 34, at 62-69, 83, 84.

44. Id.

45. Ours Properties, Inc. v. Ley, 198 Va. 848, 852, 96 S.E. 2d 754, 758 (1957).

46. But see, e.g., Yakus v. United States, 321 U.S. 414 (1944); N.B.C. v. United States, 319 U.S. 190 (1943); New York Central Securities Corp. v. United States, 287 U.S. 12 (1932).

47. The only successful invalidation of a modification statute, on state constitutional grounds, was the Nebraska case of Summerville v. North Platte Valley Weather Control District, 170 Neb. 46, 101 N.W. 2d 748 (1960). This decision invalidated the original statute for failure to permit landowners, other than those persons residing on the land, to note on whether they wished the district to be organized.

48. See Model State Administrative Procedure Act, in L. JAFFE & N. NA-THANSON, ADMINISTRATIVE LAW 919 (1961). enforcement proceedings, \$1.11 guarantees judicial review of regulations and orders of the state board, and \$6.09 (2) insures judicial review of modification license or permit revocations.

# Atmospheric Property Ownership

The code leaves unresolved a classic question in this area: "Who owns the clouds?"<sup>49</sup> More accurately, this question involves claims of weather modifiers to legal rights in atmospheric water resources.

The Arizona Study, acknowledging conflicting and fragmentary case law on the subject,<sup>50</sup> recommended that legislation "define property rights in atmospheric water resources and provide a means for their assertion."<sup>51</sup> Despite this recommendation, the Model Water Code does not establish any theory of atmospheric property ownership. It was felt that proper administration of the modification permit and license requirements of the code would establish the Arizona Study's objectives without the concomitant difficulties evolving from delineating a singular theory of ownership within the context of present modification technology.

Notwithstanding the recommendations of the Arizona Study,<sup>52</sup> it was decided that the issuance of permits by the State Board, coupled with the code's State Water Plan,<sup>53</sup> could adequately allocate rights to atmospheric water resources.

Any analogy to an existing theory of ownership or property rights, though not without some validity, was thought too speculative for statutory adoption. Traditionally, the right of ownership has been based upon occupancy. Occupancy requires (1) an act of control or dominance over the object, and (2) an intention of the occupier to

49. See, Note, Who Owns the Clouds?, 1 STAN. L. REV. 43 (1948); WEATHER MODIFICATION LAW PROJECT STAFF FINAL REPORT FOR THE BUREAU OF RECLA-MATION, OFFICE OF ATMOSPHERIC WATER RESOURCES, UNITED STATES DEPART-MENT OF THE INTERIOR, THE LEGAL IMPLICATIONS OF ATMOSPHERIC WATER RESOURCES 10-30 (R. Davis, Principal Investigator, Contract No. 14-06-D-6224, 1968) [hereinafter cited as ARIZONA STUDY].

50. ARIZONA STUDY 10-30, 122. 51. Id. at 122.

52. "New legislation [on private ownership rights] should be coordinated with pre-existing state water development laws. The mistake of creating a second system of water law to deal with ground waters should not be repeated by adding atmospheric water law as a different legal system from surface and ground water law. This means that the movement toward a permit system should be followed in allocation of atmospheric water rights. State water resources regulatory agencies should allocate private water rights in atmospheric water resources, they should follow a unified approach in dealing with all kinds of waters, and (to the extent possible) that approach should be the prior appropriation method using the permit system." *Id*.

53. See text and comments at §6.08 (1) (f), infra.

appropriate the object to his own use.<sup>54</sup> It is apparent that in the case of the atmosphere an individual cannot "own" it in a possessory sense, for he cannot exercise an act of control or dominance over it. To establish ownership, analogy would have to be drawn to existing theories of ownership. Applications of the *ad coelum*, *feral naturae*, oil and gas law "qualified ownership," and "natural rights" doctrines have all been suggested in the past.<sup>55</sup> Any of these applications through analogy might be acceptable under some circumstances; none of them, however, so pervasively corresponds to present and anticipated modification technology as to warrant reduction to statutory edict.

Moreover, proposed analogies seem more directed to rights in the clouds or moisture; hence, they are directed basically at the "rain-making" aspect of weather modification. Since this area is by no means the sole realm of modification, it was feared that a statute incorporating one or more of these analogies could become unnecessarily restrictive. Because of a lack of "common experience," coupled with the limited precedent, the National Science Foundation and the National Academy of Sciences strongly discouraged statutory inclusion of a particular theory of property rights.<sup>56</sup>

# Appropriate Level of Governmental Regulation

There is substantial dispute as to the appropriate level of government in which to vest primary responsibility for weather modification sponsorship, research, and regulation.<sup>57</sup> While there has been substantial experience with the use of local government and district units in modification, especially in California,<sup>58</sup> the consensus and the position adopted by the Model Water Code is that primary responsibility should be placed at the state, federal, or even international level.<sup>59</sup> The

54. Note, supra note 5, at 47.

55. See generally ARIZONA STUDY 10-30, and articles cited therein.

56. SPECIAL COMMISSION, supra note 14, at 105.

57. See CONTROLLING THE WEATHER, supra note 19.

58. See Craig, Legal Report on Liabilities Involved in Creation of Artificial Rainfall and Powers of the State to Regulate the Same, CAL. WATER RESOURCES BD., BULL. No. 16, WEATHER MODIFICATION OPERATIONS IN CALIFORNIA 213 (1955); Sato, A Report on the Role of Local Government Units in Weather Modification: California Microcosm, in CONTROLLING THE WEATHER, supra note 19, at 325. Local government modification operations in California are permitted by explicit statutory grant, CAL. WATER CODE—APP. §48–9 (13) (West Supp. 1971) (Riverside County Flood Control and Water Conservation District), and CAL. GOV'T CODE §53063 (West 1966). See also 25 OP. ATT'Y GEN. (Cal.) 164 (1951).

59. See, e.g., PROCEEDINGS OF SECOND NAT'L CONF. ON WEATHER MODIFICA-TION (1970); Report of the Task Group, in CONTROLLING THE WEATHER, supra

Nebraska attempt to utilize "weather control districts" has not been successful.<sup>60</sup> Furthermore, such small entities as districts could be hindered by the lack of technological expertise required for effective regulation, coupled with the fact that most modification projects would extend beyond and affect areas outside the jurisdictional limits of district regulation.<sup>61</sup> It is for these reasons that the framers of the code chose to eliminate the governing boards of the water management districts from any role in regulation of, and policy making for, weather modification.<sup>62</sup>

Three factors point toward a larger federal role.<sup>63</sup> First, as the projects expand into the area of climate modification, the international ramifications will become more evident. The existence of national boundaries has already caused limitations of weather modification programs within the Columbia River Basin.<sup>64</sup> Certainly any activities

note 19; SPECIAL COMMISSION, *supra* note 14, at 23-33; ARIZONA STUDY 122-30. This subject of international sponsorship and regulation of weather modification was felt to be outside the scope of the code's consideration. For an examination of the problem and various potential remedies, *see* Taubenfeld, *Weather Modification and Control: Some International Legal Implications*, 55 CALIF. L. REV. 493 (1967); R. Taubenfeld & H. Taubenfeld, The International Implications of Weather Modification Activities (Report to United States State Department, June 1968). (This report will be supplemented by its authors in a study to be released, in conjunction with a grant from Resources for the Future, in 1971.)

60. ARIZONA STUDY 72, n. 11.

61. See Davis, State Regulation of Weather Modification, 12 ARIZ. L. REV. 35, 64-65 (1970).

62. The governing boards still receive notices of operations; see text and notes in §6.10, *infra*. Further, under the authority of §6.03 (8), they can enter into cooperative agreements or contracts with the state board to perform modification for it. Furthermore, to the extent permitted by the powers granted them in other sections of the code, and subjected to probable financial restraints, they could engage in modification operations for themselves and their inhabitants. Cf. 25 OP. ATT'Y GEN. (Cal.) 164 (1951).

63. See generally H. LAMBRIGHT, WEATHER MODIFICATION: THE POLITICS OF AN EMERGENT TECHNOLOGY (1969) (4 vols.); Lambright, Weather Modification: The Politics of an Emergent Technology, in PROCEEDINGS OF SECOND NAT'L CONF. ON WEATHER MODIFICATION 310 (1970); Johnson, Federal Organization for Control of Weather Modification, in CONTROLLING THE WEATHER, supra note 19, at 183. The National Science Foundation no longer is authorized to require modification operation reporting to NSF; formerly it required reporting, 45 C.F.R. §§635.1-7 (1968), issuance authorized by 42 U.S.C. §1862 (1964). The repeal of this authority appears in Act of July 18, 1968, Pub. L. No. 90-407, §11, 82 Stat. 360. The new regulations appear in 33 Fed. Reg. 12654 (1968). The Department of Commerce, in May 1970, recommended that Congress enact legislation to permit the Secretary to compel filing of modification records. Current Developments, ENVIRONMENTAL REPORTER 5:107 (May 29, 1970).

64. Hearings on S. 23 & S. 2916 Before the Comm. on Commerce, 89th Cong.,

having international consequences would be potentially subject to federal control.

Second, while it is true that twenty-one states have enacted legislation regarding weather modification activities,<sup>65</sup> most statutes amount to no more than token regulation, if that. If the states continue minimal regulation coupled with only token financial support of research and experimentation, pressure is going to mount for the federal government to intervene and take over all facets of weather modification regulation.<sup>66</sup>

Third, it has been argued that effective comprehensive state regulation might drive the federal government into a larger role in the field. State licensing requirements in some circumstances could place a serious burden on desirable programs, especially where the experiment crosses state lines.<sup>67</sup> This points to what has been characterized as the strongest reason for federal regulation: most experiments of any size will not be restricted to a single state. Even where the projects are entirely within one state, it seems likely that most medium-sized or

65. ARIZ. REV. STAT. ANN. §§45-2401 to -2407 (1956); CAL. WATER CODE §§400-415 (West 1971); CAL. WATER CODE-APP. §§48-49 (13) (West Supp. 1971); CAL. GOV'T CODE §53063 (West 1966); COLO. REV. STAT. ANN. §§151-1-1 to -12 (1963); CONN. GEN. STAT. ANN. §24-5 to -8 (1960), as amended (Supp. 1971); FLA. STAT. ANN. §§403.281-.411 (1971); HAWAII REV. STAT. §174-5 (8) (1968); IDAHO CODE ANN. §§22-3201 to -3202 (1968); KAN. STAT. ANN. §82a-927 (4) (1969); LA. REV. STAT. ANN. §§37:2201-8 (1964); MD. ANN. CODE art. 66C, §110A (1970); MASS. ANN. LAWS ch. 6 §§17, 72 (1966), as amended (Supp. 1970); MINN. LAWS 1969, ch. 771; MONT. REV. CODE ANN. §§89-310 to -331 (Supp. 1971); NEB. REV. STAT. §§2-2401 to -2449 (1970); NEV. REV. STAT. §§244.190, 544.010-.240 (1967); N.H. REV. STAT. ANN. \$432.1 (1968); N.M. STAT. ANN. \$75–37–1 to -15 (1968); N.Y. GEN. MUNIC. LAW \$119–p (McKinney Supp. 1969); N.D. CENT. CODE \$2–07–01 to -13 (Supp. 1971); N.D. CENT. CODE \$58–03–07 (19) (1960), as amended, (Supp. 1971); OKLA. STAT. ANN. tit. 82, §1078, n. §§2 (1), 2 (V) (1970); ORE. REV. STAT. §§558.010-.990 (1969); PA. STAT. ANN. tit. 3, §§1101-18 (Supp. 1971); S.D. COMPILED LAWS ANN. §§38-9-1 to -24 (1967); S.D. COMPILED LAWS ANN. §10-12-18 (Supp. 1971); Ch. 58, §§14.041-.111 [1971] TEX. LAWS 186-92; UTAH CODE ANN. §§73-15-1 to -2 (1961) 1; WASH. REV. CODE ANN. §§43.37.010-.200 (1970); W. VA. CODE ANN. §§29-2B-1 to -15 (Supp. 1971); WIS. STAT. ANN. §195.40 (1957), as amended, (Supp. 1971); WYO. STAT. ANN. §§9-267 to -276 (1957), as amended, (Supp. 1971).
66. See Taubenfeld, supra note 6; S. REP. No. 1139, supra note 6. See gen-

66. See Taubenfeld, supra note 6; S. REP. No. 1139, supra note 6. See generally Report of the Task Group, in CONTROLLING THE WEATHER, supra note 19. 67. See Taubenfeld, supra note 6, at 13-14; SPECIAL COMMISSION, supra note 14, at 109-12.

<sup>1</sup>st & 2d Sess., pt. 2, at 321, 405 (1966) (testimony of Dr. Kirk). See generally Anderson, Towards Greater Control: High Risks, High Stakes, in SCIENCE AND RESOURCES: PROSPECTS AND IMPLICATIONS OF TECHNOLOGICAL ADVANCE 54, 58-59 (H. Jarrett ed. 1959).

larger projects would have appreciable effects extending beyond the boundaries of that particular state.<sup>68</sup>

Presuming *arguendo* some federal regulatory intervention, the question arises of the constitutional bases for federal and state regulatory legislation. Although the precise question has never been ruled on by any court, it is clear that the federal government has constitutional power to regulate any person or entity engaging in activities designed to modify the weather. The principal constitutional bases for federal regulation of such activities are the commerce<sup>69</sup> and war powers.<sup>70</sup> The modification of weather by man would have substantial effects upon interstate commerce and national defense.<sup>71</sup>

Since the federal government has the power under the commerce clause to regulate intrastate commerce where it affects interstate commerce, it can occupy all or any part of the regulatory field, both interstate and intrastate, and thus exclude the states if it chooses.<sup>72</sup> Total pre-emption would probably receive limited political support.<sup>73</sup> Furthermore, the federal government will probably not be held to occupy any portion of the regulatory arena until it has been judicially established that weather modification is a national problem requiring a single, unified regulatory plan,<sup>74</sup> or until Congress goes beyond studies, hearings, and limited experimental proprietorships.

The police power of the states and regulatory legislation enacted pursuant to it will be effective until weather modification either (1) becomes a problem of national magnitude necessitating uniform federal treatment, (2) the Congress has broken its silence regarding federal regulation, or (3) federal regulatory authority is required to implement or protect the integrity of federal research, experimentation, and evaluation programs. Except for congressional studies and limited

68. "Cloud systems recognize no state boundaries. Storms skip willy-nilly from state to state. Precipitation and runoff ignore political boundaries. The consequence is that regulation by individual jurisdictions can only begin to cope with problems which are interstate in character." Davis, *supra* note 61.

69. U.S. CONST. Art. 1 §8, cl. 3.

70. U.S. CONST. Art. 1 §8. See also United States v. Curtiss-Wright Corp., 299 U.S. 304, 318 (1936).

71. The leading cases are U.S. v. Darby, 312 U.S. 100 (1941) and Wickard v. Philburn, 317 U.S. 111 (1942). For an extensive discussion of the applicability of the interstate commerce power to the field of federal regulation of rainmaking, see Note, Artificial Rainmaking, 1 STAN. L. REV. 508 (1949). This material is supplemented by ARIZONA STUDY 99–102. See also supra, note 63 for a consideration of the current scope of exercised federal power.

72. International Shoe Co. v. Pinkus, 278 U.S. 261 (1928).

73. Davis, supra note 61, at 65. See also CONTROLLING THE WEATHER, supra note 19.

74. See Cooley v. Board of Wardens, 12 How. 299 (U.S. 1851).

proprietorship of experimental and research activities, the states now dominate modification regulation.<sup>75</sup>

If and when Congress enacts regulatory legislation, the issue of whether the federal regulations are fully exclusive, partially exclusive, or merely concurrent with those of the states will be a matter of statutory interpretation for the courts.<sup>76</sup> Any state regulation found to conflict with any federal regulation enacted in the future will likely be found to be an unconstitutional interference with federal control and a burden on interstate commerce.<sup>77</sup> State enactment and administration of regulations in the field, prior to the enactment of any federal regulatory legislation, cannot exclude future federal regulation.<sup>78</sup>

But if not otherwise precluded, the states under their residual powers could presumably continue to operate in the field. While they would be restricted to activity of an intrastate character, they still would have limited jurisdiction for small-scale projects.

For these reasons the framers of the code believed it worthwhile to include an optional chapter providing for state regulation and sponsorship of weather modification.

### 6.01 Definitions

When appearing in this chapter or in any rule, order, or regulation adopted pursuant thereto, the following words shall mean:

(1) Weather modification—Initiating, changing, or controlling, or attempting to initiate, change, or control, the composition, behavior, or dynamics of the atmosphere.

COMMENTARY. This definition establishes the range of activities encompassed by the term "weather modification." Both present and anticipated future methods of climatic and atmospheric alteration are included.

The Weather Modification Association (WMA) definition was combined with elements of those of Nebraska, South Dakota, and North Dakota<sup>79</sup> to produce this meaning. The definition was expanded by

75. See supra note 63.

76. See Southern Pacific Co. v. Arizona, 325 U.S. 761 (1945).

77. Cloverleaf Butter Co. v. Paterson, 315 U.S. 148 (1942).

78. U.S. v. Wrightwood Dairy Co., 315 U.S. 110 (1942).

79. See NEB. REV. STAT. §2-2402 (4) (1943), as amended (1970 Reissue); S.D. COMPILED LAWS ANN. §38-9-1 (1) (1967): "Initiating, changing or controlling the course or effects of the forces, measures, and other factors constituting weather phenomena, including temperature, wind direction and velocity, and the inducing, increasing, decreasing, and prevention, by artificial methods, of precipitation in the form of rain, snow, hail, sleet, mist or fog"; and N.D.

inclusion of "attempting to initiate, change, or control," language drawn from the Washington and Pennsylvania statutes.<sup>80</sup> This was done to insure that the definition applied to attempts both successful and unsuccessful; the WMA proposal and North Dakota, South Dakota, and Nebraska acts would seem not to apply to instances where modification operations were initiated, but did not succeed.

Consideration was given to limiting the definition to instances of change or control "which are artificially and intentionally induced." The WMA proposal suggested such a restriction;<sup>81</sup> the Washington and Pennsylvania statutes only apply the term to changes or controls "by artificial methods."<sup>82</sup> However, it was felt that little could be gained by such limitation. Exemption from regulation already is authorized under §6.06 for activities (such as industrial emissions) engaged in for purposes other than modifying the weather. Furthermore, limitation of the term to regulation "by artificial methods" might result in exemption from regulation through a claim that the modifier was "using natural methods"; at best, such contentions could develop into prolonged negotiation and potential litigation.

Also rejected was any definition based upon the *form* of modification, as in the Louisiana, Wyoming,<sup>83</sup> and Massachusetts<sup>84</sup> statutes, which consider modification to be alteration by "chemical, mechanical,

CENT. CODE 2-07-02 (1) (Supp. 1971): "the control, alteration, amelioration of weather elements including man-caused changes in the natural precipitation process, hail suppression or modification and alteration of other weather phenomena including temperature, wind direction and velocity, and the initiating, increasing, decreasing and otherwise modifying by artificial methods of precipitation in the form of rain, snow, hail, mist or fog through cloud seeding, electrification or by other means to provide immediate practical benefits." *Cf.* Davis, *supra* note 61, at 35, n. 2.

80. PA. STAT. tit. 3, §1102 (6) (Supp. 1971); Ch. 8, §43.37.010 [1965] WASH. LAWS 604, as amended, WASH. REV. CODE ANN. §§43.27A.080, .180 (1970): "Changing or controlling, or attempting to change or control, by artificial methods, the natural development of atmospheric cloud forms or precipitation forms which occur in the troposphere."

81. WEATHER MODIFICATION ASSOCIATION, ELEMENTS OF A MODEL LAW FOR REGULATION OF WEATHER MODIFICATION, No. 2 (1969) [hereinafter cited as WMA No.\_\_\_].

82. PA. STAT. tit. 3, §1102 (6) (Supp. 1971); Ch. 8, §43.37.010 [1965] WASH. LAWS 604, as amended, WASH. REV. CODE ANN. §§43.27A.080 and .180 (1970). See also MONT. REV. CODE ANN. §89–310 (Supp. 1971); NEV. REV. STAT. §544.070 (4) (1963); Ch. 58, §14.002 (2) [1971] Tex. Laws 186; W. VA. CODE ANN. §29–2B–2 (f) (Supp. 1971).

83. LA. REV. STAT. ANN. §37:2202 (1964); WYO. STAT. ANN. §9-269 (1957): "Changing or controlling weather phenomena by *chemical, mechanical* or *physical* means."

84. Mass. GEN. Laws ANN. ch. 6, §72 (1965): "[A]lteration or attempted alteration of natural weather phenomena by human or artificial means. . . ."

physical, human or artificial means." It was felt that the process of meteorologic alteration, rather than the method effecting such process, would be determinative of the definition.

The scope of the definition reflects the expansive focus of the code. Definitions such as Montana's and Pennsylvania's could be potentially interpreted to restrict the term to forms of precipitation instigated through "cloud seeding." Strict delineation of the forms of precipitation, rather than the use of "precipitation forms which occur in the troposphere," should enable the statute to be more easily comprehended and applied. The use of the troposphere limitation might have hindered future regulation if and when successful modification relied upon land or sea level processes, or upon techniques carried out in the upper atmosphere beyond the troposphere. This would be most evident in any system of large-scale climatic alteration. Among the techniques suggested are the application of atomic energy, modification capacity of portions of the earth's surface, artificial ground-level heating, and utilization of ultrasonic vibrations.<sup>85</sup>

Manifest in the inclusion of *any* separate definition of "weather modification" was a rejection of the current Florida policy of "disguising" the term's meaning in the section of the statute prescribing modification without a license.<sup>86</sup> The inclusion of separate definitions reflects the preferred policy in contemporary statutory drafting. Eight states having weather modification statutes do not define the term.<sup>87</sup>

(2) Experimentation and research—Theoretical analysis and exploration, and the extension of investigative findings and theories of a scientific or technical nature into practical application for demonstrative purposes, including, but not restricted to, the production and testing of models, devices, equipment, materials, and processes.

COMMENTARY. This definition evolved from the term as it appears in the Pennsylvania, Nevada, West Virginia, Texas, and Washington

86. FLA. STAT. §403.301 (1971). See also CAL. WATER CODE §402 (West 1971); ORE. REV. STAT. §558.030 (1969); WIS. STAT. ANN. §195.40 (1957), as amended, (Supp. 1971).

87. Arizona, Colorado, Connecticut, Idaho, Maryland, New Hampshire, New Mexico, Utah.

<sup>85.</sup> See, e.g., SPECIAL COMMISSION, supra note 14, at 56-58 (1966); abstract of Soviet article in 28 BULL. AM. METEOROLOGICAL SOC'Y 432 (1947); D. HAL-ACY, supra note 1, at 153-75.

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statutes.<sup>88</sup> In seventeen states the term is not defined separately. For reasons of statutory interpretation, it was desirable to alter the Texas definition through insertion of "but not restricted to" language. The range (from models to processes) appeared to cover the entire focus of current modification experimentation, but in the absence of the additional language, operation of the *expressio unius est exclusio alterius* rule could exclude future forms of research. While the courts have often been willing to disregard this rule in the face of contrary legislative intentions,<sup>89</sup> there seemed little reason to risk future litigation.

The Texas provision was preferred to the almost identical South Dakota and Nebraska terms<sup>90</sup> because of a slight (and perhaps unintended) difference in meaning. Texas refers to "production and testing of *models, devices,* equipment," whereas South Dakota refers to "experimental producing and testing of *model devices,* equipment" (emphasis added). Usually the difference between "models" and "model devices" would not be worth noting. But in the weather modification field, computer simulation studies of hurricane development, tornado evolution, and climate dynamics have converted "model" into a "term of art."<sup>91</sup>

The definition of experimentation and research was essential to the multiple focus of state responsibility implied by the entire statute. Where in later sections the term is used to indicate areas of state waiver of sovereign immunity and indemnification, it was intended that the state support apply both to theoretical research *and* the practical applications which stem from that research. The duality of this definition insures that state support is available in both areas.

(3) Operation—The performance of weather modification activities entered into for the purpose of producing, or attempting to produce, a certain modifying effect within one geographical area over one continuing time interval.

88. NEV. REV. STAT. §544.070 (3) (1967); PA. STAT. tit. 3, §1102 (5) (Supp. 1971); Ch. 58, §14.002 (4) [1971] Tex. Laws 186; WASH. REV. CODE §43.37.010 (3) (1970); W. VA. CODE ANN. §29–2B–2 (e) (Supp. 1971).

89. See, e.g., Springer v. Government of Philippine Islands, 277 U.S. 189 (1928).

90. NEB. REV. STAT. §2–2402 (3) (1943), as amended, (1970 Reissue); S.D. COMPILED LAWS ANN. §38–9–1 (2) (1967).

91. See, e.g., SPECIAL COMMISSION, supra note 14, at 71-79; Weinstein, Davis, & Hozaki, Cloud Dynamics and Precipitation Model, Research Report 11, in METEOROLOGY RESEARCH, INC., ARIZONA WEATHER MODIFICATION PROGRAM (1967); NATIONAL SCIENCE FOUNDATION, WEATHER MODIFICATION: EIGHTH ANNUAL REPORT 24 (1966).

COMMENTARY. This definition permits the state to regulate modification activities in a coherent yet exacting fashion. Such a definition is essential to the duality of state regulation: long-term regulation of the modifier through licensing, and short-term regulation of the modifier's activities through the granting of permits. Through such a definition, activities relating to a single objective—e.g., fog dispersal, rain intensification, or hurricane abatement—are classified in terms of that objective.

Twenty-one states do not now define this term separately.<sup>92</sup> This definition evolved from modifications of the Montana provision and the WMA proposal.<sup>93</sup> Both provisions restrict their definitions to activities in a single geographical area over a continuing time interval of one year or less. The "single geographical area" concept was retained. It was felt that this limitation was consistent with the idea of unity within a project. Moreover, the scope of the term was flexible enough that the state need not be overburdened in its regulation. In theory, the "one geographical area," in a large-scale project, might encompass the entire state.<sup>94</sup> If the definition has been restricted to a *specific* geographic entity—e.g., a county or a water management district—a single modification project probably would have necessitated a multiplicity of permits. Such duplication has never been conducive to effective regulation.

A similar desire to contribute to efficient administration and regulation precluded the "one year" stipulation found in some definitions. Although most projects would not extend beyond a year, there appeared to be little utility in requiring a new permit for those few that did. Moreover, experimental projects like the hurricane seeding "Storm Fury" operations often have extended over several hurricane seasons.<sup>95</sup>

92. Arizona, California, Colorado, Connecticut, Florida, Idaho, Louisiana, Maryland, Massachusetts, Minnesota, Nebraska, New Hampshire, New Mexico, New York, North Dakota, Oregon, South Dakota, Utah, Washington, Wisconsin, Wyoming.

93. See WMA No. 10; MONT. REV. CODES ANN. §89-319 (Supp. 1971).

94. This suggestion is not intended to deny the jurisdictional and constitutional questions inherent in any situation where one state attempts to regulate a matter which necessarily would affect other states. Compare COLO. REV. STAT. ANN. §151-1-11 (1963) with N.M. STAT. ANN. §75-37-12 (1968).

95. This example disregards the probability that the federal sponsors of "Stormfury" would not have to comply with state permit requirements. See Ohio v. Thomas, 173 U.S. 276 (1899) (state cannot require administrator of national soldiers' home to comply with state statutory prohibition of service of margarine); Arizona v. California, 283 U.S. 423 (1931) (Secretary of the Interior, while constructing Hoover Dam, need not submit plans to state administrative official as required by state law).

Also rejected, for similar reasons of administrative efficiency, was that approach taken by four states which provides an alternative definition for "modification pursuant to a single contract."<sup>96</sup> Although most operations are conducted pursuant to a contract, it was felt that there was no rational basis for separate classifications.

# **§6.02** Weather Modification Division: Selection of Director

The Weather Modification Division of the Water Resources Board shall be headed by a director who is a member of, or qualified for professional membership in, the American Meteorological Society or the Weather Modification Association, or who has at least two years' experience in the field of weather modification. First preference in the selection of the director shall be given to individuals possessing both membership and experience qualifications.

COMMENTARY. This subsection expresses the need for a qualified individual to advise the state board and to direct its weather modification operations.<sup>97</sup> The decision was made to state in specific terms the desired qualifications for such a position. The Arizona study and the WMA statement expressly indicate the desire for stipulated professional qualifications for modifiers;<sup>98</sup> neither study, however, appears to have considered the question of qualifications for the board and its directors. The NSF survey tabulation did not delineate differing state treatments of this matter.<sup>99</sup>

The code adopts the majority practice of placing weather modification responsibility within a more comprehensive board or department. Nineteen states have adopted this position. Seven states now place this responsibility within a natural resources or water resources board or department.<sup>100</sup> Six states assign this responsibility to the Department

96. NEV. REV. STAT. §544.070 (2) (1968); PA. STAT. tit. 3, §1102 (3) (Supp. 1971); Ch. 58, §14.002 (3) [1971] Tex. Laws 186; W. VA. CODE ANN. §29-2B-2 (c) (Supp. 1971): "[T]he performance of weather modification and control activities pursuant to a single contract entered into for the purpose of producing, or attempting to produce, a certain modifying effect within one geographical area over one continuing time interval not exceeding one year, or if the performance of weather modification and control activities is to be undertaken individually or jointly by a person. . . ."

97. For consideration of the internal structure of the state board, and of its authority to designate the Weather Modification Division Director, see text and notes at \$1.05 (8), supra.

98. WMA No. 6; Arizona Study 123, 125, n. 7.

99. See Taubenfeld, supra note 6, at 68-71.

100. California, Colorado, Florida, Montana, Nevada, Texas, Washington.

of Agriculture,<sup>101</sup> and six to other miscellaneous departments or commissions.102

Placing this responsibility within a more comprehensive department is not only the prevalent view; it also reflects the determination that regulation of atmospheric water resource rights should be both consistent and coordinated with all state water development laws.<sup>103</sup> Such a method, however, is not the sole possibility for state involvement in weather modification. Connecticut, Massachusetts, and Wyoming have weather control or modification boards.<sup>104</sup> Colorado and Washington formerly had such boards.<sup>105</sup> Nebraska and South Dakota preserve separate commissions to determine modification policy; in these two states the Department of Agriculture retains the responsibility for administration and enforcement.<sup>106</sup> Administration, but not enforcement, is the responsibility of the New Mexico Weather Control and Cloud Modification Commission.<sup>107</sup> Pennsylvania utilizes a separate Weather Modification Board to advise the Department of Agriculture.<sup>108</sup> In the other seven states with statutes concerning weather modification, no commission, board, or department is specified.<sup>109</sup>

The qualification requirements focus upon professional membership and experience in weather modification. Connecticut is the only state now using such a professional membership test to determine board qualification.<sup>110</sup> Both the American Meteorological Society and the Weather Modification Association utilize membership requirements that should insure the director's cognizance of the technical aspects

102. Arizona, New Mexico, North Dakota, Utah, West Virginia, Wisconsin. 103. See Pierce, Legal Aspects of Weather Modification-Snowpack Augmentation in Wyoming, 2 LAND & WATER L. REV. 273 (1967); ARIZONA STUDY 1-9, 122; Hearings on Progress in Weather Modification Before Subcomm. on Water and Power Resources of the Senate Comm. on Interior and Insular Affairs, 90th Cong., 1st Sess. (1967).

104. CONN. GEN. STAT. ANN. §24-5 (1960); MASS. ANN. LAWS ch. 6, §72 (1966), as amended, (Supp. 1969); WYO. STAT. ANN. §9-268 (1957), as amended, (Supp. 1969).

105. Ch. 295, §3 [1951] COLO. LAWS 833, COLO. REV. STAT. §150-1-3 (1953), repealed in 1962; Ch. 8 §43.37.020 [1965] Wash. Laws 604-5, repealed in 1967, WASH. REV. CODE ANN. §43.27A.180 (1970).

106. NEB. REV. STAT. §2-2403 (1962), as amended, (Supp. 1967); S.D. Com-PILED LAWS ANN. §38-9-22 (1967).

107. N.M. STAT. ANN. §75-37-13 (1968).

108. PA. STAT. ANN. tit. 3, §1103 (Supp. 1971). 109. Hawaii, Kansas, Maryland, Minnesota, New Hampshire, New York, Oklahoma.

110. CONN. GEN. STAT. ANN. §24-5 (1960). See also WASH. REV. CODE ANN. §43.37.020 (1) (1970).

<sup>101.</sup> Idaho, Louisiana, Nebraska, Oregon, Pennsylvania, South Dakota.

of modification.<sup>111</sup> This technical competence, when coupled with the broader requirements for the individual board members,<sup>112</sup> should insure that the code effects a weather modification policy in accord with all spectrums of the public interest.

The American public and American politicians have usually held science and technology in high regard. This admiration, however, cannot be permitted to lead those concerned with making policy decisions to think only in terms of technology. Weather modification proposals should be considered by those who also deal with other kinds of policies which affect the quality of the environment. In this way, alternative strategies, some of which may not be technological in character, can be carefully examined and evaluated. Failure to consider nontechnological adjustments to weather modification and emphasis on technological solutions alone could lead to a waste of resources and investments or practices that are uneconomical or undesirable in the long run, or even adverse social and political alterations.<sup>113</sup> Because of these generalized criteria for board membership, it was felt neither necessary nor desirable to restrict the directorship to an individual holding another public office<sup>114</sup> or to a representative of a specified geographic area.<sup>115</sup>

It was realized that most state officials now involved in modification operations could not meet both the membership and experience requirements; in fact, the *total* Weather Modification Association individual membership, as of March 1969, was only 96.<sup>116</sup> For this reason, two options are available in the selection of the director: Weather Modification Association *or* American Meteorological Society membership, and selection based upon the individual's professional membership *or* his weather modification experience.

# \$6.03 Weather Modification: Powers and Duties of the State Board

111. Cf. Williams, Professional Standards in Weather Modification, 1 WMA 33 (1969).

112. See text and commentary on §1.05 (2), supra.

113. See Wormuth, Government and Science, 3 CENTER MAGAZINE 41 (March 1970); Potter, Pollution and the Public, 3 CENTER MAGAZINE 18 (May 1970). See generally PROCEEDINGS OF SECOND NAT'L CONF. ON WEATHER MODIFICA-TION 303, 308 (1970); PANEL ON TECHNOLOGY ASSESSMENT, NAT'L ACADEMY OF SCIENCES, TECHNOLOGY: PROCESSES OF ASSESSMENT AND CHOICE (1969); Symposium-Technology Assessment, 36 GEO. WASH. L. Rev. 1025–1149 (1968).

114. Cf. NEB. REV. STAT. §2-2404 (1962), as amended, (Supp. 1967); WYO. STAT. ANN. §9-268 (1957), as amended, (Supp. 1969).

115. Cf. S.D. COMPILED LAWS ANN. §38-9-5 (1967).

116. Weather Modification Association, Membership Directory, 1 WMA 58-63 (1969).

In addition to powers granted it by section 1.06 or other acts authorized by law, the state board may:

(1) issue a license to any applicant who complies with the requirements of section 6.07, and issue a permit to any applicant who complies with the requirements of sections 6.08 and 6.12;

(2) establish advisory committees to advise and make recommendations to the state board and director concerning legislation, policies, administration, research, and other matters relative to weather modification;

(3) set standards for financial responsibility, subject to the limitations imposed by section 6.08;

(4) set standards of care which may be utilized in the judicial determination of negligence liability for weather modification operations, as provided by section 6.16 (3);

(5) make determinations of those operations which constitute extraordinary weather modification operations, and establish criteria for such determinations;

(6) cooperate with public or private agencies, with the federal government and its agents and contractors, and with other states in the conduct of weather modification operations;

(7) cause to be made, by inspectors appointed for that purpose, an examination and inspection of any weather modification operation, such examination or inspection to be governed by the provisions of section 1.06 (3);

(8) subject to available funds, enter into cooperative agreements or contracts with the various counties, cities, water management districts, or any person for conducting weather modification operations.

COMMENTARY. The state board needs authority to act in multiple realms. Although general powers to issue rules and regulations, purchase needed supplies, hire consultants and other administrative personnel, and similar generalized tasks were granted in §1.06, there was felt to be a need to draft explicit powers directly related to the multiple tasks facing the board in the realm of weather modification. First, it was essential to provide a means to regulate existing and potential modification attempts. The state should be able to deal with situations ranging from limited-area, single-cumulus cloud seeding to massive programs for climatic variation and storm degeneration.<sup>117</sup>

117. This assumes that the state, in contrast to federal or international authority, would be attempting regulation of such large-scale projects. As dis-

As a corollary to this, it was hoped so to structure the powers that the board would be able to assume a large-scale planning role in the allocation of atmospheric precipitation resources, much like other sections of the code gave it in the statewide planning of the distribution of ground and surface water.<sup>118</sup> Third, there should be some basis for the state to provide funds and incentives for experimental and research work. Fourth, it was felt desirable to institute a system to assign liability for damages caused by weather modification.

Before examining any single provision, it seems advisable to examine the underlying premise and policy decisions concerning the role of the state in the field of weather modification. A compromise between the alternatives of government regulation and government ownership was favored: government would participate in, but not monopolize, the field of weather modification. This approach is exemplified in the field of hydroelectric power generation, in which both government and private enterprise operate facilities. Advantages are that government can undertake ventures which are in the public interest but are beyond the economic interests or financial capabilities of private capital,<sup>119</sup> and can utilize its own operations to provide a "competitive vardstick" for private enterprise. Even where participation has been authorized in existing modification statutes, state expenditures for functional operations, as distinguished from research, have been minimal.<sup>120</sup> Because of this tendency, it is not expected that the state will be engaged in frequent or large-scale modification activities.121

The decision to involve the state as a participant in modification activities is contrary to the position of the Weather Modification Association and some earlier studies of modification. The association's Model Law states: "The Board shall not engage in weather modifica-

cussed earlier (see text and note 59, supra), such operations could probably be best regulated at the federal or international level.

118. See §1.07, text, commentary, and notes, supra.

119. See generally Lyden & Shipman, Public Policy Issues Raised by Weather Modification: Possible Alternative Strategies for Government Action, in HUMAN DIMENSIONS OF WEATHER MODIFICATION 289 (W. Sewell ed. 1966); Morris, Institutional Adjustment to an Emerging Technology: Legal Aspects of Weather Modification, in HUMAN DIMENSIONS OF WEATHER MODIFICATION 279 (W. Sewell ed. 1966); Mann, Human Dimensions of the Atmosphere from the Perspective of a Political Scientist, in HUMAN DIMENSIONS OF THE ATMOSPHERE 81 (1968).

120. ARIZONA STUDY 74-77; Taubenfeld, supra note 6, at 16-17; Corbridge & Moses, Weather Modification: Law and Administration, 8 NAT. RES. J. 207, 211-12 (1968).

121. See generally Corbridge & Moses, supra note 120.

tion activities, either directly or by contract."<sup>122</sup> The advocates of this position characterize the concept of a single agency both regulating and operating weather modification projects as "tantamount to authorizing the Federal Communications Commission to build radio and television stations in competition with commercial interests, or having the Public Utilities Commission or Federal Power Commssion build dams and sell electric power. Such activities would appear to be neither good governmental practice nor in the best interests of the field."<sup>123</sup>

The preponderance of opinion expressed in congressional hearings and scientific reports appears to favor a separate board to regulate modification operations. It was feared that a board with operational authority would not be sufficiently impartial in adjudicating conflicts that might arise among government agencies or between government agencies and private operators. A report to the President's Council for Science and Technology in 1966 asserted that "[t]o assign this responsibility to one of these agencies [an agency with operational authority] would immediately generate conflicts of interest, sow the seeds of dissension and doom the efforts at regulation and control to endless frustration."124 The Weather Control Research Association observed in 1966 Senate hearings that "it is urgent that a separate, regulatory or licensing Commission should be established, independent of any operational coordinating Government groups. The reason for this is that mission-oriented agencies overregulate those projects which are in competition with their own activities."125

Despite such opinion, the decision was made to combine regulation with *limited* operational authority. The crucial element is the expectation of *limited* operations; the policy is reflected in §6.03 (8) which restricts the state board to available funds and to the use of cooperative agreements or contracts in effecting modification. There certainly is no anticipation or expectation of total board monopolization of modification operations.<sup>126</sup> This combination manifests the conclusion of the National Science Foundation's Special Commission on Weather Modification: "Whether the regulatory function needs to be divorced

122. WMA No. 21.

123. Williams, A Weather Modification Commission, 1 WMA 44 (1969).

124. H. NEWELL, A RECOMMENDED NATIONAL PROGRAM IN WEATHER MODI-FICATION 36 (A Report to the Interdepartmental Committee for Atmospheric Sciences, Federal Council for Science and Technology, Executive Office of the President, Oct. 1, 1966).

125. Hearings on Weather Modification before the Senate Comm. on Commerce, 89th Cong., 1st & 2d Sess., pt. 1, at 83 (1966).

126. See Lyden & Shipman, supra note 119.

completely from the operating agencies, or can be assigned to a separate branch of such an agency, will depend largely on the extent of activity and the degree of regulation required."<sup>127</sup> As noted in the introduction, the purpose of any state involvement in weather modification is twofold. The public must be protected from those not qualified to interfere in atmospheric phenomena and from the possible, albeit remote, contingency of disastrous damages stemming from a modification effort. At the same time, the code charges the board with the encouragement of the maximum degree of modification consistent with the fair and equitable use, conservation, and development of all waters of the state. To effect both of these objectives it was determined that the state board should be involved in *some* modification operations.

Probably the strongest precedent for such a combination is the Atomic Energy Commission. The statement of purpose in the Atomic Energy Act of 1954 parallels the duality of interests manifest in the code. Both the code and the act propose evolution of a new technology to the maximum extent consistent with the health and safety of the public.<sup>128</sup> The decision to combine regulation with operations is but one of several instances where the code, because of the analogous interests involved, relies upon the approach taken in the Atomic Energy Act.

Moreover, existing and proposed modification statutes combine operational and regulatory authority. The following all provide some degree of combination:<sup>129</sup> S. 2875, the subject of extensive hearings in 1966; S. 2916, as amended and passed by the Senate in 1966; S. 373, as introduced by Senator Magnuson in the Ninetieth Congress; and S. 2058 and H.R. 9212 (1968). Some of these bills would have resulted in a federal agency that could have dominated modification operations; the congressional criticism noted earlier arose during hearings on these proposals. The Arizona study recommended some combination of functions at the level of federal legislation, but does

127. Special COMMISSION, supra note 14, at 33.

128. Cf. 42 U.S.C. §2013 (1970) with code §1.02 (4), supra.

129. For a description of this and other proposed legislation, see Corbridge & Moses, supra note 120, at 221-25; Hearings, supra note 125; Hearings on S.2875 Before the Subcomm. on Water and Power Resources of the Senate Comm. on Interior and Insular Affairs, 89th Cong., 2d Sess. (1966); S. REP. No. 1139, supra note 6; S. REP. No. 1725, 89th Cong., 2d Sess. (1966); Carter, Weather Modification: Senate Bills Stir Agency Rivalries, 151 SCIENCE 805 (1966); ARIZONA STUDY 104-6; Ball, Shaping the Law of Weather Control, 58 YALE L. J. 213 (1949); Johnson, supra note 63, at 183; 1 H. LAMBRIGHT, supra note 63.

not appear to have considered the question as it affects state statutes.<sup>130</sup> Nevada and Texas expressly authorize the regulatory agency to engage in modification operations.<sup>131</sup> New York and California permit local political subdivisions to contract for these operations.<sup>132</sup> Four states utilize local districts or authorities to operate the projects.<sup>133</sup> The remaining twenty-one states do not expressly indicate any governmental operational responsibility.<sup>134</sup>

One further economic rationale suggests that the state board should have some operational responsibilities. Weather modification has tremendous implications for public investment at all levels of government. State operations, when coupled with private action, should generate an increased certainty with regard to water supplies. This development would reduce the need and affect the design criteria for such major water installations as dams, levees, and urban storm drainage and sewage treatment systems. Reduced spending for the facilities might then provide opportunities for increased investment in other areas. These changes, as they create new needs to re-examine and revise public policy, will be directly and proportionately affected by the scope of state operations.<sup>135</sup> This would be most readily apparent in state operations to implement particular aspects of the State Water Plan. It might be noted that this same rationale reaffirms the decision. discussed in the introduction, to vest the policy-making function with the state rather than with regions, districts, or municipalities.

Similar questions extend beyond the field of regulation, and into research and experimentation. Should the state create the environment in which private and university-sponsored efforts are encouraged through governmental coordinative services, financial support, provision of experimental facilities, indemnity against lawsuits, waiver of sovereign immunity, and so forth? Or should government itself undertake some or all of the research efforts in the field?<sup>136</sup>

130. See ARIZONA STUDY 122-30. But see Davis, Strategies for State Regulation of Weather Modification, in CONTROLLING THE WEATHER, supra note 19, at 256.

131. NEV. REV. STAT.  $\S$ 544.030, .080 (8) (1967); Ch. 58,  $\S$ 14.019 (b) [1971] Tex. Laws 187.

132. CAL. GOV'T CODE §53063 (West 1966); N.Y. GEN. MUNIC. LAW §119-p (McKinney Supp. 1969). See also ARIZONA STUDY 73 nn. 16-18, 75.

133. Minnesota, Nebraska, North Dakota, Oregon. For observations on the success of the Nebraska approach, see ARIZONA STUDY 72 and nn. 11–14.

134. But see OKLA. STAT. ANN. tit. 82, §1078, n. §§2 (1), 2 (V) (1970); ARIZONA STUDY 74 and nn. 24–27.

135. See generally materials cited at note 113, supra; HUMAN DIMENSIONS OF WEATHER MODIFICATION (W. Sewell ed. 1966).

136. See Kates & Sewell, The Evaluation of Weather Modification Research,

There is a greater degree of unanimity on this question than on the issue of operational roles. The government, at both state and federal levels, sponsors most of the current modification research and experimentation. In fiscal year 1969, at the federal level, \$11,294,000 was appropriated for weather modification.<sup>137</sup> At the state level there has been similar, though not as extensive, support for modification research. Ten states authorize their water or natural resources agency, or weather modification commission, to engage in studies, research, or experimentation.<sup>138</sup> New Hampshire authorizes any state department or agency to engage in modification experimentation;<sup>139</sup> New York and California grant this same power to political subdivisions.<sup>140</sup> Nebraska, North Dakota, and possibly Oregon vest this same power with local weather modification districts.<sup>141</sup> A 1965 NSF survey reveals that nine states supported weather modification research during the period 1959–64. Seven of these reported a total of approximately \$1,309,750 as amounts expended.<sup>142</sup>

The Weather Modification Association did not directly consider the matter of state-supported research in its *Elements of a Model Law*; however, this might be explained by the fact that the proposal was primarily an attempt to draft a regulatory statute.<sup>143</sup> Since many of the operations of WMA members are funded by government research grants, and since the primary purpose of the organization is the promotion of research and engineering advancements in weather modification technology, it would seem possible that the organization would not dogmatically oppose research sponsorship by a governmental regulatory board.<sup>144</sup>

137. ARIZONA STUDY 6, n. 29; see also Kates & Sewell, supra note 136, at 347, n. 1.

138. California, Colorado, Connecticut, Louisiana, Nevada, New Mexico, Oregon, South Dakota, Texas, Washington. See generally Taubenfeld, supra note 6, at 16 and nn. 35, 39-44.

139. N.H. REV. STAT. ANN. §432.1 (1968).

140. CAL. GOV'T CODE §53063 (West 1966); N.Y. GEN. MUNIC. LAW §119-p (McKinney Supp. 1969).

141. ORE. REV. STAT. §§558.300-.365 (1969); NEB. REV. STAT. §§2-2428 to -2449 (1970); N.D. CENT. CODE §§2-07-01 to -13 (Supp. 1971).

142. Taubenfeld, *supra* note 6, at 16–17, nn. 35–39, 39–44. Louisiana, Oregon, and Texas did not report the amounts expended.

143. See ARIZONA STUDY, Elements of a Model Law, at Foreword.

144. Cf. Constitution and By-Laws of the Weather Modification Association, 1 WMA 49 (1969).

in HUMAN DIMENSIONS OF WEATHER MODIFICATION 347; Crutchfield, Investment in Weather Modification Research: Objectives, Incentives, and Applications, in HUMAN DIMENSIONS OF WEATHER MODIFICATION 363; Lyden & Shipman, supra note 119.

There are a variety of scientific reasons for vesting principal research emphasis and support with a single governmental agency. First, such an approach can more easily avoid the unnecessary and undesirable duplication of effort that has characterized too much modification research in the past. Of equal importance is the avoidance of projects that are of subcritical size.<sup>145</sup> The Panel of Weather and Climate Modification also expressed concern over the "dissipation" of research in projects of less than desirable size and lamented that "few opportunities have been provided for major research groups to adopt weather modification as their major research interest."<sup>146</sup> Other scientific reasons include the need for compilation of data, evaluation of techniques, and concentrated research efforts on basic physical processes, all of which would be enhanced by a single lead agency.

There is, however, definite reason to avoid total governmental monopolization of all research and experimentation. In view of the uncertainty of which scientific approaches would be most productive, total centralization of effort could have a stultifying effect on overall research. As the director of the National Center for Atmospheric Research indicated in House testimony, "[f]or the present, diversity of effort is more important than close central management. Too much centralization at this stage of the game may prevent us from simultaneous and independent pursuit of all promising research and development leads."<sup>147</sup> Moreover, in an individual context, it is desirable to enable researchers who might not agree with the policy prescribed by the state agency to leave the government and either join an existing research organization or start a private concern.<sup>148</sup>

Based upon analysis of these arguments, it was concluded that private as well as government research is desirable; therefore, the provisions defining the powers of the board encourage all research, and finance some of it. This conclusion parallels the recommendations of Lyden and Shipman's analysis of alternative strategies for government action regarding weather modification.<sup>149</sup> This examination of the scope of governmental action toward both research and operations in weather modification defines the parameters and premises of any

145. See Hearings, supra note 125, at 123 (Testimony of Dr. Leland Haworth, National Science Foundation).

146. See WEATHER AND CLIMATE MODIFICATION, supra note 15, at 18.

147. Hearings on S.2875, supra note 129, at 353 (Testimony of Walter O. Roberts).

148. Morris, supra note 119, at 288.

149. See Lyden & Shipman, supra note 119, at 302.

state intervention in the area. These premises, from the standpoint of protecting the public interest through regulation and determination of permit allocation and liability for damages, while encouraging but not dictating experimental work, delineated the powers to be granted the board. There was concern for insuring that the powers relate to the natural resources strategy of the state. It is hoped that the net result of operations under such powers would be at least an avoidance of the patchwork of legal and administrative systems which have developed in many states in the field of water resources.<sup>150</sup>

The powers granted to the state board are very broad. Their inclusion might potentially raise questions as to an unconstitutional delegation of legislative authority. However, as acknowledged in the introduction, three factors dictated a conclusion that the provisions do not go too far: the wide scope traditionally granted the delegation of police powers,<sup>151</sup> recent liberal views of proper delegation where adequate administrative safeguards are provided, and the apparent lack of any successful challenge to modification statutes in other states.

The express provisions of §6.03 (1) are not currently found in any state statute, although several statutes contain express or implied grants of this power.<sup>152</sup> Section 6.03 (2) is based upon language in Connecticut, Nevada, Texas, and Washington statutes.<sup>153</sup> Section 6.03 (3) is also original but expresses policies found in the position of the Weather Modification Association and some state statutes.<sup>154</sup> Both Pennsylvania and West Virginia have statutory sections, analogous

150. Cf. Clark, Plan and Scope of the Work, in 1 WATERS AND WATER RIGHTS §3.1 (R. Clark ed. 1967).

151. See 1 F. COOPER, STATE ADMINISTRATIVE LAW 47-91 (1965); K. DAVIS, 1 ADMINISTRATIVE LAW TREATISE §§2.07, 2.11 (1958). Cf. Permenter v. Youman, 159 Fla. 226, 31 So. 2d 387 (1947).

152. See, e.g., Colo. Rev. Stat. Ann. §§151–1–4, -5 (1963); Neb. Rev. Stat. §2–2405 (4) (1970).

153. CONN. GEN. STAT. ANN. §24–7 (1) (1960); NEV. REV. STAT. §544.080 (1) (1967); Ch. 58, §14.015 [1971] Tex. Laws 187; WASH. REV. CODE ANN. §43.37.030 (1) (1970).

154. See WMA Nos. 5, 6; Ch. 58, §14.068 [1971] Tex. Laws 190; WASH. REV. CODE ANN. §43.37.150 (1967), as amended, §§43.27A.080, .180 (1970) [both Texas and Washington require financial responsibility by a showing "to the satisfaction of" the applicable authority of ability to respond in damages for liability; no dollar limitations are imposed upon the authority's discretion].  $C_{f.}$ , e.g., COLO. REV. STAT. ANN. §151–1–6 (1) (b) (1963) (power implied), NEV. REV. STAT. §§544.080 (2), .150 (3) (1967) (general power to establish amounts, by regulation, for a showing of financial responsibility; however, the amount may not exceed \$20,000); N.D. CENT. CODE §2–07–05 (Supp. 1971) (general right to establish conditions, qualifications, and professional standards).
to \$6.03 (4), establishing a formal procedure for some types of liability determination.<sup>155</sup> Federal atomic energy legislation, providing a method for public protection in the event of nuclear reactor disaster, provided the format for §6.03 (5).<sup>156</sup> Several state statutes contain cooperation provisions similar to those found in §6.03 (6).<sup>157</sup> The inspection provisions of §6.03 (7), although original, correspond to the powers granted federal food and drug inspection officials, and to authority vested in state officials in New Mexico, Pennsylvania, and West Virginia;<sup>158</sup> this subsection complements the entry and inspection provisions applicable to the entire code.<sup>159</sup> The contract and agreement authority granted in §6.03 (8) incorporates parts of several state statutes.<sup>160</sup>

## \$6.04 Promotion of Research and Experimental Activities Relating to Weather Modification

The state board shall exercise its powers in such a manner as to promote the continued conduct of research and experimentation in the fields specified below by persons or private or public institutions and to assist in the acquisition of an expanding fund of theoretical and practical knowledge in such fields. To this end the state board may conduct, and make arrangements including contracts and agreements for the conduct of, research and experimentation activities relating to:

(1) the theory and development of methods of weather modification;

(2) utilization of weather modification for agricultural, industrial, commercial, municipal, or domestic purposes;

(3) the protection of life and property during weather modification research or operations.

155. Pa. Stat. Ann. tit. 3, §1114 (Supp. 1971); W. Va. Code Ann. §29-2B-13 (Supp. 1971); cf. 42 U.S.C. §§2201 (b), (i) (3) (1970). 156. See 42 U.S.C. §§2014 (j), 2201 (b), 2201 (i) (3) (1970).

157. See, e.g., NEB. REV. STAT. §2-2408 (1970); N.D. CENT. CODE §2-07-05 (Supp. 1971); S.D. COMPILED LAWS ANN. §38-9-10 (1967).

158. See 21 U.S.C. chs. 10, 12 (1970); 42 U.S.C. §1857b-1 (b) (5) (1970); N.M. STAT. ANN. §75-37-14 (B) (1968); PA. STAT. ANN. tit. 3, §1112 (Supp. 1969); W. VA. CODE ANN. §29-2B-11 (Supp. 1971).

159. See discussion and notes at §1.06 (3), supra.

160. NEV. REV. STAT. §544.080 (8) (1967) ("with approval of the gover-nor . . ."); N.D. CENT. CODE §2-07-11 (Supp. 1969) (restricted to experimentation); S.D. COMPILED LAWS ANN. §§38-9-9, -11 (Supp. 1971) (restricted to research expenditures); Ch. 58, §14.019 (b) [1971] Tex. Laws 187. Cf. NEB. REV. STAT. §2-2405 (5) (1970); WYO. STAT. ANN. §9-275 (1957) [none of these statutes explicitly restricts the expenditure power to available funds].

#### COMMENTARY

COMMENTARY. Section 6.04 is included to authorize and indicate, through explicit terminology, the research and experimentation authority of the state board. It was felt that the code should make it quite clear what the priorities are in the development of weather modification. Given the embryonic and uncertain nature of technology, experimentation and research should be at the top of the list. This suggestion corresponds to a conclusion of the Arizona study.<sup>161</sup>

Perhaps this was not necessary since some theories of statutory draftsmanship and construction would permit application of this section's purpose through interpretation of \$1.02 (5) (general policy-purpose declaration) and \$6.03 (modification powers section). However, an experimentation and research purpose might appear to exceed the police power and operations orientation of \$6.03, and thus experiments might be precluded through strict construction, where it appeared that the research operation would interfere with vested private rights.<sup>162</sup> Experiments in Canada, Florida, Pennsylvania, and West Virginia have been halted or restricted because of such contentions.<sup>163</sup>

A second reason for a separate section evolves from the limited state and local involvement, to date, in the support of weather modification research. The 1965 NSF survey of state involvement in all aspects of modification revealed only nine states that had supported any research in the 1959–63 period; seven of these reported a total of approximately \$1.3 million expended during this time.<sup>164</sup> Considering the magnitude of required research to bring modification techniques to their maximum utility, this sum was far from adequate.

This failure is attributable to at least two factors aside from the probable unwillingness of most state legislators to expend public funds on such esoteric endeavors as research in the "measurement of high concentrations of ice nuclei in a small parcel of air."<sup>165</sup> Often state statutes have not authorized public expenditures for modification research.<sup>166</sup> The second and perhaps most significant explanation of

161. ARIZONA STUDY 120-22.

162. See generally id. at 16-20.

163. See Taubenfeld, supra note 6, at 9, n. 8, 18, n. 43, 28, nn. 96-97; New York Times, June 10, 1965, at 9; id., June 11, 1965, at 33; Hearings on H.R. 9212 and H.J. Res. 688 Before the Subcomm. on Communications and Power of the House Comm. on Interstate and Foreign Commerce, 90th Cong., 1st Sess., ser. 90-14, at 84 (1967) (remarks of Thomas F. Malone); St. Petersburg (Fla.) Times, April 5, 1970, Parade (Magazine) at 21; id., April 23, 1970, at 2-B, col. 1-3.

164. Taubenfeld, supra note 6, at 16-17, nn. 39-44.

165. See Schaefer, The Measurement of High Concentration of Ice Nuclei in a Small Parcel of Air, 35 BULL. AM. METEOR. Soc'Y 230 (1954).

166. See, e.g., FLA. STAT. §§403.281-.411 (1971).

state reluctance to support modification experimentation has been the relative ease of securing federal funding.<sup>167</sup> Economic restraints upon federal support might prompt the states to increase their aid.

Whether attributable to the statutory language or not, it is noteworthy that Nevada, whose statute serves as the basis for the code provision, reported the largest single-project research expenditure of any state responding to the NSF survey.<sup>168</sup> The only change made in the Nevada enabling legislation is the substitution of "municipal and domestic" for "other" in the provision of §6.04 (2); this was done to insure that statutory construction of "other" would not exclude municipal or domestic utilization of weather modification. This change corresponds to the concern for municipal and domestic use of water that pervades the code.<sup>169</sup>

It was hoped that the separate delineation of research and experimentation purposes might inspire the state board to expend public monies in this area. At the least, it should alert the board to the fact that the legislature intends sponsorship of theoretical, applied, and technological-applications research. An analogy might be drawn to the National Science Foundation. Previously, comparable statutory language encouraged NSF sponsorship of expansive theoretical and applied research;<sup>170</sup> since the deletion of this authority in 1968, NSF fundamentally has restricted its modification activities to basic and theoretical research.<sup>171</sup>

## \$6.05 License and Permit Required for Weather Modification Activities

Except as provided in section 6.06, no person shall engage in activities for weather modification except under and in accordance with a license and a permit issued by the state board.

COMMENTARY. Section 6.05 is the "standard" type of licensing requirement. Licensing is the major field in which state government now regulates modification. Current state licensing laws vary. The

167. See S. REP. No. 1139, supra note 6.

168. See Taubenfeld, supra note 6, at 40-41.

169. See commentary and notes on §1.02, supra.

170. Act of July 11, 1958, Pub. L. No. 85-510, §1, 72 STAT. 353. For a description of NSF activity pursuant to this statute, see NATIONAL SCIENCE FOUN-DATION, supra note 13.

171. See 1 LAMBRIGHT, WEATHER MODIFICATION: THE POLITICS OF AN EMER-GENT TECHNOLOGY (1969); Lambright, Weather Modification: The Politics of an Emerging Technology, in PROCEEDINGS OF SECOND NAT'L CONF. ON WEATHER MODIFICATION 310 (1970).

Model Water Code follows the practice of those states<sup>172</sup> which make it clear that modifiers must obtain two types of documents: a modification license and a permit. The license certifies that the licensee may practice weather modification in that jurisdiction. The permit—issuable only to licensed modifiers—limits the licensee to specified weather modification activity in a particular area over a given period of time. Nevada, Texas, and Washington utilize such a system, and even with comparatively large programs of modification they have reported no difficulties under this arrangement.<sup>173</sup>

The Arizona Study recommended this dual approach to regulations utilizing clear distinctions between licensing modifiers as competent professionals and issuing permits to modifiers to undertake specific projects.<sup>174</sup> The alternatives to this approach include requiring only a license,<sup>175</sup> only an operational permit,<sup>176</sup> or a single license which includes some corollary requirements more properly associated with a permit.<sup>177</sup> All of these alternatives were rejected as not providing sufficient public control over both the individual operator and the separate operation. A final alternative, rejected for the same reason, would be the absence of a requirement for either a permit or a license; this is the current policy in nine states.<sup>178</sup>

The code does not include licensing for the manufacturers of modification equipment or required registration of modification materials. Arizona requires manufacturers and sellers of equipment used primarily in weather modification to obtain a license.<sup>179</sup> Both West Virginia and Pennsylvania require the registration of cloud-seeding equipment.<sup>180</sup> These requirements were not included in the code as no study has yet indicated a substantial or significant problem of illegal or unauthorized modification.

## \$6.06 Exemptions from License and Permit Requirements(1) The state board, to the extent it deems practical, may

172. See, e.g., MONT. REV. CODE ANN. \$89-313 (Supp. 1971); Ch. 58, \$14.041 [1971] Tex. Laws 188. Cf. WMA Nos. 4, 11; 47 U.S.C. \$301 (1970). 173. See Taubenfeld, supra note 6, at 39-44. 174. ARIZONA STUDY 122-25. 175. See, e.g., COLO. REV. STAT. ANN. \$151-1-5 (1963).

176. See, e.g., WYO. STAT. ANN. §9–270 (1957), as amended, (Supp. 1969).

177. See, e.g., FLA. STAT. §§403.301, .341 (1971); W. VA. CODE ANN. §29-2B-4 (a) (Supp. 1971).

178. Connecticut, Hawaii, Kansas, Maryland, Massachusetts, Minnesota, New York, New Hampshire, and Oklahoma.

179. Ariz. Rev. Stat. Ann. §45–2405 (1956).

180. PA. STAT. ANN. tit. 3, §1107 (Supp. 1971); W. VA. CODE ANN. §29–2B–4 (b) (Supp. 1971).

provide by regulation for exemption from the license requirements of this code:

(a) laboratory research and experiments; and

(b) activities normally engaged in for purposes other than those of modifying the weather.

(2) The state board, to the extent it deems practical, may provide by regulation for exemption from the permit requirements of this code:

(a) laboratory research and experiments;

(b) activities of an emergency character for protection against fire, frost, sleet, fog, wind, or rain; and

(c) activities normally engaged in for purposes other than those of modifying the weather.

(3) Activities, research, or experiments exempted under sections 6.06 (2) (a) and (b) shall be required to comply with the broadcast provisions of section 6.11 (2), the records and reporting provisions of section 6.12, and the evaluation provisions of section 6.13.

COMMENTARY. Section 6.06 provides for the *potential* exemption of certain classes of modification projects. The term potential should be stressed. It is not contemplated that the state board must *issue* such exemptions. This discretion contrasts with the policy in some states where the legislature specifies that exemptions shall be provided for certain classes.<sup>181</sup> However, it was felt that if the exemption section is to remain consistent with the discretionary powers granted the state board, and with the role the board has in the determination of modification policy consistent with the public interest, then the board must also be permitted to determine when and whether to grant exemptions from the license and permit requirements of the code. The potential challenges to this delegation of discretionary authority parallel those discussed in conjunction with \$6.03; the favorable resolution of any such challenge could be expected for reasons analogous to those discussed therein.

The intent of this section is to provide a mechanism through which the state board may deal with those otherwise unique situations in which compliance with the code and corollary rules and regulations would be unreasonable; utilization of this authority could preclude the potential elimination of lawful activities in those circumstances where the public could receive no benefit from the code's application.

181. See, e.g., ORE. REV. STAT. §558.066 (1969).

It is conceivable that exemptions in some circumstances could preclude a determination of unconstitutionality where the code's application might be classed as unreasonable. Automotive monoxide and sulfide emissions, although strictly within the code's definition of modification,<sup>182</sup> could be excluded from state board regulation; were this not the case, the individual driver probably could enjoin enforcement of the code through a contention that there was no rational or reasonable basis for *his* regulation.<sup>183</sup> States that now require only a professional license make no provisions for exemptions from their licensing requirement. However, those jurisdictions which require both a license and a permit provide for some limited exemptions. In this regard it might be noted that the Pennsylvania, West Virginia, and California exemptions seem to be exemptions from procedures rather than from professional licensing requirements.<sup>184</sup> Oregon requires no licensing of state agencies and municipal corporations engaged in fog dissipation.<sup>185</sup>

Some states also make further exemptions from permit requirements. Arizona does not require a permit from a farmer who hopes personally to effect precipitation; Nebraska requires no permit fee for research and experimental activities.<sup>186</sup>

The code permits exemption of *laboratory* research and experimentation from both the permit and the license requirements. This corresponds to an explicit provision of the Nevada statute,<sup>187</sup> and is intended to encourage such experimentation. The code, however, does not exempt "research and development and experiments by state and federal agencies, institutions of higher learning and bona fide nonprofit research organizations."<sup>188</sup> It was felt that the risks of exemption of any experimentation and research outside of the laboratory were too great to warrant exemption. This corresponds to a recommendation of the National Science Foundation that federally supported research should be subject to regulation.<sup>189</sup> Such regulation might

182. See D. HALACY, supra note 1, at 176-89; Rango, supra note 16.

183. See Nebbia v. New York, 291 U.S. 502 (1933); Lochner v. New York, 198 U.S. 45 (1905).

184. ARIZONA STUDY 89, n. 191. The West Virginia statute duplicates the Pennsylvania version in this regard. Compare PA. STAT. ANN. tit. 3, §1109 (Supp. 1971) with W. VA. CODE ANN. §29–2B–8 (Supp. 1971).

185. ORE. REV. STAT. §558.066 (1969).

186, NEB. REV. STAT. §2–2407 (3) (1970); ARIZ. REV. STAT. ANN. §45–2406 (1956).

187. NEV. REV. STAT. §544.130 (1967).

188. *Id.* at (1).

189. SPECIAL COMMISSION, *supra* note 14, at 33 (referring to a federal regulatory agency).

generate difficulties for experimentation and thus might appear as contrary to the code's intent to further and promote research. However, balancing of all interests in question prompted the inclusion of some requirements to protect the public from nonlaboratory projects that might generate extensive damage; the destructive Project Cirrus is an example of a project that would remain subject to regulation.<sup>190</sup>

The code further exempts emergency modification projects from the permit requirements. Examples of such projects might include hurricane deflection, tornado diminution, or emergency airport fog dissipation. This exemption is in accord with the trends in several states.<sup>191</sup> An analogous recommendation was made by the Weather Modification Association.<sup>192</sup> Emergency projects are not exempted from the licensing requirements, as it was felt that even an emergency should not justify the use of an incompetent modifier.

However, neither the laboratory nor emergency exemptions permit the modifier to escape all regulation. To assure adequate public notice he is required to broadcast information about the operation. To assist in the evaluation of all modification, he is required to file records, reports, and an evaluation of the project.

The only "modification" that avoids all regulation is the instance where acts, such as auto exhaust or industrial pollution, unintentionally alter the climate and/or atmosphere. It has been shown that both auto exhaust and industrial atmospheric and liquid emissions can have this effect.<sup>193</sup> Any human dwelling has some slight effect on the microclimate surrounding it; irrigation canal construction increases the humidity of the region; smog often reduces by one-fourth the heat reaching the ground. The broad scope of the modification definition used in the code necessitated the potential exemption of those activities which are not undertaken with an intent to change the weather. The decision by the state board as to the exercise of this exemption authority would require close consultative work with those state agencies charged with the task of environmental preservation. Coordination with the regulation of water quality is simplified by the hydrologic unity effected where the state board makes all policy decisions.

190. See note 11, supra.

191. See, e.g., Ch. 58, §14.042 (2) [1971] Tex. Laws 189; WASH. REV. CODE ANN. §43.37.090 (3) (1965).

192. WMA No. 12.

193. See materials cited at note 182, supra. See also Lear, The Home-Brewed Thunderstorms of La Porte, Indiana, 51 SATURDAY REVIEW, April 6, 1968, at 53; CONSERVATION FOUNDATION, IMPLICATIONS OF RISING CARBON DIOXIDE CONTENT OF THE ATMOSPHERE (1963).

One probable exemption, not specifically delineated in this section, would be federal modification projects. A state may not limit the activities of an instrumentality of the federal government by requiring compliance with licensing or permit provisions, and the state police power cannot be used to regulate federal agencies performing governmental functions.<sup>194</sup> However, Congress may consent to subject federal activities to state authority and has shown a willingness to permit some state regulation of federal activities that affect the environment.<sup>195</sup>

#### **§6.07** Weather Modification Licenses

(1) If public convenience, interest, or necessity will be served thereby, licenses to engage in weather modification shall be issued to applicants who pay the license fee required and who demonstrate, to the satisfaction of the state board, competence in the field of meteorology reasonably necessary to engage in weather modification. Such competence may be demonstrated through certification by the Weather Modification Association. If the applicant is an organization, these requirements shall be met by the individual or individuals who are to be in control or in charge of the applicant's operation.

COMMENTARY. As in several other parts of this chapter, §6.07 (1) utilizes provisions quite similar to parts of the Communications Act of 1934, especially in terms of the use of a "public interest" standard.<sup>196</sup> The state board could utilize the standard as a flexible device to effectuate comprehensive planning and development of atmospheric resources, while at the same time protecting the public from incompetent operators. While it may evolve as it has with the FCC that there is a reluctance to deny a license to any applicant who satisfies certain technical qualifications,<sup>197</sup> the variable public interest standard should permit the state board to exercise as much authority as is required to protect and wisely use the waters of the state.

In the absence of further definable standards, problems arise from

194. See Arizona Study 80, 80A, 80B.

195. See, e.g., 31 U.S.C. §425 (1970); 12 U.S.C. §548 (1970). See also First National Bank of Guthrie Center v. Anderson, 269 U.S. 341 (1926).

196. See 47 U.S.C. §307 (a) (1970).

197. See K. Cox & N. JOHNSON, BROADCASTING IN AMERICA AND THE FCC'S LICENSE RENEWAL PROCESS: AN OKLAHOMA CASE STUDY 5 (1968); Comment, Diversification and the Public Interest: Administrative Responsibility of the FCC, 66 YALE L. J. 365, 382 (1957).

the vagueness of this criterion. This challenge was raised in a recent FCC decision by a federal appeals court.<sup>198</sup> However, there the difficulties arose because there were "First Amendment issues lurking in the near background."<sup>199</sup> As used in §6.07 (1), the standard should be sufficient in any state adhering to the progressive view of delegation discussed in the introduction.

It should be recognized, however, that there has been extensive and recent criticism of the entire public interest standard. Most critics contend that "public interest" is a vague and uncertain guide without any measurable standards.<sup>200</sup> The consensus is that "the guide in the determination of problems that face the agencies is not much more than their conception of the public interest."<sup>201</sup> Guided solely by "their conception of the public interest," and often affected by the political elements of their appointments, the regulators generate chronic non-enforcement of statutes and regulations that the public at large might deem to be in its interest.<sup>202</sup> This chronic nonenforcement—rather than the lack of desirable substantive regulations—has been found to be "the central characteristic of administrative agency failure to protect the public interest."<sup>203</sup>

198. Banzhaf v. FCC, 405 F. 2d 1082 (D.C. Cir. 1968), cert. denied, 396 U.S. 842 (1969). See also Editorializing by Broadcast Licensees, 13 F.C.C. 1246, 25 R.R. 1901, (1949).

199. Banzhaf v. FCC, 405 F. 2d 1082, 1096 (D.C. Cir. 1968). "[W]ith First Amendment issues lurking in the near background the 'public interest' is too vague a criterion for administrative action unless it is narrowed by definable standards..." Id. at 1096.

200. See M. CONANT, RAILROAD MERGERS AND ABANDONMENTS 166-67 (1964); Friendly, The Independent Agency—A Necessary Instrument of Democratic Government, 69 HARV. L. REV. 483, 491 (1956); Friendly, The Federal Administrative Agencies: The Need for Better Definition of Standards, 75 HARV. L. REV. 863 (1962); Liipfert, Consolidation and Competition in Transportation: The Need for an Effective and Consistent Policy, 31 GEO. WASH. L. REV. 106, 125-31 (1962); Tucker & O'Brien, The Public Interest in Railroad Mergers, 42 B.U.L. REV. 160, 183-86 (1962); see generally, R. Schwenke, Administrative Law: Judicial Determination of Public Interest Standard for Railroad Mergers, Nov. 1, 1967 (unpublished student note in University of Florida Law Review Library).

201. CHAIRMAN OF THE SUBCOMM. ON ADMINISTRATIVE PRACTICE AND PRO-CEDURE, SENATE COMM. ON THE JUDICIARY, 86TH CONG., 2D SESS., REPORT ON REGULATORY AGENCIES TO THE PRESIDENT-ELECT 2 (Comm. Print 1960); 1 F. COOPER, STATE ADMINISTRATIVE LAW 94 (1965).

202. See L. KOHLMEIER, THE REGULATORS, WATCHDOG AGENCIES AND THE PUBLIC INTEREST (1969); L. METCALF AND V. REINEMER, OVERCHARGE (1967).

203. J. Esposito, Air and Water Pollution: What to do While Waiting for Washington, 5 HARV. CIV. RIGHTS CIV. LIB. L. REV. 32 (1970); see also E. Cox, R. FELLMETH, J. SCHULZ, 'THE NADER REPORT' ON THE FEDERAL TRADE COMMISSION (1969).

The code rejects the suggestion of some of these critics that additional criteria, beyond the general statement of purpose, be stipulated in each instance where official action depends upon the application of a "public interest" test. Instead, the code's statement of purposes, coupled with the other requirements for the issuance of a license or permit, serves as the "intelligible principle' specifying the standards or guides in as detailed a fashion as is reasonably practicable in the light of the complexities of the area to be regulated."<sup>204</sup> This policy conforms to Professor Jaffe's admonition to maintain standards broad enough to meet present and future contingencies;<sup>205</sup> both this admonition and policy are requisite to successful direction and regulation of the constantly changing sphere of weather modification.

Aside from these policy purposes, this section provides a method whereby the public can be protected from incompetent operators of modification projects. The public needs the assurance that full consideration has been given to whether the operator has adequate knowledge and skill to maximize the benefits and to minimize the potential harm from any operation. Most state statutes do not contain a variable "public interest" standard or explicit stipulations concerning the demonstration of technical and professional competency. It is noteworthy that \$6.07 (1) expressly stipulates that the license may be issued only to applicants who demonstrate competence in the modification aspects of meteorology. Washington and Texas are presently the only states to impose such a stringent requirement.<sup>206</sup> The Weather Modification Association, the National Science Foundation, and the Arizona Study all recommend this requirement.<sup>207</sup> Several western states indicated in the NSF survey that they had problems arising from modification activities carried out by unqualified personnel.<sup>208</sup>

Modification project sponsors also have need for assurances of responsible operations. They need to know that the modifier has the experience and education to accomplish the project objective. From an economic standpoint, the sponsor is concerned with the modifier's ability to obtain the desired result at the least cost. Beyond this, how-

204. City of Utica v. Water Pollution Control Board, 5 N.Y. 2d 164, 169, 182 N.Y.S. 2d 584, 156 N.E. 2d 301, 304 (1959) citing Lichter v. United States, 334 U.S. 742, 785 (1947).

205. See L. JAFFE, JUDICIAL CONTROL OF ADMINISTRATIVE ACTION 38-41 (1965).

206. See Ch. 58, §14.043 [1971] Tex. Laws 189; WASH. Rev. Code ANN. §43.37.100 (1) (1970).

207. WMA No. 6; SPECIAL COMMISSION, supra note 14, at 25; ARIZONA STUDY 123, 125, n. 7.

208. See Taubenfeld, supra note 6, at 10-11; Davis, supra note 130, at 256.

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ever, the sponsor desires some protection from liability caused by modification activities resulting in damages.<sup>209</sup>

Even the modifier has a need for competency standards. Primarily his need is for protection against claims for malpractice. It has been suggested, as has happened in other professional fields, that future modification litigation may be judged, in part, on the basis of modifier negligence.<sup>210</sup> If so, adequate professional standards could serve the modifier as a test of his negligence or lack thereof.

The Weather Modification Association has established a program of certification for qualified modifiers. Certification is based on "character, knowledge and experience."<sup>211</sup> Although delegation of all certification responsibility to this private group probably would have been improper, it was felt that its investigative processes were adequate to permit the state board to accept WMA certification as the requisite demonstration of "competence in the field of meteorology reasonably necessary to engage in weather modification."

(2) The state board shall issue licenses in accordance with such procedures and subject to such conditions as may by regulation be established. The state board, by regulation, shall establish the license fee, which shall not exceed one hundred dollars (\$100).

COMMENTARY. This section supplements §6.07 (6) and authorizes the state board to establish regulations for the issuance of license fees. In those states requiring modification licenses, the enabling statutes generally have merely outlined in broad terms the duties of the regulatory agency. Regulations setting forth agency procedure, the form of applications for licenses, and the itemized qualifications to obtain a license have been promulgated by the agencies themselves.<sup>212</sup>

The form of this section is taken from the Washington and Nevada statutes.<sup>213</sup> Neither of these provisions has been challenged through

209. See Arizona Study 31-53.

210. See id. at 34-35; Report of the Task Group, in CONTROLLING THE WEATHER, supra note 19, at 32-35; Davis, supra note 61, at 49-50.

211. See Williams, supra note 111, at 36. See also Qualifications and Procedures for Certification by the Weather Modification Association, in ARIZONA STUDY at 53.

212. See Davis, supra note 61, at 56.

213. See Nev. Rev. STAT. §544.140 (2) (1967); WASH. REV. CODE ANN. §43.37.100 (2) (1970).

litigation despite comparatively large-scale modification projects in both states.

Seventeen of the states which issue licenses require the applicant to pay a fee or fees.<sup>214</sup> Fees range from ten dollars (North Dakota) to one hundred dollars (Montana). Both West Virginia and Pennsylvania permit the administrative agency to designate the fee, up to a maximum of one hundred dollars;<sup>215</sup> this technique corresponds to the recommendation of the Weather Modification Association that the agency "establish a license fee within statutory limitations."<sup>216</sup> This recommendation is adopted in §6.07 (2). This limited flexibility places some legislative restraints upon the state board, yet permits the fee to change depending upon the change in modification conditions. As much as any other part of the state's water policy, the fee schedule must be flexible to permit the board to deal with unique situations. Because of this fee flexibility, coupled with this section's general flexibility in establishing procedures, there is the potential to deal adequately with changed modification technology.

## (3) No license shall be construed to create any right beyond the terms, conditions, and periods of the license.

COMMENTARY. This section, based upon provisions of the Federal Communications Act of 1934,<sup>217</sup> establishes that qualification to modify the weather cannot be considered a vested right but merely certifies that the person is competent to attempt such alteration. In terms of the contrast between a technologically defined, limited number of frequencies for distribution and the potentially much larger number of persons who might qualify as modifiers, there are obvious distinctions between use of the airwaves and control of the atmosphere. However, the public interests served through *effective regulation* seem sufficiently analogous to warrant a similar restriction upon the vesting of rights.<sup>218</sup>

214. Arizona, California, Colorado, Florida, Louisiana, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, Pennsylvania, South Dakota, Texas, Washington, West Virginia, Wyoming.

215. See PA. STAT. ANN. tit. 3, §1106 (a) (Supp. 1971); W. VA. CODE ANN. §29-2B-5 (a) (Supp. 1971).

216. WMA No. 7.

217. 47 U.S.C. §301 (1970).

218. See generally Comment, The Aftermath of WHDH: Regulation by Competition or Protection of Mediocrity, 118 U. PENN. L. REV. 368 (1970); Jaffe, WHDH: The FCC and Broadcasting License Renewals, 82 HARV. L. REV. 1693 (1969); Goldin, "Spare the Golden Goose"—The Aftermath of WHDH in FCC License Renewal Policy, 83 HARV. L. REV. 1014 (1970).

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(4) Each license shall be issued for five (5) years. Upon the expiration of any license, upon application therefore, a renewal of such license may be granted from time to time for a term not to exceed five (5) years, if the state board finds that public interest, convenience, or necessity would be served thereby and if the license fee is paid. Section 6.07 (1) criteria applicable to the original application are equally applicable toward renewal. No renewal of an existing license shall be granted more than thirty (30) days prior to the expiration of the original license.

COMMENTARY. This section establishes the terms for modification licenses and provides procedures for the renewal of these licenses. In most states, modification licenses are good for one calendar or fiscal year, with normally easily obtainable reissuance.<sup>219</sup> Because of the near-automatic renewal, coupled with a consideration of the "cumbersome qualities" of annual renewal and the lifetime licensing of other professionals, the Arizona Study recommended that licenses should be valid for the life of the individual.<sup>220</sup> In contrast, the Weather Modification Association proposed that the term of the license should be for twelve consecutive months.<sup>221</sup> As a compromise between these positions and with consideration given to the three- and five-year terms utilized in the Communications Act provisions upon which this section's language is based,<sup>222</sup> a five-year duration is established for modification licenses. The opportunity for five-year re-evaluation should permit the state board to consider whether the applicant has kept abreast of changing technological capabilities.

The structure afforded by this section should provide ample latitude for state board implementation of a licensing policy consistent with effective allocation of atmospheric water resources.

(5) No license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such license, to any person except upon application to the state board and upon finding by the state board that the public interest, convenience, and necessity will be served thereby. In acting thereon the state board shall consider whether

219. ARIZONA STUDY 89. 220. Id. at 123 and n. 25. 221. WMA No. 7. 222. 47 U.S.C. §307 (d) (1970).

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#### Commentary

the public interest, convenience, and necessity might be served by the transfer, assignment, or disposal of the license to a person other than the proposed transferee or assignee.

COMMENTARY. This section, which also relies on language in the Communications Act,<sup>223</sup> establishes a check upon the transfer of control of corporations possessing modification licenses. Here again, the FCC experience has been that a hearing has rarely been held; hence, the commission has not restricted such transfers.<sup>224</sup> This substantially is attributable to the statutory language prohibiting consideration of other applicants in the area and treating the transferee as a sole applicant.<sup>225</sup> In an attempt to permit the state board to counteract such transfers, the existing presumptions in the Communications Act are reversed so that the state board can consider whether the transfer meets the statutory public interest criteria. While this change would not affect most current modifiers as they engage in limited-scale business enterprises, one might expect future consolidation, merger, and conglomeration as modification increases in scope and level of expenditure, if modification firms follow the practices of other spheres of American business.<sup>226</sup> In the event of such growth, this section would enable the state board to insure continued compliance with statutory public interest criteria. If it desired, the state board could treat its determinations pursuant to this section as new applications for licenses.

# (6) Proceedings concerning the issuance of licenses shall be conducted in accordance with the provisions of section 1.10.

COMMENTARY. This provision insures that licensing shall be controlled by the administrative procedures outlined in §1.10. Use of these procedures was prompted by the desire to enable the state board to utilize the same procedures for all water resources decisions; this continuity corresponds to national efforts to standardize administrative procedures.<sup>227</sup>

In existing modification statutes the procedures to be followed by administrative agencies in ruling upon license applications have rarely been set forth in explicit terms, except in those instances where refer-

223.47 U.S.C. §310 (b) (1970).

224. See 33 FCC ANN. Rep. 164-65 (1967).

225. Note, Diversification in Communication: The FCC and its Failing Standards 1969 UTAH L. REV. 494, 505.

226. Cf. J. GALBRAITH, THE NEW INDUSTRIAL STATE (1967). 227. See supra note 48.

ence has been made to general state administrative procedure acts.<sup>228</sup> It was felt that where there is a possibility of license denial, fair means of procedure ought to be followed in making determinations of professional competency. Constitutional due process requirements often make necessary a hearing and other protections for the affected person prior to a denial of an occupational license.<sup>229</sup> Inclusion of these administrative protections was explicitly proposed by the Arizona Study: "The requirements of notice and hearing should be spelled out clearly in instances of refusal to issue, renew or change a license or a permit. Persons affected, including those other than the permittee, should have an opportunity to present their positions."<sup>230</sup>

**§6.08** Weather Modification Permits

(1) The state board may issue permits in accordance with such procedures and subject to such conditions as it may by regulation establish to effectuate the provisions of this code. The state board shall not grant any permit unless:

(a) It finds that public interest, convenience, and necessity would be served thereby.

(b) The applicant is licensed pursuant to this code.

(c) A sufficient notice of intention is published and proof of publication is filed as required by section 6.11.

COMMENTARY. These sections, modeled in part upon a Texas provision,<sup>231</sup> establish conditions for the issuance of a modification permit. As mentioned earlier, the permit serves the function of regulating specified modification activity in a particular area over a given period of time. The public interest criterion of the Communications Act of 1934, as discussed in the commentary to §6.07 (1), is retained as a test for the granting of a permit. In those states which now require licensing, holding the license is a necessary step in getting a permit.<sup>232</sup> Publication requirements are incorporated in some statutes now, either in conjunction with separate hearing requirements,<sup>233</sup> or merely as notice that publication has been effectuated.<sup>234</sup> Some state statutes

228. See Arizona Study 89, 123.

229.1 K. DAVIS, supra note 20, at §§7.18-.20.

230. ARIZONA STUDY 123 and n. 26. Cf. MASS. ANN. LAWS ch. 6, §72 (1966); MONT. REV. CODE ANN. §89–318 (6) (Supp. 1971).

231. Ch. 58, §14.061 [1971] Tex. Laws 189. See WMA Nos. 11 and 13.

232. See, e.g., MONT. REV. CODE ANN. §89-318 (1) (Supp. 1971). This is

implied in other statutes. See, e.g., ORE. REV. STAT. §558.070 (1969).

233. See, e.g., WASH. REV. CODE ANN. §43.37.110 (1970).

234. See, e.g., NEV. REV. STAT. §544.180 (1967).

now provide no required procedure to be followed to secure a permit, other than to apply for it.<sup>235</sup>

(d) The applicant files with the state board proof of ability to respond in damages for liability on account of accidents arising out of the weather modification operations to be conducted by him in an amount sufficient to comply with standards established by the state board, but in no case less than fifty thousand dollars (\$50,000) for bodily injury to or death of one person resulting from any one incident, and five hundred thousand dollars (\$500,000) because of injury to or destruction of property of others resulting from any one incident. Proof of financial responsibility may be given by filing with the state board a certificate of insurance or a bond in the required amount.

COMMENTARY. This section corresponds to sections of several state statutes, which now require financial responsibility by modifiers in contemplation of protecting the public from losses generated by the weather modification activities.<sup>236</sup> These states by statute,<sup>237</sup> or by administrative regulation,<sup>238</sup> accept certificates of insurance or bonds as satisfaction of the financial responsibility requirement.

In some states the requisite amounts are imposed in the statute or regulations. Rather than follow this practice, the code adopts the Texas, Montana, and Washington formula enabling the state board to set satisfactory financial standards. This formula also was recommended by the Weather Modification Association.<sup>239</sup> Neither the Texas statute nor the WMA proposal delineated minimum or maximum amounts of coverage. Other explicit requirements range from a high of \$100,000 bodily injury and \$100,000 property injury (Oregon) to a low of \$15,000 of undesignated protection (West Virginia). The limits used in this section were adopted as *minimum* levels of adequate protection, based upon a feeling that the range of existing statutory coverage was insufficient to protect against disasters like, the Cirrus project and California's Yuba City floods.

235. See, e.g., UTAH CODE ANN. §73-15-1 (1968).

236. See, e.g., Colo. Rev. Stat. Ann. §151–1–6 (1) (b) (1963); Mont. Rev. Code Ann. §89–323 (Supp. 1971).

237. See, e.g., Colo. Rev. Stat. Ann. §151-1-6 (1) (b) (1963).

238. See ARIZONA STUDY 68 and n. 357.

239. See MONT. REV. CODE ANN. §89–323 (Supp. 1971); Ch. 58, §14.068 [1971] Tex. Laws 190; WASH. REV. CODE ANN. §43.37.150 (1970); WMA No. 7.

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In the enactment of such a provision, there was cognizance of the difficulties that modifiers face in obtaining insurance to cover their projects.<sup>240</sup> Yet, as long as there is potential harm that weather modification may visit upon a state's inhabitants, the public interest demands some form of protection; at present, insurance or bonding is the best means available. In the future it is possible that a federal program of insurance, much like the FDIC, might serve to relieve this difficulty.<sup>241</sup>

Although §6.08 (1) (d) prescribes minimum financial responsibility standards, delineation of a minimum by the legislature might not sufficiently restrict the scope of the state board's exercise of its discretion. Application of this power by the state board would permit the board, through standards beyond the minimum, to decide who should and who should not be deemed as proper licensee; there would be no check upon its ability to decide what should be deemed infringement of the law.<sup>242</sup> The fact that the board can set standards only for all modification operations, rather than shifting the standards dependent upon the nature of the applicant, does serve as a check upon the unbridled discretion of the state board. The decision to permit the state board to set the standards was intentional. It was felt that in an area as complex and related to technological capabilities as modification, experts should set the limits and the legislature by its standards should serve only to guarantee a bare minimum of protection below which even the board could not drop. This technique has been successfully utilized in the federal atomic energy indemnification and insurance statute.<sup>243</sup> State delegation under analogous circumstances has been sustained.244

(e) The appropriate fee is paid.

(f) The operation based on the permit is in conformity with the State Water Plan.

COMMENTARY. These sections, similar in form to language in the Texas statute,<sup>245</sup> provide that the permit fee, established in §6.08 (6),

240. See Taubenfeld, supra note 6, at 25–26. See generally Study of R. Davis, Weather Modifiers' Liability Insurance Experience, presented to Weather Modification Ass'n Meeting, Santa Barbara, Cal., Feb. 17, 1969; ARIZONA STUDY 66–67.

241. See Lyden & Shipman, supra note 119, at 299.

242. Cf. State ex rel. Davis v. Fowler, 94 Fla. 752, 114 So. 435 (1927). 243. 42 U.S.C. §2210 (1970).

244. See 1 F. COOPER, supra note 34, at 62-70, 83.

245. Ch. 58, §14.061 [1971] Tex. Laws 190.

must be paid before the permit is issued. They also provide for permit regulation of atmospheric water resources in a fashion that is consistent with the full hydrologic cycle through relating the modification permit to the State Water Plan.

(2) A separate permit shall be issued for each operation. These permits shall be effective for one (1) year from the date of issuance. The state board normally shall not issue more than one permit for similar activities in any given geographic area. (3) Permits may be renewed by filing an application with the state board, at least one (1) month before, but not prior to two (2) months before, the expiration of the existing permit. The application for renewal must re-establish compliance with the requirements of this section. However, no fee shall be paid for the renewal of a permit.

COMMENTARY. These sections, similar to Texas<sup>246</sup> and Montana statutory sections,<sup>247</sup> provide for the renewal of permits and establish the periods during which the permits shall be effective. Most permit laws now limit the document to a life of one year.<sup>248</sup> Further, most speak in terms of a separate permit for each operation. The latter practice is adopted by the code as it most directly corresponds to the regulatory concept of certifying each modifier with the license while determining the propriety of each operation through requiring a separate permit. The Weather Modification Association recommends that "the Board may issue only one active permit at a time for activities in a given geographic area, so that no two licensees have overlapping project areas."249 It is probable that this recommendation arises from difficulties in project management and evaluation where there is a potential overlap.<sup>250</sup> "Normally" the state board will comply with this policy in the issuance of permits. The flexibility provided by the addition of "normally" to the WMA proposal, coupled with the potential variable sizing of "any given geographic area," should enable the state board to cope with all types of modification proposals.

246. Ch. 58, §14.063 [1971] Tex. Laws 190.

247. MONT. REV. CODE ANN. §89-319 (Supp. 1969).

248. E.g., FLA. STAT. §403.331 (1971); NEV. REV. STAT. §544.140 (1967). See generally Arizona Study 90, n. 217.

249. WMA No. 10.

250. See Taubenfeld, supra note 6, at 14, 24–25; SPECIAL COMMISSION, supra note 14, at 110.

(4) No permit shall be construed to create any right beyond the terms, conditions, and periods of the permit.

(5) No permit, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such license, to any person.

COMMENTARY. The purposes of the restrictions of subsection (4) correspond to those explained in the commentary concerning 6.07 (3).

Unlike the license, however, the permit is not transferable. This was done to insure that individual operations would not escape regulation through initiation by a qualified modifier with transfer to an uncertified person. To the extent that modifiers amalgamate into corporate conglomerates, this requirement could prove troublesome if the corporations attempted structural reformation. However, the minor corporate inconvenience—especially when compared to existing tax and security requirements for reorganization—was outweighed by the public protection generated through the process of permit reacquisition.

(6) The state board, by regulation, shall establish a schedule of fees to accompany permit applications. In preparing this schedule, the state board shall insure that the fee to be paid by each applicant is not less than 1 per cent of the estimated cost of such operation, such cost to be estimated by the state board from the evidence available to it.

(7) Proceedings concerning the issuance of permits, or modifications of their terms, shall be conducted in accordance with the provisions of section 1.10.

COMMENTARY. Section 6.08 (6) establishes a procedure for the determination of permit fees. Part of this section corresponds to Nevada and Montana statutes.<sup>251</sup> According to the NSF study, Nevada has not had difficulty with the operation of its provisions.<sup>252</sup> A flat fee was rejected in part because the percentage proposal would act as an indirect tax to finance an expansive program of state board sponsored modification. There is further validity to a percentage, in contrast to a flat fee, since the expenses of regulation will not remain constant,

252. Taubenfeld, supra note 6, at 17-18, 23-24.

<sup>251.</sup> MONT. REV. CODE ANN. §89-324 (Supp. 1971); NEV. REV. STAT. §544.200 (1967).

but will vary proportionally to the cost of the project.<sup>253</sup> The fact that the state board can exceed the 1 per cent base offers the flexibility to deal with more complicated projects where regulatory expenses might be greater. The costs of modification projects to date have ranged from a few hundred dollars to hundreds of thousands of dollars;<sup>254</sup> therefore, estimated fee receipts, even at the minimum base, could vary from approximately two dollars to six thousand dollars, based on a hypothetical project cost range of \$200 to \$600,000. The commentary in 60.07 (6) explained the use of standard (1.10) administrative procedures. Similar reasons of administrative fairness and continuity of application throughout the code dictated use of the same procedures for the issuance or modification of permits.

**§6.09** Suspension or Revocation of Licenses and Permits

(1) The state board may suspend or revoke any license or permit if it finds that the licensee no longer possesses the qualifications necessary for the issuance of a new license or permit, or if it finds that the licensee has violated any of the provisions of this code. The permit or license may be temporarily suspended during investigations of suspected violations.

(2) Suspensions, including temporary suspensions, or revocations of licenses or permits shall be subject to judicial review as orders of the state board, in accordance with the provisions of section 1.11. The suspension or revocation shall remain in effect throughout such litigation.

COMMENTARY. This section provides for the suspension or revocation of licenses or permits. Several state statutes grant revocation and suspension powers for dealing with those who misuse modification licenses or violate statutory or administrative regulations.<sup>255</sup> These statutes also expressly provide for or imply the availability of judicial review. For the sake of administrative consistency, this section adopts the judicial review provisions of §1.11. In the interests of public safety and welfare, this section incorporates the recommendation of the Arizona Study: "Regulators should be [expressly] empowered summarily to [temporarily] suspend permits and licenses, but hearings on suspensions should be given as soon thereafter as practicable."<sup>256</sup>

253. See Cal. WATER RESOURCES BD., BULL. No. 16, supra note 58, at 88. Cf. ARIZONA STUDY 74-77.

254. ARIZONA STUDY 74-75.

255. See, e.g., FLA. STAT. §§403.331 (2), .401 (1) (1971); MONT. REV. CODE ANN. §89–329 (Supp. 1971). 256. ARIZONA STUDY 125, n. 12. **\$6.10** Notice of Intention

(1) Prior to undertaking any weather modification activities the licensee shall file with the state board and the appropriate water management district or districts and also cause to be published or broadcast a notice of intention. The licensee, if a permit is issued, shall confine the permitted operation substantially within the time and area limits set forth in the notice of intention, unless modified by the state board, and his activities also shall substantially conform to any conditions imposed by the state board upon the issuance of the permit or to the terms of the permit as modified after issuance.

(2) The notice of intention shall set forth at least all of the following:

(a) the name and address of the licensee;

(b) the nature and object of the intended operation and the person or organization on whose behalf it is to be conducted;

(c) the area in which and the approximate time during which the operation will be conducted;

(d) the area which will be affected by the operation as nearly as the same may be determined in advance; and

(e) the materials and methods to be used in conducting the operation.

(3) When practical, the state board may require that section 6.10 (2) (d) determinations be based on climatic models and mathematical simulation.

COMMENTARY. Aside from its purposes of regulating and planning individual operations and protecting the public from incompetent operators, the code compels forewarning of modification activities so that inhabitants of the affected areas can take proper measures. The code accomplishes this latter objective through the notice requirements in §6.10. Similar requirements exist in several state licensing statutes.<sup>257</sup> Idaho, Utah, and Wisconsin, although requiring licenses for modifiers, do demand the filing of notices of impending operations.<sup>258</sup> This section's notice requirements, when coupled with the publication requirements in §6.11 (1), should provide sufficient advance public notice. Section 6.11 (2) uses this same notice format

257. See, e.g., FLA. STAT. §§403.341, .351 (1971); NEV. REV. STAT. §§544.170, .180 (1967).

258. IDAHO CODE ANN. §22-3201 (1968); UTAH CODE ANN. §73-15-1 (1968); WIS. STAT. ANN. §195.40 (1957), as amended, (Supp. 1971).

for broadcasting in those instances demanding immediate modification implementation, where publishing is not feasible.

The stipulation in §6.10 (3) is perhaps the most unusual aspect of this section. The notion that the state board may require "affected area" determinations to be based upon climatic models and mathematical simulation could evolve as one of the most significant provisions in the code. Simulation and model studies are one of the fastest growing subjects in meteorological research,<sup>259</sup> at the heart of plans for hurricane, tornado, and large-scale climatic modification.<sup>260</sup> Use of this technique by the state board could enable it to make its policy decisions properly, in full awareness of at least the majority of the consequences of those decisions.<sup>261</sup>

\$6.11 Publication or Broadcasting of Notice of Intention; Filing of Proof of Publication or Broadcast

(1) The licensee shall cause the notice of intention provided for in section 6.10 to be published at least once a week for two (2) consecutive weeks in a newspaper having general circulation within any county wherein the operation is to be conducted; if the affected area is located in or includes a county or counties other than the one in which the operation is to be conducted, then such notice shall also be published in a like manner in a newspaper having general circulation within the affected counties.

(2) Where any weather modification effort would require immediate implementation, the state board may waive the publication requirement and require that the licensee cause a summary of facts drawn from the notice of intention to be broadcast at

259. See material cited in note 91.

260. See Special COMMISSION, supra note 14, at 54, 64, 76-77.

261. The significance of such a tool is that, especially in terms of climate modification, the state board might be making policy decisions which would determine complex questions of the allocation of economic resources throughout the state—e.g., which regions of the state should by climate be "dedicated" to agriculture, industry, tourism, etc. Aside from the constitutional questions which such decisions might involve, complicated questions of planning far exceeding those now plaguing the state (in land and water use planning) would ensue. See generally, Ackerman, Economic Analysis of Weather: An Ideal Weather Pattern Model, in HUMAN DIMENSIONS OF WEATHER MODIFICATION 61 (W. Sewell ed. 1966). For consideration of similar questions, in terms of the ramifications of changing the track of a hurricane, or of decreasing its intensity, see Morris, The Law and Weather Modification, 46 BULL. AM. ME-TEOR. Soc'Y 618 (1965); Johnson, Weather Modification and Legal Research, in HUMAN DIMENSIONS OF THE ATMOSPHERE 87, 95 (1968).

least twice a day for two (2) days over a radio or television station capable of reception within the affected area. If no single station broadcasts throughout the entire affected area, the licensee shall broadcast notices of intention over sufficient stations to encompass the entire area.

(3) Proof of publication or broadcast shall be filed by the licensee with the state board within five (5) days from the date of the last publication or broadcast of notice. Proof of publication shall be by copy of the notice as published, attached to and made a part of the affidavit of the publisher of the newspaper publishing the notice. Proof of broadcast shall be by a copy of the broadcast script, attached to and made a part of the affidavit of the owner or manager of the station broadcasting the notice.

COMMENTARY. Section 6.11 provides the "traditional" requirements for publishing notice of intention to initiate and operate a weather modification activity. Nine states now direct the publication of project notices in newspapers of general circulation.<sup>262</sup> The majority of subsection (1) was taken from the Nevada statute;<sup>263</sup> subsections (2) and (3) are original. The Nevada duration of publication requirements were shortened to reflect the need for notice demands to comply with the realities of technology and the "time-lag" on modification efforts. Even this will not cover all situations;<sup>264</sup> hence, subsection (2) was drafted to authorize waiver of the publication requirements in instances where, in a technical or emergency sense, there was not time to publish. Thus, there would be no need to wait at least two weeks before attempting to divert or reduce the intensity of a hurricane about to hit the coast.<sup>265</sup> With this section's waiver authority, it is possible to adjust the state's regulatory machinery to instances which, although not strict "emergencies" in a sense required to apply \$6.06 exemption, are technologically incapable of performance unless

262. California, Florida, Montana, Nevada, Oregon, Pennsylvania, Texas, West Virginia, Washington.

263. NEV. REV. STAT. §544.180 (1) (1967).

264. See, e.g., STAFF OF SENATE SELECT COMMITTEE ON NATIONAL WATER RE-SOURCES, 86TH CONG., 2D SESS., WATER RESOURCES ACTIVITIES IN THE UNITED STATES: WEATHER MODIFICATION 38 (Comm. Print 1960); U.S. ADVISORY COMMITTEE ON WEATHER CONTROL, *supra* note 13, at 287. Both of these studies indicate examples of modification potential limited to a short time interval.

265. Similar provisions are found in emergency sections of other state statutes; these do not afford the public any immediate notice, but are restricted to notice "as soon after the granting of permission by the department as is practicable." See, e.g., CAL. WATER CODE §413.5 (West 1971). action is immediately taken. Recent Senate hearings on the need for federal support of weather modification indicate that such technological limits may become more frequent as modification is expanded.<sup>266</sup>

In subsection (2), the concept of a new form of notice is implemented to provide some public information in instances where emergency conditions preclude notice publication.

On the basis of supposition as to the limited attention traditionally drawn to typical legal notices, it was felt that a new form of notice might be used in emergency circumstances. In view of the large number of homes with either a radio or television receiver, use of the airwaves is suggested to ensure a greater certainty of reception of the notice. Although not the basis for this inclusion in the code, similar provisions appear in the Pennsylvania and West Virginia statutes.<sup>267</sup>

#### **§6.12** Records and Reports of Licensees

(1) Each licensee shall keep and maintain a record of all operations conducted by him pursuant to his license and each permit—showing the method employed, the type of equipment used, materials and amounts thereof used, the times and places of operation of the equipment, the name and post office address of each individual participating or assisting in the operation other than the licensee, and such other general information as may be required by the state board—and shall report the same to the state board at the time and in the manner required.

(2) The state board shall require written reports in such manner as it provides, not inconsistent with the provisions of this code, covering each operation for which a permit is issued. It shall also require written reports from such organizations as are exempt from the license and permit provisions of this code.

(3) All information on an operation shall be submitted to the state board before the information on such operation is released to the public.

(4) The reports of all licensees shall be available for public examination.

COMMENTARY. This section is intended to assist in the task of information acquisition regarding all modification operations. Modification reports and the corollary evaluations provided in §6.13 can be of

266. See Hearings, supra note 103.

267. See PA. STAT. ANN. tit. 3, §1109 (c) (Supp. 1971); W. VA. CODE ANN. §29-2B-8 (c) (Supp. 1971).