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40-18

Regulated Riparian Model Water Code



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PREFACE

The Model Water Code Project of the American Society of Civil Engineers (ASCE) was begun in 1990 under the direction of Professor Ray Jay Davis of the Brigham Young University School of Law. Its purpose was to develop proposed legislation for adoption by state governments for the allocation of water rights among competing interests and the resolution of other quantitative conflicts over water. Professor Davis enlisted the active aid of a large number of engineers, lawyers, and others interested in improving the administration of water allocation laws in the states of the United States. Input was procured from engineers engaged in working with water in many different ways: government administrators working with water from a variety of perspectives; lawyers representing development interests or environmental interests; business people representing a wide spectrum of industries; academics from disciplines including civil engineering, economics, hydrology, law, and political science; environmental activists; and just plain folks. Several dozen people from such varied backgrounds gave detailed critiques of the drafts of the project. Many of these people also attended two or more meetings per year, during which the drafts were discussed in detail. Probably each person who contributed to this project could pick at least a few points as to which he or she thinks the end products could be improved—the end products are not any single person's efforts, interests, or conclusions. Those involved in the project agree that, overall, the end products are carefully balanced to represent a coherent body of law that would markedly improve the law of water allocation as presently found in many States. (The term "State" is used throughout this Code to refer to a state of the United States, and not to states in the international sense, although such states might also find much of use in this project.)

Originally, the hope was to prepare a single Model Water Code appropriate for any or every State. Although there has been notable convergence among the water laws of eastern and western States over recent decades, there continues to be more divergence than convergence, a divergence that will almost certainly continue for many years. It proved impossible to craft a single Code appropriate for all the States. In the end, two Model Water Codes were prepared—the Regulated Riparian Model Water Code and the Appropriative Rights Model Water Code—reflecting the different needs and legal traditions of eastern and western States. In part because of the decision, made fairly late in the drafting process, to prepare two Model Water Codes, the project remained unfinished when Professor Davis retired from Brigham Young University. In August 1995, Professor Joseph W. Dellapenna of the Villanova University School of Law succeeded Professor Davis as director of the project. Professor Dellapenna had chaired the working group that drafted the regulated riparian version of the Model Water Code. The Regulated Riparian Model Water Code was approved as ASCE Standard 40-03 in 2003. The Appropriative Rights Model Water Code is still being developed into a standard. The original goal is reflected in that each Code contains as much language identical to that in the other Code as possible. A legislature considering revising its water laws should examine both Model Codes.

To understand why two complete, separate Model Water Codes proved necessary requires some understanding of the path by which States east of Kansas City created a highly administered regulatory approach to water allocation within the State, a path quite different from the path followed in the States

west of Kansas City. States to the west of Kansas City experimented with private property systems that coalesced into the doctrine of appropriative rights. States to the east of Kansas City continued to adhere to the common property model of common law riparian rights. See Joseph Dellapenna, *Riparianism*, in *WATERS AND WATER RIGHTS* chs. 6-10 (5 vols., Amy Kelley ed., 2015) ("Dellapenna"), § 6.01(b). Although based on the ideal of sharing, riparian rights proved less than helpful whenever demand for water began to outstrip supplies. The Pacific Coast States and the High Plains States (from North Dakota to Texas) eventually abandoned riparian rights in favor of appropriative rights, although these States were unable to abolish riparian rights completely through inability or unwillingness to compensate the owners. See *id.* §§ 8.01, 8.02. As a result, the States with a dual system combine the worst features of both bodies of law, unsuitable to the more hydrologically developed eastern States. Even Mississippi, the only eastern State to adopt a dual system (in 1955), abandoned it in 1985 in favor of what in this Code is called "regulated riparianism." See *id.* § 8.05 to 8.05(b). Alaska was the latest western State to switch from riparian rights to appropriative rights. Alaska's legislature purported to abolish riparian rights, although no court has yet considered whether this succeeded. At this time, therefore, one must conclude that the question of whether Alaska is a "pure" appropriative rights State or is, in fact, a dual system State has to be regarded as unresolved. See *California-Oregon Power Co. v. Beaver Portland Cement Co.*, 295 U.S. 142 (1935); Dellapenna, § 8.02.

As eastern States have become disenchanted with common-law riparian rights, they have not embraced appropriative rights. Instead, eastern States developed a highly regulated system of water administration based on riparian principles that could best be described as a system of public property. Regulatory antecedents to regulated riparianism go back to colonial times in several States. See Dellapenna, §§ 9.01, 9.02. Initially, the transition from extremely limited regulatory intervention to more or less comprehensive regulation resulted from incremental changes in earlier systems rather than a conscious design to revolutionize the system of water rights. As a result, there is disagreement over when to date the emergence of the first true regulated riparian system. Nor is there a fully agreed name for the new system, although regulated riparianism appears to be about as succinctly descriptive as one can hope. Suggested alternative names have serious defects. "Eastern permit systems" or the like tells us nothing about the nature of the legal regime, and leave one more open to the charge that the new system has taken rather than regulated pre-existing property rights. "Non-temporal priority permit systems" is more immediately descriptive than "regulated riparianism" but it is rather too much to expect people to say frequently and also leaves more room for the allegation that property was taken by the legislation. The name "regulated riparianism" emphasizes both that the administrative permit process proceeds on essentially riparian principles and that the new system is a regulation of rather than a taking of the older riparian rights. *Id.* § 9.01. As a result, the name "regulated riparianism" has gained a general acceptance. See, e.g., *City of Waterbury v. Town of Washington*, 802 A.2d 1102 (Conn. 2002) (holding that Connecticut has enacted a regulated riparian system).

The transition to the true regulated riparian system first occurred by 1933 when Maryland enacted a fully regulated system.

although the realization that something truly new in water law had emerged did not occur for another few decades. *See* Dellapenna, ch. 9. The emergence of a new form of water law was missed because the regulatory system was not introduced as a radical revision of the water law of a particular state. In most States, it emerged gradually through a process of small legislative interventions that eventually, and cumulatively, did fundamentally change the water law of the State. As a result, it is sometimes difficult to determine precisely when, in a particular state, the transition from riparian rights to regulated riparianism occurred. In several States, it is still unclear whether the law would better be described as still basically riparian rights with limited legislative interventions or as regulated riparianism. As of 2015, 17 States had enacted a regulated riparian system for surface waters, generally including underground water sources as well. Two other States apply a regulated riparian system to underground water sources only. Several States have not actually implemented the regulated riparian statutes on the books, and in several others the limitations on the reach of regulatory authority allow serious questions as to whether those States truly have enacted a regulated riparian statute. With those caveats in mind, the states are:¹

Maryland (1933)
 Minnesota (1937)
 Iowa (1957)
 Wisconsin (1957)
 Delaware (1959)
 New Jersey (1963)
 Kentucky (1966)
 Florida (1972)
 North Carolina (1973)**
 Georgia (1977)****
 New York (1979)*
 Connecticut (1982)
 Illinois (1983)**
 Arkansas (1985)*
 Massachusetts (1985)***
 Mississippi (1985)
 Hawaii (1987)
 Virginia (1989)****
 Alabama (1993)*
 Michigan (2006)
 South Carolina (2010)****

In addition, the unusual arrangements of the Delaware River Basin Compact and the Susquehanna River Basin Compact create a regulated riparian system in those basins (stretching across four and three States, respectively) under interstate supervision or management. *See id.* § 9.06(c)(2). In addition, the unusual arrangements of the Delaware River Basin Compact and the Susquehanna River Basin Compact create a regulated riparian system in those basins (stretching across four and three States respectively) under interstate supervision or management. *See id.* § 9.06(c)(2); Joseph Dellapenna, *The Delaware and Susquehanna River Basins*, in 6 *WATERS AND WATER RIGHTS* 137-47 (1994 replacement vol.).

¹ The asterisks indicate:

* Less completely developed or implemented than for other regulated riparian States.
 ** Applicable to underground water only and requiring permits in capacity use areas only.
 *** Applicable to critical management areas only.
 **** This date refers to the adoption of a regulated riparian statute that applies to surface water sources. These states had adopted similar statutes for groundwater earlier (South Carolina, 1969; Georgia, 1972; Virginia, 1973).

One might add a few examples of regulated riparian systems in western States. As indicated in the foregoing chart, Hawaii has enacted such a statute for water in that state, although Hawaii does not really share the western legal tradition generally or particularly regarding water. *See* Joseph Dellapenna, *Related Systems of Water Law*, in *WATERS AND WATER RIGHTS* § 10.1(c). The Arizona Groundwater Management Act of 1980, as well, perhaps, as some other western statutes relating to groundwater, also seems more in the regulated riparian mode than in the appropriative rights mode for surface sources in the same state. ARIZ. REV. STAT. ANN. §§ 45-401 to 45-655. These statutes, although adopting the sort of public management approach characteristic of regulated riparian statutes, operate against a background of appropriative rights and have some notably different features from otherwise similar statutes found in eastern States or Hawaii. Therefore, the western statutes are seldom referred to in the Regulated Riparian Model Water Code.

The most fundamental departure from common law riparian rights found in regulated riparian statutes is the requirement that, with few exceptions, no water is to be withdrawn from a water source without a permit issued by the State within which the withdrawal occurs. Such a requirement is based on a State's police power to regulate water withdrawal and use in order to protect public health, safety, and welfare. Regulated riparian statutes allocate the right to use water not on the basis of temporal priority but on the basis of whether the use is "reasonable" (or substitute terms such as "beneficial," "reasonable-beneficial," or "equitable"). The statutes also usually abolish common-law restrictions based on the location of the use and require periodic review of the continuing social utility of the permits. Finally, the statutes create mechanisms for long-term planning and for otherwise providing for the public interest in the waters of the State. *See* Dellapenna, §§ 9.03 to 9.05. This Regulated Riparian Model Water Code follows this pattern for the allocation of the waters of a State. Although recognizing the necessity of integrating water allocation with regulations designed to protect water quality, it does not attempt to exhaust the latter field. The Code does address the difficult question of multijurisdictional transfers of water, whether across a water basin boundary or across a state line. *See* Dellapenna, § 9.06.

Today, the main threats to the availability of water in eastern States, both as to quantity and as to quality, are not pollution or withdrawal, but the physical and ecological transformation by human intervention of water sources and the lands on or in which the sources are found. Dams not only "withdraw" water, they disrupt temperature and nutrient patterns on which rivers depend for their ecological diversity, as does the "straightening" of a river. Repeated withdrawals of water from water sources both deplete the quantity of water remaining and alter the waste assimilative and other natural aspects of the water source, often to the detriment of potential users—human and non-human. Sediments from farms suffocate many small forms of aquatic life. Vacationers who cut trees to improve the view from summer homes may erode stream banks or lakeshores. As a result, the stream then carries more sediment and becomes wider, shallower, and warmer, making the water unfit for many important organisms and for many significant uses. The Regulated Riparian Model Water Code addresses only direct use of the water. It does provide some provisions for the coordination of the regulation of all human activity relevant to the waters of the State, but it does not address directly human activities other than direct uses that, often unintentionally, despoil the waters of the State.



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The Water Regulatory Standards Committee comprises individuals from many backgrounds, including consulting engineering, law, research, and those in the construction industry, education, government, design, and private engineering. Work on this standard began in 1995 and incorporates information developed by the former Water Laws Committee of the Society as described in the preface. Those individuals who served on the Water Regulatory Standards Committee in the drafting of ASCE Standard 40-03 were:

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NOTE: FORM AND SOURCES

A few words about the form of this Code and how that form reflects the goals of the drafters. The Code follows the form commonly used today in the drafting of proposed uniform state laws under the auspices of the National Conference of Commissioners of Uniform Laws. That form consists of statutory language in boldface that a legislature could enact with or without change. This language is arranged in sections, generally consisting of a single sentence, for ease of citation. The numbering of the sections consists of three parts, indicating the chapter of the Code, the part of the chapter, and the sequential numbering of each section within that part. Each section in this Code also contains an “R” to distinguish it from sections in the Appropriate Rights Model Water Code (denominated “A”). For example, § 2R-2-02 means section 2 of Part 2 of Chapter 2 of the Regulated Riparian Model Water Code. Each section necessarily is optional in that a state legislature, even if it were to decide to enact the bulk of this Code, could delete or change any particular section. Nonetheless, the drafters of this Code strove to create a complete, comprehensive, and well-integrated statutory scheme for creating or refining a regulated riparian system of water law capable of dealing with the water management problems of the twenty-first century. The drafters have concluded that nearly every section of this Code is necessary to achieve that goal. Several sections (§§ 2R-2-22, 3R-1-03, 4R-4-01 to 4R-4-08, 5R-4-09, and 5R-5-03), however, are specifically denominated

“optional.” This indicates that the drafters considered that these sections might not be necessary or appropriate to the needs of a particular state. These sections, therefore, merit special consideration should any legislature consider enacting this Regulated Riparian Model Water Code. A coherent and workable Code would still result were all of the “optional” sections to be omitted.

This Code refers to the latest *ASCE Policy Statements* and to certain common references. *ASCE Policy Statements* typically are updated every three years and should be consulted for changes occurring after this document is completed. For the eastern tradition of water law, the central source is Joseph Dellapenna, *Riparianism* [“Dellapenna”], in *WATERS AND WATER RIGHTS* chs. 6–10 (5 vols., Amy Kelley, ed., 1991) [“WATER AND WATER RIGHTS”]. Other standard sources are FRANK MALONEY, RICHARD AUSNESS, AND J. SCOTT MORRIS, *A MODEL WATER CODE* (1972) [“MALONEY, AUSNESS, AND MORRIS”]; LEONARD RICE AND MICHAEL WHITE, *ENGINEERING ASPECTS OF WATER LAW* (1987) [“RICE AND WHITE”]; JOSEPH SAX, BARTON THOMPSON, JR., JOHN LESHY, AND ROBERT ABRAMS, *LEGAL CONTROL OF WATER RESOURCES* (4th ed. 2006) [“SAX et al.”]; GREGORY WEBER, JENNIFER HARDER, AND BENNETT BEARDEN, *CASES AND MATERIALS ON WATER LAW* (9th ed. 2014) [“WEBER, HARDER, AND BEARDEN”]. To simplify citation throughout, these standard references are cited only in the form indicated in brackets after the reference.

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CHAPTER 1

DECLARATIONS OF POLICY

This chapter sets forth the policies that are to inform the interpretation of the Regulated Riparian Model Water Code in both litigious and administrative settings. These policy statements describe in general terms the goals the administering State Agency and courts are to pursue in carrying the Code into effect. Although the goals sometimes conflict, together they express a comprehensive vision of the waters of the State as public property to be administered by the Agency to achieve optimum social utility. The Agency is given considerable discretion to resolve policy conflicts when they appear in concrete situations.

“Discretion” as used here does not mean “arbitrary.” Rather, it refers to decision according to legal standards that are to guide the decisions of the Agency. Those standards are carefully delineated in this Code. To call a decision “discretionary,” as used in this Code, then is to use a neutral term that describes the nature of the decision-making process; it is not in any sense pejorative.

§ 1R-1-01 PROTECTING THE PUBLIC INTEREST IN THE WATERS OF THE STATE

The waters of the State are a natural resource owned by the State in trust for the public and subject to the State’s sovereign power to plan, regulate, and control the withdrawal and use of those waters, under law, in order to protect the public health, safety, and welfare by promoting economic growth, mitigating the harmful effects of drought, resolving conflicts among competing water users, achieving balance between consumptive and nonconsumptive uses of water, encouraging conservation, preventing excessive degradation of natural environments, and enhancing the productivity of water-related activities.

Commentary: This section sets forth the basic policies of the Regulated Riparian Model Water Code, delineating the central issue to be resolved by the State Agency in managing the water of the State: the need to balance economic growth against other important values. In a general sense, this balance could be described as “the public interest.” That term is defined in a more general way in section 2R-2-18. For an analysis of how States have worked with the several policies expressed in this section, see generally Dellapenna, § 9.03. This Code defines the interest of the State in major part through the concept of “sustainable development.”

Numerous policies of the American Society of Civil Engineers (ASCE) support specific aspects of this section. See *ASCE Policy Statements* No. 131 on Growth and Development, No. 139 on Public Involvement in the Decision Making Process, No. 243 on Ground Water Management, No. 275 on Atmospheric Water Management, No. 337 on Water Conservation, No. 408 on

Planning and Management for Drought, No. 418 on the Role of the Civil Engineer in Sustainable Development, No. 422 on Watershed Management, and No. 437 on Risk Management. Thus, although no single policy can be cited as expressing the policy of this section, collectively there can be little doubt that the policies do support it.

The reference to the ownership of the waters by the State in trust for the public echoes the idea of the public trust doctrine. *National Audubon Soc’y v. Superior Ct.*, 658 P.2d 709 (Cal.), cert. denied sub nom. *City of Los Angeles v. National Audubon Soc’y*, 464 U.S. 977 (1983); *United Plainsmen Ass’n v. North Dakota State Water Conserv. Comm’n*, 247 N.W.2d 457 (N.D. 1976); Douglas Grant, *Western Water Rights and the Public Trust Doctrine: Some Realism about the Takings Issue*, 27 ARIZ. ST. L.J. 423 (1995); Joseph Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970). The public trust doctrine has been invoked with limited success to unsettle apparently settled property rights in several western states. Joseph Sax, *Some Thoughts on the Decline of Private Property*, 58 WASH. L. REV. 481 (1983). The public trust doctrine has had a much lower profile in riparian law than it has assumed in appropriative rights, if only because property notions remain less fully developed in riparian law. Dellapenna, § 7.05(b). In either event, the formulation in the Code is not a direct expression of the public trust doctrine, for this formulation is found in the law even of States that most insistently reject the applicability of the public trust doctrine to the waters of the State. See COLO. CONST., art. xvi, § 5. This formulation compels neither the acceptance nor the rejection of the public trust doctrine as such. It does serve to underscore the reality that water as an ambient resource cannot be fully subordinated to private rights; water is always a matter of public concern and subject to regulation in the public interest.

Cross-references: § 1R-1-11 (preservation of minimum flows and levels); § 2R-2-06 (consumptive use); § 2R-2-13 (nonconsumptive use); § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); § 6R-3-01 (standards for a permit).

Comparable statutes: ALA. CODE § 9-10B-2; CONN. GEN. STAT. ANN. § 22a-366; DEL. CODE ANN. tit. 7, § 6001; FLA. STAT. ANN. § 373.016; GA. CODE ANN. §§ 12-5-21, 12-5-91; HAW. REV. STAT. § 174C-2(a); IND. CODE ANN. § 13-2-1-8; IOWA CODE ANN. § 455B.262(3); KY. REV. STAT. ANN. § 151.110; MD. CODE ANN., NAT. RES. § 8-801(1); MINN. STAT. ANN. § 105.38; MISS. CODE ANN. § 51-3-1; N.J. STAT. ANN. § 58:1A-2; N.Y. ENVTL. CONSERV. LAW §§ 15-0103, 15-0105(1); N.C. GEN. STAT. § 143-215.13; VA. CODE ANN. § 62.1-11; VA. CODE ANN. § 62.1-44.36, 62.1-44.84; WIS. STAT. ANN. § 144.25(1).

§ 1R-1-02 ENSURING EFFICIENT AND PRODUCTIVE USE OF WATER

Pursuant to this Code, the State undertakes, by permits and other steps authorized by this Code, to allocate the waters of the State among users in a manner that fosters efficient and productive use of the total water supply of the State in a sustainable manner in the satisfaction of economic, environmental, and other social goals, whether public or private, with the availability and utility of water being extended with a view to preventing water from becoming a limiting factor in the general improvement of social welfare.

Commentary: In order to achieve the goals set forth in this section, the Regulated Riparian Model Water Code adopts the basic policy of requiring a permit for all water uses within the State, except for those that are exempted pursuant to this Code. Permits are to achieve efficient and productive use of the water by the standard of “reasonable use” as defined in the Code. The section acknowledges that the efficient and productive use of water includes environmental as well as economic uses, with the ultimate goal of “sustainable development.” While those two categories of use might well exhaust the possibilities, the Code leaves open whether there are other social goals that might be included within the purview of the Code. One other goal that might play a significant role is concern about social equity, a policy that is introduced explicitly in the next section and in section 1R-1-05. *See, e.g., Mason v. Hoyle*, 14 A. 786 (Conn. 1888). *See generally* MALONEY, AUSNESS, AND MORRIS, at 170-73; RICE AND WHITE, at 27, 162; SAX *et al.*, at 39-42, 159-97; Robert Beck and Amy Kelley, *The Uses of and Demands for Water*, in WATERS AND WATER RIGHTS § 2.02. *See also* ASCE Policy Statements No. 243 on Ground Water Management, No. 337 on Water Conservation, and No. 418 on the Role of the Civil Engineer in Sustainable Development.

One particular problem that apparently impedes efficiency and productivity under appropriative rights is a tendency to “overappropriate” in order to capture future rents. In order to discourage speculation in water rights and to preclude the holding of water merely to deny its use by others, the Code authorizes the State Agency to require diligence in putting water to actual use once a permit is issued, and retention of an unexercised right is only authorized for limited periods and for justifiable reasons. One expression of this policy in the Code is the requirement that the State Agency set a time limit for the construction of any necessary facilities as a condition to permits where such construction is contemplated.

Cross references: § 2R-1-01 (the obligation to make only a reasonable use of water); § 2R-2-18 (the public interest); § 2R-2-20 (reasonable use); § 2R-2-24 (sustainable development); § 2R-2-32 (waters of the State); § 6R-3-02 (determining whether a use is reasonable); § 7R-1-01 (permit terms and conditions); § 7R-1-03 (forfeiture of permits).

Comparable statutes: ALA. CODE § 9-10B-2(5), (6); DEL. CODE ANN. tit. 7, § 6001(a)(6), (b)(1), (c)(1), (4); FLA. STAT. ANN. § 373.016(2); GA. CODE ANN. § 12-5-91; HAW. REV. STAT. § 174C-2(C); ILL. COMP. STAT. ANN. ch. 525, ¶¶ 45/2, 45/3; IND. CODE ANN. §§ 13-2-1-1, 13-2-2-2; KY. REV. STAT. ANN. § 151.110; MISS. CODE ANN. § 51-3-1; N.Y. ENVTL. CONSERV. LAW § 15-0105(2), (4); S.C. CODE ANN. § 49-5-20; VA. CODE ANN. §§ 62.1-11(C), (E), 62.1-44.36.

§ 1R-1-03 CONFORMITY TO THE POLICIES OF THE CODE AND TO PHYSICAL LAWS

In order to promote efficiency, equity, order, conjunctive management, and stability in the utilization of the water resources of this State over time, this Code and all orders, permit terms or conditions, or regulations issued pursuant to this Code, are to be interpreted to achieve the policies embodied in this Code and to conform to the physical laws that govern the natural occurrence, movement, and storage of water.

Commentary: Too often, the law relating to water has survived without change, despite the emergence of a deeper understanding of the hydrologic cycle that renders older laws virtually obsolete. The Regulated Riparian Model Water Code challenges administrators and courts alike to keep the interpretations of and regulations under the Code not only consistent with the policies in the Code but also abreast of current scientific knowledge in so far as doing so does not directly contradict the express terms of the Code. Generally, doing so will require knowledge of interconnected surface and subsurface systems in a water basin, although many water projects will not be tied strictly to basins, and the most important disputes are likely to involve transfers (or proposals to transfer) out of basin. As this analysis suggests, the mandate to interpret the Code consistent with physical laws is directed primarily at ensuring conjunctive management of surface and underground waters, although the mandate is certainly not limited to that goal. It is important to note that this section speaks of all physical laws. The other policy goals mentioned in this section are addressed in more detail in other sections of this chapter. On the need for the law to conform to physical laws, see RICE AND WHITE, at 19-20; Dellapenna, § 6.02. *See also* Robert Beck and Amy Kelley, *The Water Resource Defined and Described*, in WATERS AND WATER RIGHTS § 1.03; Robert Beck and Amy Kelley, *The Legal Regimes*, in WATERS AND WATER RIGHTS §§ 4.05, 4.08. The policy expressed in this section is at least implicit in the American Society of Civil Engineers’ policy recommending peer review of environmental regulations. ASCE Policy Statement No. 403 on Consultation on Environmental Regulations.

Cross references: § 1R-1-09 (coordination of water allocation and water quantity regulation); § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); § 2R-2-28 (water basin); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 6R-4-01 to 6R-4-05 (coordination of water allocation and water quality regulation); §§ 8R-1-01 to 8R-1-07 (multi-jurisdictional transfers).

§ 1R-1-04 COMPREHENSIVE PLANNING

Recognizing the importance of proper planning and management of the waters of the State to the health, safety, and welfare of the people, the State will develop a comprehensive water allocation plan and devise appropriate conservation and drought management strategies to serve the public interest in the waters of the State through establishing and maintaining sustainable development of the waters of the State.

Commentary: In order to achieve the policy goals of the Regulated Riparian Model Water Code, the State must undertake comprehensive planning and conservation both for normal conditions and to respond to particular situations. The standard available falls below that available under normal conditions.

Effective and efficient management of water as a public resource is simply impossible without adequate planning. *See* Dellapenna, § 9.05(a). The support of the American Society of Civil Engineers for comprehensive water planning is expressed in *ASCE Policy Statements*. *ASCE Policy Statements* No. 243 on Ground Water Management, No. 348 on Emergency Plans for Water Supply, No. 408 on Planning and Management for Droughts, No. 422 on Watershed Management, No. 437 on Risk Management, and No. 447 on Hydrologic Data Collection.

Cross references: § 1R-1-10 (water conservation); § 2R-2-04 (comprehensive water allocation plan); § 2R-2-09 (drought management strategies); § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); §§ 7R-3-01 to 7R-3-07 (restrictions during water shortages or water emergencies).

Comparable statutes: ALA. CODE §§ 9-10B-2(5), 9-10B-5(1); DEL. CODE ANN. tit. 7, § 6001(a)(7); N.Y. ENVTL. CONSERV. LAW § 15-0105(3); HAW. REV. STAT. § 174C-2(b).

§ 1R-1-05 EFFICIENT AND EQUITABLE ALLOCATION DURING SHORTFALLS IN SUPPLY

The State, in the exercise of its sovereign police power to protect the public interest in the waters of the State, undertakes to provide, through this Code, an orderly strategy to allocate available water efficiently and equitably in times of water shortage or water emergency.

Commentary: Water rights under the Regulated Riparian Model Water Code are subject to the obligation of the State to make suitable provisions for coping with water shortages and water emergencies. Water rights under this Code are not some form of private property which the State is debarred from interfering with without paying full compensation. *See generally* Dellapenna, § 9.05(d); Jan Laitos, *Water Rights, Clean Water Act, Section 404 Permitting and the Takings Clause*, 60 U. COLO. L. REV. 901 (1989). This is emphasized by placing this section immediately before the section on legal security for water rights. The State Agency is charged to allocate water during such periods both to promote economic efficiency and social equity. Efficiency is a relatively objective goal, while equity remains necessarily a subjective goal that the legislature, the State Agency, and the courts will never define in a fully satisfactory way. *See* Guido Calabresi and A. Douglas Melamud, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). The open texture of the term “equitable” does not authorize complete discretion in the State Agency. Rather, determinations of equity are to be determined consistently with the general laws and policies of the State and the specific policies and requirements of this Code. *See also ASCE Policy Statements* No. 243 on Ground Water Management, No. 337 on Water Conservation, No. 348 on Emergency Plans for Water Supply, No. 408 on Planning and Management for Droughts, and No. 422 on Watershed Management.

Cross references: § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 7R-3-01 to 7R-3-07 (restrictions during water shortages or water emergencies).

Comparable statutes: ALA. CODE § 9-10B-2(6); ARK. CODE ANN. § 15-22-201(b); ILL. COMP. STAT. ANN. ch. 525, ¶ 45/2; KY. REV. STAT. § 151.110; N.C. GEN. STAT. § 143-215-13(a).

§ 1R-1-06 LEGAL SECURITY FOR WATER RIGHTS

In order to provide legal security for water rights within the constraints provided in this Code, this Code establishes a system of permits that make a water right a matter of legal record entitled to legal protection.

Commentary: One of the most serious problems with traditional riparian rights is the lack of legal security for lawful uses of water or even of any definite record of such lawful uses of water. Permits authorized under the Regulated Riparian Model Water Code are designed to remedy these deficiencies. A permit issued under this Code creates a right to use water (a “water right”) that is entitled to full legal protection within the terms and conditions of the permit. Legal security is necessary to foster appropriate investment in water resources. *See generally* Dellapenna, § 6.01 (6). *See also ASCE Policy Statement* No. 243 on Ground Water Management.

Permits are required for large users, and some smaller users are required to register their uses in order to create a record of the use. The smallest of users are not required even to register their uses. Some users who are not required to register or to receive an allocation might nonetheless choose to perfect a record of their use through nonmandatory registration as authorized in section 6R-1-06. Furthermore, some users who are not required to obtain a permit might choose to apply for one any way under section 6R-1-03 or section 6R-1-04 as appropriate. The reason for taking this rather expensive step would be to obtain advance approval for a plan for conservation or a conservation credit, both of which are useful in times of water shortage or water emergency. Obtaining a nonmandatory permit could also entitle one to a preference for water developed through conservation measures if one expects to need enough additional water in the foreseeable future that one would cross the volumetric threshold that makes the permit mandatory.

Cross references: § 2R-1-04 (protection of property rights); § 2R-2-05 (conservation measures); § 2R-2-14 (permit); § 2R-2-17 (plan for conservation); § 2R-2-30 (water right); § 3R-1-03 (small water sources exempted from allocation); § 5R-2-03 (administrative resolution of disputes among holders of permits to withdraw water); § 5R-5-02 (revocation of permits); § 6R-1-01 (withdrawals unlawful without a permit); § 6R-1-02 (small withdrawals exempted from the permit requirement); § 6R-1-03 (existing withdrawals); § 6R-1-04 (withdrawals begun after the effective date of the Code); § 6R-1-06 (registration of withdrawals not subject to permits); § 7R-1-03 (forfeiture of permits); § 7R-2-04 (no rights acquired through adverse use); § 7R-3-01 (authority to restrict permit exercise); § 7R-3-05 (restriction of withdrawals for which no allocation or permit is required); § 7R-3-06 (conservation credits); § 9R-1-02 (preferences to water developed through conservation measures).

§ 1R-1-07 FLEXIBILITY THROUGH MODIFICATION OF WATER RIGHTS

In order to attain contemporary economic, environmental, and other social goals, the State shall encourage and enable the sale or other voluntary modification of water rights subject to the protection of third parties and the public interest.

Commentary: Attaining the policies embodied in the Regulated Riparian Model Water Code, including the securing of the advantages that come from holding valid water rights, requires

that water be available for new uses matching contemporary needs and values. Unfortunately, the various forms that water law has taken over the years have in fact generally inhibited the voluntary application of water to new uses. This Code adopts the policy of encouraging and enabling such changes in water use (as well as other modifications not involving change in ownership). Where the proposed modification results in no change or only immaterial changes in the time, place, or manner of use, the Code directs the State Agency to provide a process for simple and quick approval. If the proposed modification will produce a material change in the time, place, or manner of use, it will in principle be subject to the same public control as would apply were the buyer making an original application for a permit in order to provide security to other private interests and in order to promote the public interest, although even for such material changes the State Agency is authorized to implement simplified procedures for review of the application to modify so long as doing so does not materially impair the rights of the public or of third parties. Exchanges and sales, as well as other modifications of water rights, are included within this policy. *See* Dellapenna, § 9.03(d).

Cross references: § 2R-2-11 (modification of a water right); § 2R-2-18 (the public interest); §§ 7R-2-01 to 7R-2-04 (modification of water rights).

Comparable statute: VA. CODE ANN. § 62.1-245.

§ 1R-1-08 PROCEDURAL PROTECTIONS

The State shall provide procedural protection and fairness to parties to disputes over water rights through public proceedings on the allocation or modification of water rights, making available and encouraging formal and informal procedures for dispute resolution, and encouraging alternative dispute resolution mechanisms.

Commentary: One of the more central aspects of providing legal security to water rights is to ensure procedural protections to right holders and others involved in disputes over water rights. If such procedural protections are too rigidly formal, however, the very protections can become a serious impediment both to the legal security the protections are intended to provide and to the flexibility the Regulated Riparian Model Water Code is intended to encourage and enable. In addition to acknowledging the usual legal obligations of due process within the State Agency and judicial review of Agency action, this section expresses the interest of ASCE in fostering alternative dispute resolution regarding disputes over the allocation or use of water. *ASCE Policy Statement No. 256 on Alternative Dispute Resolution.*

Cross references: § 3R-2-04 (burden of proof); § 4R-1-05 (application of general laws to meetings, procedures, and records); § 4R-1-09 (protection of confidential business information); §§ 5R-1-01 to 5R-5-03 (enforcement and dispute resolution); §§ 6R-2-01 to 6R-2-08 (permit procedures); §§ 7R-3-02, 7R-3-03 (water shortages and water emergencies).

Comparable statute: ALA. CODE § 9-10B-2(6)(b).

§ 1R-1-09 COORDINATION OF WATER ALLOCATION AND WATER QUALITY REGULATION

The State shall coordinate the plans, laws, regulations, and decisions pertaining to water allocation with those pertaining to water quality.

Commentary: Water allocation is inseparable from the regulation of water quality. Regardless of whether both functions are

vested in a single agency or not, water allocation must be coordinated with water quality for effective management of a water source and to comply with federal laws and regulations. The Regulated Riparian Model Water Code fosters efficient and effective administration of the various laws and regulations relating to water usage within the State by directing state and local agencies to undertake such coordination as much as possible. *See also ASCE Policy Statements No. 379 on Hydropower and No. 427 on Regulatory Process for Infrastructure Development.* These policies can be seen as a particular expression of the more general policy that the State Agency conform its decisions and regulations to physical laws as well as a means of achieving the pervasive goal of sustainable development.

The quality of water generally is measured by maximum limits on the concentrations of pollutants in the water and minimum limits on the concentrations of dissolved oxygen in the water. These limits are affected by three variables:

- (1) prior pollutant load of the water in a particular source;
- (2) volume of the water in that source; and
- (3) rate and amount of discharge of pollutants into the water source.

The greater the volume of the water relative to prior pollutant load or to polluted effluents being discharged into the water, the greater the waste assimilative capacity of the water source. *See generally* Robert Beck, *Introduction, History, and Overview*, in 5 *WATER AND WATER RIGHTS* § 52.03; Peter Davis, *Protecting Waste Assimilation Stream Flows by the Law of Water Allocation, Nuisance and Public Trust, and by Environmental Statutes*, 28 *NAT. RESOURCES J.* 357 (1988).

As these variables suggest, the allocation of water to uses requiring the withdrawal of water from the water source will directly affect the waste assimilative capacity of the source even if, as is often not the case, the withdrawal and use will not return polluted effluent to that or another water source. This reality alone mandates the coordination of the functions of water allocation and water quality regulation to avoid contradictory commands or other inefficiencies. In addition, coordination is necessary as part of a program of coordinating state and federal programs given the large federal role in environmental protection in general and the setting and enforcing of water quality standards in particular. The problem is outlined in *SAX et al.*, at 1009-79; *WEBER, HARDER, AND BEARDEN*, at 553-76; Robert Beck and Amy Kelley, *The Uses of and Demands for Water*, in *WATERS AND WATER RIGHTS* § 2.03; Robert Beck and Amy Kelley, *The Water Quality Approach*, in *WATERS AND WATER RIGHTS* § 54.09(d)(2).

Chief among the federal laws with which the State must coordinate its allocations is the Clean Water Act, 33 U.S.C. §§ 1251-1387. Although the Clean Water Act specifically disclaims superseding or abrogating State authority to allocate water, *id.* § 1251(g), the Act's focus on water quality standards necessarily has a significant impact on State allocation of waters. Under the Act, water quality standards are set as a matter of federal law that the State is required to meet in allocating its water resources. *See* C. Peter Goplerud III and Amy Kelley, *Technological Controls*, in *WATERS AND WATER RIGHTS* §§ 53.01-53.04; Robert Beck and Amy Kelley, *The Water Quality Approach*, in *WATERS AND WATER RIGHTS* §§ 54.01-54.09.

Two programs, directed to achieving and maintaining "the chemical, physical, and biological integrity of the nation's water," *id.* § 1251(a), will particularly affect state water allocation:

- (1) ambient water quality standards, and
- (2) effluent discharge standards for "point sources."

Ambient water quality standards are based upon the designated uses of the particular segment of a water source (e.g., agriculture, industry, public supply, recreation, etc.). These standards include minimum concentrations of dissolved oxygen, maximum concentrations for bacteria, maximum allowable temperature changes, and defined limits to hydrogen ion concentrations (pH). Effluent discharge standards require each point source to obtain a permit under the National Pollutant Discharge Elimination System ("NPDES"). A point source is the discharge of any effluent into the waters of the United States at a discrete outlet (a "point"). Examples include sewage treatment plants, industrial discharges, and urban stormwater drains. The NPDES permit sets the particular limits on various pollutants authorized for discharges by the point source. *See Sax et al.*, at 1016-41.

State allocations will impact in three ways on the federal scheme for achieving and maintaining the integrities of the waters of the United States. First, the allocation of uses, whether in place or by withdrawal, affects the designated uses of the waterbody and therefore the ambient water quality standards of the water source. Second, the allocation of withdrawal rights may lower the volume of flow and consequently reduce the waste assimilative capacity of the water source. Finally, the allocation of withdrawal rights normally signals a return flow to the water source, often triggering the NPDES permit requirement. Efficient and effective water management requires that these effects be considered in allocating water to particular uses.

In some States, a single agency will administer both water allocation and the regulation of water quality; in others, the administration of the two programs will be vested in different agencies. Regardless of how the administration of water quality and water quantity issues is arranged, failure to coordinate will, at the least, run afoul of the policy of conforming the management of the waters of the State to the relevant physical laws. Furthermore, failure to coordinate or even to integrate the two programs will preclude the efficient and effective management of both programs and create a risk of federal intervention into the State's water management.

Cross references: § 1R-1-01 (protecting the public interest in the waters of the State); § 1R-1-03 (conformity to the policies of the Code and to physical laws); § 2R-2-02 (biological integrity); § 2R-2-03 (chemical integrity); § 2R-2-15 (person); § 2R-2-16 (physical integrity); § 2R-2-18 (the public interest); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-30 (water right); § 2R-2-32 (waters of the State); § 2R-2-33 (water source); § 2R-2-34 (withdrawal or to withdraw); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); § 4R-3-04 (combined permits); §§ 6R-4-01 to 6R-4-05 (coordination of water allocation and water quality regulation).

Comparable statutes: ALA. CODE § 9-10B-2(7); GA. CODE ANN. § 12-5-21; HAW. REV. STAT. § 174C-2(d); IOWA CODE ANN. §§ 455B.265(1), 455B.267(2); N.Y. ENVTL. CONSERV. LAW § 15-0105(6); WIS. STAT. ANN. § 144.025(1).

§ 1R-1-10 WATER CONSERVATION

The State shall conserve the waters of the State through suitable policies and by encouraging private efforts to conserve water and to avoid waste.

Commentary: In addition to recognizing the need to coordinate water allocation and water quality regulation in order to achieve sustainable development, the Regulated Riparian Model Water

Code fosters the conservation of water as a basic policy of the State. Conservation appears at frequent intervals in the Code, but its accomplishment is to be achieved primarily by a two-pronged approach. First, the State and its various agencies are to conform their own activities to sound conservation practices. Second, the State Agency is to encourage, through the terms and conditions it attaches to permits, private efforts to conserve water. Planning will be an essential element to the State Agency's conservation activities. The support of the American Society of Civil Engineers for water conservation is expressed in *ASCE Policy Statement No. 337 on Water Conservation*. *See* Robert Beck and Amy Kelley, *The Uses of and Demands for Water*, in *WATERS AND WATER RIGHTS* § 2.01. For an example, consider the California approach to conservation, *see Sax et al.*, at 243-46.

The Regulated Riparian Model Water Code embodies several important provisions designed to ensure the minimum necessary conservation and to encourage or promote additional conservation. The Code establishes minimum flows and levels of water that are to be protected from withdrawal or other consumptive uses. *See* sections 3R-2-01 to 3R-2-054. The Code also provides for the State Agency to contract to protect additional flows and levels beyond that minimum. Section 3R-2-05. The Code requires all permit holders to adopt plans for conservation. Sections 6R-2-01(p), 7R-1-01. The Code also establishes a preference for persons who have voluntarily undertaken conservation measures beyond those required by the provisions of the Code and beyond the requirements of any plan of conservation that has been made part of the terms and conditions of their permits. Sections 9R-1-01, 9R-1-02. Finally, the Code creates a system of conservation credits that arise from fulfilling the terms or conditions of a permit or as a response to a water shortage or water emergency, including joint actions taken collectively by two or more permit holders. Section 7R-3-06.

The relationship of these several provisions is complex. For example, the preference for voluntary conservation measures under section 9R-1-02 relates to steps taken neither as a requirement of the permit nor as a direct response to a crisis. Its primary role will be as a preference relating to an application to modify the use made of water under a permit. Conservation credits under section 7R-3-06 relate to preferences in the context of restrictions on water use during a water shortage or water emergency. Either sort of preference, however, might count in determining whether one or another use is reasonable when several permit holders are seeking to renew permits or are otherwise competing for limited supplies of water.

Quantification of the water conserved will involve comparing the amounts of water used before the introduction of the voluntary conservation measures with the amounts used afterward, allowances being made for natural variations in the use and occurrence of water. Normally, the Agency will require actual measurements rather than estimates. In appropriate cases, the Agency might rely on estimates based upon sound engineering principles.

A person using water can, to some extent, control which section a particular conservation measure comes under through the manner in which the conservation measures are disclosed to the State Agency (*i.e.*, through a permit application or otherwise). When that is possible, the person undertaking a conservation measure must then consider which sort of preference will be more beneficial. This basically comes down to how frequent are water shortages or water emergencies on the one hand, and how substantial are the opportunities to make another use of the water through a modification of a permit on the other. The risk of not disclosing fully how one intends to use the water does create a risk that the pattern of use, instead of giving rise to a conservation

credit under section 7R-3-06, or a modification preference under section 9R-1-02, will be held to have been a waste of water and therefore not only not the basis for either a credit or a preference but also, in fact, a basis for forfeiture of part of the water right evidenced by the permit. See section 7R-1-03. In an extreme case, the less than full disclosure could even lead to a criminal prosecution for perjury. Section 5R-5-03.

Although broadly speaking any conservation could be considered the elimination of the waste of water rather than conservation as such, when the initiative comes from the water user rather than from prodding by the Agency and the practices that the person changes were not egregiously wasteful, the activity should be rewarded as a means of encouraging the conservation measures. Some might fear that the sort of preferences provided here in effect negates the social benefits of the conservation by allocating the water levels to the party who conserved it. The Code proceeds on the basis that such a preference provides the best incentive for developing more efficient ways of exploiting water. These several provisions do not, however, overcome the general requirement that a person claiming a preference make a reasonable use of the water. Without some such reward, there is likely to be less voluntary water conservation as there would be no gain for the person undertaking the conservation measures and might well be a net loss if subsequently the Agency were to determine that resumption of the former use patterns would constitute a waste of water. The Code does not recognize a preference if the original permit inadvertently (or otherwise) authorized the waste of water or if the water can be "conserved" because it has not been used for the forfeiture period or is not capable of being used consistently with the terms and conditions of the permit. In other words, water must have been used in order to be conserved; to do otherwise would be to open the door to the possibility of one or a few large users monopolizing the waters of the State.

Cross references: § 1R-1-04 (comprehensive planning); § 1R-1-11 (preservation of minimum flows and levels); § 2R-2-05 (conservation measures); § 2R-2-06 (consumptive use); § 2R-2-13 (nonconsumptive use); § 2R-2-17 (plan for conservation); § 2R-2-18 (the public interest); § 2R-2-20 (reasonable use); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-27 (waste of water); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); § 2R-2-32 (waters of the State); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); §§ 6R-4-01 to 6R-4-05 (coordination of water allocation and water quality regulation); § 7R-1-01 (permit terms and conditions); § 7R-2-01 (approval required for modification of permits); § 7R-3-06 (conservation credits); §§ 9R-1-01, 9R-1-02 (water conservation).

Comparable statutes: ALA. CODE § 9-10B-2(3); ARK. CODE ANN. § 15-22-201(a); DEL. CODE ANN. tit. 7, § 6001(a)(4), (5), (c) (3); FLA. STAT. ANN. § 373.016(2)(b); GA. CODE ANN. § 12-5-91; HAW. REV. STAT. § 174C-2(C); ILL. COMP. STAT. ANN. ch. 525, ¶¶ 45/2, 45/3; KY. REV. STAT. ANN. § 151.110; N.Y. ENVTL. CONSERV. LAW § 15-0105(6); S.C. CODE ANN. § 49-5-20; VA. CODE ANN. § 62.1-11(D). See also Dellapenna, § 9.03, at 446 n. 228.

§ 1R-1-11 PRESERVATION OF MINIMUM FLOWS AND LEVELS

The State shall preserve minimum flows and levels in all water sources as necessary to protect the appropriate biological, chemical, and physical integrity of water sources by

reserving such waters from allocation and by authorizing additional protections of the waters of the State.

Commentary: In order to achieve the public interest in the maintenance of a minimal level of biological, chemical, and physical integrity for water sources as a central aspect of sustainable development, the Regulated Riparian Model Water Code authorizes the State Agency to adopt regulations and take other steps to preserve a protected minimum level for each water source. The three forms of integrity mentioned in this policy and defined in this Code reflect the statutory criteria of the Clean Water Act, although that Act does not specifically express its three interrelated concerns as mandatory integrities. 33 U.S.C. § 1314(b). The definitions provided in this Code are derived from the policies declared in the Clean Water Act as relevant to the achievement and maintenance of the three integrities. See 33 U.S.C. § 1251(a)(1) to (7). These are consistent with the policies of the American Society of Civil Engineers. *ASCE Policy Statements* No. 361 on Implementation of Safe Drinking Water Regulations, No. 408 on Planning and Management for Droughts, No. 422 on Watershed Management, No. 441 on Stormwater Management, and No. 540 on Resilient Water Resources Projects.

While the aspects of water protected under the term "physical integrity" mostly apply only to surface water sources, the biological and chemical integrities to be protected under this section are relevant to both the surface and underground water sources within the State. The differing characteristics of the several types of water source will be considered by the State Agency in specifying the protected minimum level for each water source. The Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j-11, sets specific federal standards regarding the regulation of underground injections and the protection of aquifers that are the sole source of a public water supply. These standards will have a large, and generally controlling, role in setting the protected levels for underground water. See Robert Beck and Amy Kelley, *Introduction, History, and Overview*, in *WATERS AND WATER RIGHTS* § 52.06(c); Robert Beck and Amy Kelley, *The Water Quality Approach*, in *WATERS AND WATER RIGHTS* § 54.03.

Like water conservation generally, the Code adopts a two-pronged approach to minimum level protection. First, the Code reserves from allocation the waters necessary for the preservation of the protected integrities of water sources. Second, the Code establishes a mechanism for providing further protection to instream flows. See RICE AND WHITE, *supra*, at 2; Dellapenna, § 9.05(b). One means for providing further protection to instream flows that has been gaining importance in recent decades is the regulation of releases from reservoirs. See, e.g., *Confederated Tribes v. Federal Energy Regulatory Comm'n*, 246 F.2d 466 (9th Cir. 1984), *cert. denied*, 471 U.S. 1116 (1985). In some watersheds, release management significantly mimics the natural cycle of spring floods and summer low flows in order to sustain the biological integrity of the stream. See, e.g., Jon Christensen, *River in Nevada Helps Its Own Restoration*, N.Y. TIMES, Sept. 24, 1996, at C4.

Cross references: § 2R-2-02 (biological integrity); § 2R-2-03 (chemical integrity); § 2R-2-16 (physical integrity); § 2R-2-18 (the public interest); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels).

Comparable statutes: ARK. CODE ANN. §§ 15-22-201(b), 15-22-202(6), 15-22-222; FLA. STAT. ANN. §§ 373.0397, 373.042, 373.223(3); HAW. REV. STAT. § 174C-3; MISS. CODE ANN. § 51-3-3(i), (j); N.Y. ENVTL. CONSERV. LAW § 15-0105(6).

VA. CODE ANN. §§ 62.1-11(F), 62.1-44.36(5). *See also* Dellapenna, § 9.05 (b), at 529 n.845.

§ 1R-1-12 RECOGNIZING LOCAL INTERESTS IN THE WATERS OF THE STATE

The diverse hydrogeographic, economic, and institutional conditions existing within the State require the State to continue to support the activities of general and special purpose local units of government that address local and regional water resource conditions and problems.

Commentary: In all states, county and municipal governments have long addressed local hydrologic conditions and problems. In most States, there also are various special purpose units of government, such as regional sanitation districts or public supply systems, that have long provided essential services to local (including metropolitan) communities. The Regulated Riparian Model Water Code includes provisions to ensure cooperation with such governmental units and support for their activities so far as the resources available to the State Agency allow. The Code further recognizes that many States will choose to administer the permit process provided in this Code, as well as some of the planning and other functions provided in this Code, through Special Management Water Areas covering only particular portions of the States. Other States will choose to have all functions directly covered by the Code performed by a single statewide agency. States opting for the latter approach will delete the sections dealing with Special Water Management Areas. *See also ASCE Policy Statements* No. 302 on Cost Sharing in Water Resources Infrastructure Programs, No. 422 on Watershed Management, and No. 470 on Dam Repair and Rehabilitation.

Cross references: § 2R-2-18 (the public interest); § 2R-2-22 (Special Water Management Area); §§ 4R-4-01 to 4R-4-08 (Special Water Management Areas).

Comparable statutes: ALA. CODE § 9-10B-25; ARK. CODE ANN. §§ 15-22-202(9), 15-22-505(9); FLA. STAT. ANN. §§ 373.016(3), 373.026(7).

§ 1R-1-13 REGULATING INTERSTATE WATER TRANSFERS

The State shall maintain the waters of the State both for supplying water requirements within the State and, under appropriate circumstances, for out-of-state transportation and use.

Commentary: Transferring water across state boundaries might raise economic, environmental, and social issues concerning the safety, health, and welfare of the citizens of the state of origin. While the public interest that the State Agency exists to promote is the interest of the public of this State, membership in a federal union precludes anything less than an even-handed treatment of the interests of persons and communities in other States. *Sporhase v. Nebraska ex rel. Douglas*, 438 U.S. 941 (1982); *City of El Paso v. Reynolds*, 597 F. Supp. 694 (D. N.M. 1984); Dellapenna, §§ 9.06(b), (c); Douglas Grant and Bret Birdsong, *State Regulation of Interstate Water Export*, in *WATERS AND WATER RIGHTS* §§ 48.01 to 48.03. The Regulated Riparian Model Water Code recognizes the obligation not to impede the flow of interstate commerce but also recognizes the right of the state-of-origin to regulate such transfers in a nondiscriminatory manner and to prevent the loss of the water necessary for the survival, health, or safety of the State's citizens. In those settings where there is no

interstate compact or other arrangement for collective decisions relating to interstate allocations, the Code requires the State Agency to balance these concerns to allocate the waters of the State to their proper use.

Cross references: § 2R-2-18 (the public interest); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 8R-1-01 to 8R-1-07 (multijurisdictional transfers).

Comparable statutes: ARK. CODE ANN. § 15-22-303; CONN. GEN. STAT. ANN. § 22a-369(10).

§ 1R-1-14 REGULATING INTERBASIN TRANSFERS

The State shall protect the reasonable needs of water basins of origin through the regulation of interbasin transfers.

Commentary: Transferring water for use outside of its basin of origin with little or no return flow to the basin of origin might pose similar problems to the basin of origin as are likely to arise in interstate transfers, even when both the basin of origin and the basin of use are within a single state. The Regulated Riparian Model Water Code recognizes the obligation to protect the needs of basins of origin but rejects any abstract standard that might prevent interbasin transfers beyond that amount necessary to serve actual or foreseeable needs of the basin of origin. Implicit in this policy is a recognition that interbasin transfers are not to be permitted if it would prevent the basin of origin from meeting any of the environmental or other social and economic objectives set forth in this Code or in related laws and regulations pertaining to water quality. *See generally* RICE AND WHITE, *supra*, at 1-2; SAX *et al.*, at 800-35; Owen Anderson, *Reallocation, Transfers, and Change Elements*, in *WATERS AND WATER RIGHTS* § 14.04; Robert Beck and Amy Kelley, *The Water Resource Defined and Described*, in *WATERS AND WATER RIGHTS* §§ 1.02; Dellapenna, § 9.06(a). The policy of the American Society of Civil Engineers supporting watershed management at the least requires regulation of interbasin transfers. *ASCE Policy Statement* No. 422 on Watershed Management.

Cross references: § 1R-1-12 (recognizing local interests in the waters of the State); § 2R-1-02 (no prohibition of use based on location of use); § 2R-2-10 (interbasin transfer); § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); § 2R-2-28 (water basin); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); § 6R-3-06 (special standard for interbasin transfers); § 7R-1-01(k) (permit terms or conditions involving an interbasin transfer to include compensation to the water basin of origin); §§ 8R-1-01 to 8R-1-07 (multijurisdictional transfers).

Comparable statutes: 42 U.S.C. § 1962d-20; ILL. ANN. STAT. ch. 19, ¶¶ 119.1-119.12; IND. CODE ANN. § 13-2-1-9; MICH. COMPILED LAWS ANN. §§ 323.71-323.76; MINN. STAT. ANN. §§ 105.405(4)(a)(2), (3), 105.405(4)4(b); N.Y. ENVTL. CONSERV. LAW §§ 15-1601 to 15-1615; WIS. STAT. ANN. §§ 144.026(5)(b), (c), 144.026(11).

§ 1R-1-15 ATMOSPHERIC WATER MANAGEMENT

As the management of atmospheric water through weather modification affects the public health, safety, welfare, and the environment, the State shall subject such activities to regulation and control in the public interest and integrate such activities with surface and underground water resources management in order to improve water allocation and quality.

Commentary: The Regulated Riparian Model Water Code recognizes that weather modification has become important in

a few States and might become important in other States. The Code therefore provides for water rights and liabilities to be associated with weather modification. The Code does not attempt a comprehensive regulation of the practice. ASCE supports programs to develop and apply weather modification. *ASCE Policy Statement* No. 275 on Atmospheric Water Management. See Robert Beck and Amy Kelley, *Augmenting the Available*

Water Supply, in *WATERS AND WATER RIGHTS* § 3.04. See also *ASCE MANUAL OF PRACTICE ON ATMOSPHERIC WATER MANAGEMENT* (Conrad G. Keyes, Jr. ed., MOP No. 81, 2016).

Cross references: § 2R-2-01 (atmospheric water management or weather modification defined); §§ 9R-2-01 to 9R-2-05 (atmospheric water management).

Comparable statute: FLA. STAT. ANN. § 373.026(6).

CHAPTER 2 GENERAL PROVISIONS

This chapter sets out a number of general provisions essential to the proper functioning of any code of law, particularly definitions of recurring terms given special meanings within this Code. The chapter opens with certain basic changes in traditional riparian law that form the premises of a regulated riparian approach to water management. While largely preserving existing riparian and related rights to use water, this chapter does introduce one significant change in the law in that it repeals any limitations on the use of water derived from the location of the use. The chapter then provides the basic definitions for the Code. Finally, the chapter concludes with certain provisions necessary for the transition from prior law to the system enacted in this Code.

PART 1 GENERAL OBLIGATIONS AND PROHIBITIONS

This Part reaffirms the basic rule of decision in riparian law that uses of water are lawful only if reasonable and also that vested property rights are to be protected. This Part, however, changes one feature of traditional riparian law that severely constrained the utility of the reasonability premise in operation: that uses on land that were not contiguous to the water source or within the same watershed were inherently unreasonable. See section 2R-1-02. This change, coupled with the addition of the requirement of a permit for most withdrawals of water provided in Chapters 6 and 7, significantly transforms the manner in which the traditional criterion of reasonableness will be applied while leaving its substantive content intact.

Some will question whether repealing the restriction of use to riparian lands contradicts the claim that the Regulated Riparian Model Water Code is a regulation of riparian rights rather than a replacement of those rights. The core of riparian rights, as those rights have evolved in the later nineteenth and twentieth centuries, is not the restriction of use to riparian lands, but the requirement that uses of water be reasonable. See *Harris v. Brooks*, 283 S.W.2d 129 (Ark. 1955); *Lake Williams Beach Ass'n v. Gilman Bros. Co.*, 496 A.2d 182 (Conn. 1985); *Hoover v. Crane*, 106 N.W.2d 563 (Mich. 1960); *Red River Roller Mills v. Wright*, 15 N.W. 157 (Minn. 1883).

The American Law Institute recognized the result of this evolution when it concluded in the *Restatement (Second) of the Law of Torts* (1977) that the use of water on nonriparian lands is to some extent legally protected. If the use is made by a riparian owner, albeit on nonriparian land, the *Restatement* treats the use as “riparian” on the theory that the law of riparian rights protects the interests of the owner of the right rather than simply creating a benefit for certain lands defined as riparian. *Restatement (Second) of Torts* § 855. If someone who does not own any riparian land makes a use on nonriparian land, the *Restatement* describes the use as a “privilege subject to defeasance by the exercise of riparian rights.”

Restatement (Second) of Torts § 856(1) comment a. This latter notion has been recognized to some extent in several cases. *Dimmock v. City of New London*, 245 A.2d 569 (Conn. 1968); *Pyle v. Gilbert*, 265 S.E.2d 584 (1980). Much the same is true for the view that the “reasonable use” rule for underground water is restricted to land that overlies the aquifer. *Restatement (Second) of Torts* 857(1). See generally Joseph Dellapenna, *Quantitative Groundwater Law*, in *WATERS AND WATER RIGHTS* §§ 20.07(b), 22.01-23.03.

The rationale for the traditional restrictions is to restrict water rights to the land that naturally benefits from the presence of the water. *Tyler v. Wilkinson*, 24 F. Cas. 472, 474 (D. R.I. 1827) (No. 14,312); *Buddington v. Bradley*, 10 Conn. 213 (1834); *Blanchard v. Baker*, 8 Me. 253 (1832); *City of Baltimore v. Appold*, 42 Md. 442 (1875); *Niagara Mohawk Power Corp. v. Cutler*, 492 N.Y.S.2d 137 (App. Div. 1985), *aff'd mem.*, 492 N.E.2d 398 (N.Y. 1986). In a very real sense, all land within a watershed naturally benefits from the precipitation that falls across the watershed that feeds both surface and underground waters. Within the watershed, the Code simply disregards artificial boundaries drawn on the land in favor of allowing all whose lands contribute to the drainage to share reasonably in the natural benefits of the water.

The Regulated Riparian Model Water Code does not entirely abandon the notion of preferences for uses within the watershed for the Code provides protections against interbasin transfers. The Code provides a special standard for interbasin transfers designed to afford real protection to the basin of origin. See section 6R-3-06. Even with those preferences in place, however, the Code does not prohibit interbasin transfers. Rather, the Code provides for compensation to the basin of origin through an Interbasin Compensation Fund. See sections 4R-1-04(2), 7R-1-01(k).

§ 2R-1-01 The Obligation to Make Only Reasonable Use of Water

No person shall make any use of the waters of the State except in so far as the use is reasonable as determined pursuant to this Code.

Commentary: The traditional criterion for resolving conflicts over water use under common law riparian rights was to determine which use was, in light of all relevant facts, reasonable. See Dellapenna, §§ 7.02(d), 7.03. This section carries that criterion forward as the fundamental criterion for allocating water under the Regulated Riparian Model Water Code. All uses of water, including those not required to have a permit or an allocation, must be “reasonable” as defined in this Code. By so doing, the Code seeks to eliminate or minimize waste and use of water to prevent unreasonable injury to other water right holders, and to ensure the allocation of the waters of the State to the uses most

consistent with the public interest and sustainable development. *See generally* Dellapenna, § 9.03(b). *See also* ASCE Policy Statement No. 243 on Ground Water Management.

Cross-references: § 1R-1-02 (ensuring efficient and productive use of water); § 2R-2-18 (the public interest); § 2R-2-20 (reasonable use); § 2R-2-24 (sustainable development); § 2R-2-27 (waste of water); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); § 5R-2-03 (administrative resolution of disputes among holders of permits to withdraw water); § 6R-3-02 (determining whether a use is reasonable).

Comparable statutes: ARK. CODE ANN. § 15-22-217(a) (“equitable portion”); DEL. CODE ANN. tit. 7, § 6010(f)(1) (“equitable apportionment”); GA. CODE ANN. § 12-5-31(e) to (g); ILL. COMP. STAT. ANN. ch. 525, ¶¶ 45/3(c), 45/6; IND. CODE ANN. §§ 13-2-1-3, 13-2-1-8; MASS. GEN. LAWS ANN. ch. 21G, § 7(4), (8) to (10); MINN. STAT. ANN. § 105.45; N.Y. ENVTL. CONSERV. LAW § 15-1503(2) (“just and equitable”); N.C. GEN. STAT. § 143-215.16(e), (f). *See also* CONN. GEN. STAT. ANN. § 22a-373; MD. CODE ANN., NAT. RES. § 8-807(a); N.J. STAT. ANN. § 58:1A-7; WIS. STAT. ANN. § 144.026(5)(d).

§ 2R-1-02 No Prohibition of Use Based on Location of Use

- (1) **Uses of the waters of the State on nonriparian or non-overlying land are lawful and entitled to equal consideration with uses on riparian or overlying land in any administrative or judicial proceeding relating to the allocation, withdrawal, or use of water or to the modification of a water right.**
- (2) **Nothing in this Code shall be construed to authorize access to the waters of the State by a person seeking to make a nonriparian or non-overlying use apart from access otherwise lawfully available to that person.**

Commentary: The Regulated Riparian Model Water Code repeals the common law rule that limited lawful uses of water drawn from a watercourse to riparian lands and from underground sources to land overlying the aquifer from which the water is drawn. There is no reason to believe that limiting the lawful use of water to riparian land is necessarily always either efficient or ecologically sound, let alone that it will necessarily serve the public interest. The Code places nonriparian and non-overlying uses on an equal footing with the formerly favored uses. Location of use is simply one factor of many to be considered by the State Agency in determining whether to issue a permit for a particular use. *See* Dellapenna, §§ 7.02(a)(1), 9.03(a)(2). For the modification of the watershed limitation, *see* Dellapenna, § 7.02(a)(2). The rationale for this change is further developed in the introduction to this part.

The recognition of a right to withdraw water from a water source when one’s land is neither contiguous nor overlying to the source does not, however, authorize trespass or other invasion of private rights to obtain the water for which a permit is issued. The rule announced in this section applies to interbasin uses of water as well as intrabasin transfers to nonriparian or non-overlying land. Whether a permittee has lawful access to the water source from which use is authorized by a permit will not always be clear. The State Agency should attempt to determine whether there will be lawful access before issuing a permit, but its determination in this regard cannot create a new right of access in the permit holder, nor destroy the right to resist trespass or other unlawful intrusion by an intervening land owner. A contrary rule would contradict the provision in section 2R-1-04 that protects vested property rights from being taken without compensation.

Cross references: § 1R-1-14 (regulating interbasin transfers); § 2R-1-04 (protection of property rights); § 2R-2-10 (interbasin transfer); § 2R-2-18 (the public interest); § 2R-2-28 (water basin); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 6R-3-06 (special standard for interbasin transfers); §§ 8R-1-01 to 8R-1-07 (multi-jurisdictional transfers).

Comparable statutes: ARK. CODE ANN. § 15-22-304; FLA. STAT. ANN. § 373.223(2); HAW. REV. STAT. § 174C-49(C); IND. CODE ANN. §§ 13-2-1-6(1), 13-2-2-8.

§ 2R-1-03 No Unreasonable Injury to Other Water Rights

No person using the waters of the State shall cause unreasonable injury to other water uses made pursuant to valid water rights, regardless of whether the injury relates to the quality or the quantity impacts of the activity causing the injury.

Commentary: The Regulated Riparian Model Water Code continues the traditional standard of the common law of riparian rights (and of the reasonable use version of the law relating to underground water) that no use is lawful if it entails unreasonable injury to other lawful uses. Determining whether an injury is reasonable remains a process of balancing the interests of the affected parties and of society generally. *See* Dellapenna, § 7.03. The law is changed in that the primary responsibility for determining when an unreasonable injury occurs is now vested in the State Agency rather than in the courts. The Code proceeds on the premise that there is no injury, reasonable or otherwise, if the affected party is compensated pursuant to a voluntary agreement or pursuant to measures directed by the State Agency under its authority as defined in this Code.

Cross references: § 2R-2-18 (the public interest); § 2R-2-23 (State Agency); § 2R-2-26 (unreasonable injury); §§ 5R-2-01 to 5R-2-03 (dispute resolution); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 7R-2-01 (approval required for modifications of permits).

§ 2R-1-04 Protection of Property Rights

- (1) **Nothing in this Code authorizes the taking of any existing vested property right in the use of water except for just compensation.**
- (2) **Proof of compliance with this Code is not a defense in any legal action not founded on this Code except to the extent that the provisions of this Code expressly supersede prior law on which such claim is founded.**

Commentary: The Regulated Riparian Model Water Code proceeds on the theory that while the State cannot take a vested property interest without just compensation, including a vested property interest in the use of water, the State can regulate property rights in the public interest. For this purpose, the State can compel even holders of vested property interests to obtain a permit subject to loss of their property interest if they fail to comply with the permit requirement. This is particularly true for water, as the waters of the State are owned by the State in trust for the public, with only the right to use water being owned by particular users. This approach does not deny all protection of property rights, even in water, as regulation can become so extensive as to amount to a taking, particularly if the regulation deprives a property owner of substantially all economic value or imposes a significant burden not related to activities on the property. *Dolan v. City of Tigard*, 501 U.S. 374 (1994); *Lucas v. South Carolina Coastal Council*, 505 U.S. 1033 (1992).

See also James Audley McLaughlin, *Majoritarian Theft in the Regulatory State: What's a Takings Clause For?*, 19 WM. AND MARY ENVTL. L. AND POL'Y REV. 161 (1995). Courts thus far have been unanimous that a permit system like the one created by this Code is not a taking. *Village of Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663 (Fla.), cert. denied, 444 U.S. 965 (1979); *Crookston Cattle Co. v. Minnesota Dep't of Nat. Resources*, 300 N.W.2d 769 (Minn. 1981); *Omernick v. State*, 218 N.W. 2d 734 (Wis. 1974). See also Michelle Walsh, *Achieving the Proper Balance between the Public and Private Property Interests: Closely Tailored Legislation as a Remedy*, 19 WM. AND MARY ENVTL. L. AND POL'Y REV. 317 (1995). Special provisions are made for permits for such persons that will gradually integrate them fully into the State's regulatory system. See Dellapenna, § 9.04(a). See also ASCE Policy Statement No. 243 on Ground Water Management.

The problem of protecting vested property rights would be more troubling were a legislature to attempt to displace a system of appropriative rights with this Regulated Riparian Model Water Code. Appropriative rights are defined in terms of a specific quantity of water applied to a beneficial use. See, e.g., *Imperial Irrigation Dist. v. State Water Resources Control Bd.*, 275 Cal. Rptr. 250 (Cal. App. 1990), review denied; *In re Application for Water Rights*, 891 P.2d 952 (Colo. 1995); *Hardy v. Higgenson*, 849 P.2d 946 (Idaho 1993); *Romey v. Landers*, 392 N.W.2d 415 (S.D. 1986); *Provo River Water Users Ass'n v. Lambert*, 642 P.2d 1219 (Utah 1982); *State v. Grimes*, 852 P.2d 1054 (Was. 1993). Such rights to use water clearly are vested property that could not be abolished without compensation. *United States v. State Water Resources Control Bd.*, 227 Cal. Rptr. 161 (Cal. App. 1986), review denied. Nor would a severe crisis forcing the abandonment of many uses due to water shortage invoke the doctrine that the State must choose among those to be destroyed when some uses must be destroyed. *Miller v. Schoene*, 276 U.S. 272 (1928). The State has already made that choice through the temporal priority feature of appropriative rights that have become a part of the vested property right. *Sears v. Berryman*, 623 P.2d 455 (Idaho 1981); *State ex rel. Cary v. Cochrane*, 292 N.W. 239 (Neb. 1940). The takings clause thus would probably preclude the adoption of this Code in an appropriative rights jurisdiction.

Some eastern States have accorded a limited protection to the right to use water based upon temporal priority. CONN. GEN. STAT. ANN. § 22a-368; IND. CODE ANN. §§ 13-2-1-8, 13-2-2-5 MASS. GEN. STAT. ANN. ch. 21G, § 7; MISS. CODE ANN. § 5-3-5(2), (3); N.Y. ENVTL. CONSERV. LAW § 15-501(1); OHIO REV. CODE § 1521.16; VA. CODE ANN. §§ 62.1-248(D), 62.1-253. Whether any of these enactments would amount to the creation of such vested rights as would require compensation to change is at least debatable. Probably, no temporally defined rights to use water in eastern States are so developed as to amount to a vested property right requiring compensation before it could be altered. See Dellapenna, § 9.03(b)(3).

Most States will choose to exempt some water uses from the permit system. In that case, the Code provides that disputes involving such exempted water uses will be governed by the principle of reasonable use. In most cases, that rule is simply the prior law that already applied to them as the common law of riparian rights or the common law of underground water. The Code also preserves private rights of action arising from injuries caused by pollution or other degradation of the waters of the State.

Cross references: § 1R-1-01 (protecting the public interest in the waters of the State); § 1R-1-06 (legal security for water rights); § 2R-1-01 (the obligation to make only a reasonable use of water); § 2R-2-18 (the public interest); § 2R-2-32 (waters of the State); § 3R-2-01 (protected minimum flows or levels not

to be allocated or withdrawn); § 5R-2-03 (administrative resolution of disputes among holders of permits to withdraw water); § 5R-4-09 (citizen suits); § 6R-1-03 (existing withdrawals); § 6R-4-05 (preservation of private rights of action).

Comparable statutes: ALA. CODE § 9-10B-27; GA. CODE ANN. §§ 12-5-46, 12-5-104; HAW. REV. STAT. § 174C-15(C); IOWA CODE ANN. § 455B.270; MD. CODE ANN., NAT. RES. § 8-812; MINN. STAT. ANN. § 105.391(12); N.C. GEN. STAT. § 143-215.22; VA. CODE ANN. §§ 62.1-12; 62.1-253; WIS. STAT. ANN. § 144.026(12)(b).

§ 2R-1-05 Application of Definitions

When used in this Code or in any order, permit term or condition, or regulation made pursuant to this Code, the definitions in the following Part shall apply.

Commentary: The definitions in this chapter are to be used throughout the Regulated Riparian Model Water Code. Modern possibilities of textual search by computer make it substantially self-defeating to provide the usual out of “unless the context clearly requires otherwise.” Definitions are provided if the term appears in more than one section in the Code, but only if the term is used in a precise sense that in some respect would not be self-evident to an ordinary speaker of American English. When the drafters of the Code could not provide a better definition than a simple dictionary definition or when the term used is, and is expected to remain, vague rather than precise, they did not attempt to provide a definition.

PART 2 DEFINITIONS

§ 2R-2-01 Atmospheric Water Management or Weather Modification

The phrases “atmospheric water management” and “weather modification” both mean any activity performed with the intent of producing artificial changes in the composition, motions, and resulting behavior of the atmosphere or clouds, including fog, or with the intent of inducing changes in precipitation by use of electrical device, lasers, or alterations of the Earth's surface, but not including any activity performed in connection with traditional ceremonies of American Indians.

Commentary: This definition is consistent with the definitions usually used in state and federal laws on weather modification. See generally Robert Beck and Amy Kelley, *Augmenting the Available Water Supply*, in WATERS AND WATER RIGHTS § 3.04; Ray Jay Davis, *Four Decades of American Weather Modification Law*, 19 J. WEATHER MODIFICATION 102 (1987). See also ASCE Policy Statement No. 275 on Atmospheric Water Management (2000).

Cross references: § 1R-1-15 (policy of regulating atmospheric water management or weather modification); §§ 9R-2-01 to 9R-2-05 (atmospheric water management).

§ 2R-2-02 Biological Integrity

The “biological integrity” of a water source means the maintenance of water in the source in the volume and at the times necessary to support and maintain wetlands and wildlife (including fish, flora, and fauna) in so far as protection of either is required by federal or state laws or regulations.

Commentary: Water sources are vital to the survival of entire ecosystems, of which humans form only a part. Sustainable

development of a water source requires respect for and protection of the biological integrity of the source. The biological integrity of a water source is defined as the preservation of sufficient water in a water source to ensure the survival of the ecosystem as such, although human needs necessarily preclude any aim of preserving all ecosystems without change. The term comes from the Clean Water Act, where it is one of the three fundamental criteria for setting effluent standards, although the Clean Water Act does not express its mandate in terms of “integrity.” 33 U.S.C. § 1314(b). A simple way of expressing the goal is for the agency to prevent the loss of genetic diversity within the ecosystem, although this cannot be taken as an absolute value without utterly precluding human activity involving water.

No policy of the American Society of Civil Engineers directly supports this provision. It is nonetheless inferable from policies relating to the protection of water quality. *ASCE Policy Statements* No. 131 on Growth and Development, No. 243 on Ground Water Management, No. 361 on Implementation of Safe Drinking Water Regulations, No. 362 on Comprehensive Pollution Management, No. 378 on National Regulatory Wetlands Policy, No. 437 on Risk Management, and No. 461 on Nonpoint Source Pollution.

Rather than attempting an exhaustive definition of how to balance the needs of humans and other participants in the ecosystem, an effort that is probably foredoomed to failure, the Regulated Riparian Model Water Code seeks to achieve the necessary balance by referring to other laws or regulations to define the extent to which ecosystems are to be preserved. This approach is taken in order to provide a measure of certainty to the otherwise vague standards proposed to define minimum flows or levels. The ultimate aim is to prevent permanent impairment to aquatic and other life-forms dependent on a particular water source. See *The Endangered Species Act*, 16 U.S.C. § 1531-1543; *Babbitt v. Sweet Home Chapter of Communities*, 515 U.S. 687 (1995); *Tennessee Valley Auth’y v. Hill*, 437 U.S. 153 (1978); *National Wildlife Federation v. Federal Energy Regulatory Comm’n*, 801 F.2d 1505 (9th Cir. 1986); *Riverside Irrig. Dist. v. Andrews*, 758 F.2d 508 (10th Cir. 1985); *SAX et al.*, at 651-72; WEBER, HARDER, AND BEARDEN, at 587-600; Melissa Estes, *The Effects of the Federal Endangered Species Act on State Water Rights*, 22 ENVTL. L. 1027 (1992). See generally Hal Beecher, *Standards for Instream Flows*, 1 RIVERS 97 (1990); Dellapenna, § 9.05(b); Andrew Solow, Stephen Polasky, and James Broadus, *On the Measurement of Biological Diversity*, 24 J. ENVTL. ECON. AND MGT. 60 (1993).

Cross references: § 1R-1-09 (coordination of water allocation and water quality regulation); § 1R-1-11 (preservation of minimum flows and levels); § 2R-2-03 (chemical integrity); § 2R-2-16 (physical integrity); § 2R-2-18 (the public interest); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-33 (water source); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels).

Comparable statutes: ARK. CODE ANN. § 15-22-202(6)(C); FLA. STAT. ANN. §§ 373.042(1), 373.223(3); HAW. REV. STAT. § 174C-71(1)(C), (3); MINN. STAT. ANN. § 105.417(3), (4); VA. CODE ANN. § 62.1-246(1), 62.1-248(A).

§ 2R-2-03 Chemical Integrity

The “chemical integrity” of a water source means the maintenance of water in the source in the volume and at the times necessary to enable a water source to achieve the water quality standards prescribed for the water source by federal or state laws or regulations in light of authorized effluent discharges and other expected impacts on the water source.

Commentary: Although the waters of a State continue to be used to dispose of waste materials and probably always will be so used to some extent, sustainable development requires respect for and protection of the chemical integrity of water sources. Today, such discharges are extensively regulated under the Clean Water Act, 33 U.S.C. §§ 1251-1387, and other laws and regulations. Such regulations necessarily presuppose some minimum water level or flow regime to enable adequate waste assimilation by authorized discharges. The preservation of that minimum level or flow regime is here defined as the chemical integrity of the stream as defined in other relevant laws or regulations. The term comes from the Clean Water Act, where it is one of the three fundamental criteria for setting effluent standards, although the Clean Water Act does not express its mandate in terms of “integrity.” 33 U.S.C. § 1314(b). This approach is taken in order to provide a measure of certainty to the otherwise vague standards proposed to define minimum flows or levels. The preservation of the chemical integrity of a water source is necessary so that neither human nor other life-forms are endangered by excessive pollution or low flows. See, e.g., *Arkansas v. Oklahoma*, 503 U.S. 91 (1992); *National Wildlife Federation v. Gorsuch*, 693 F. Supp. 156 (D. D.C. 1982). See generally *SAX et al.*, at 1042-56; WEBER, HARDER, AND BEARDEN, at 553-76.

No policy of the American Society of Civil Engineers directly supports this provision. It is nonetheless inferable from policies relating to the protection of water quality. *ASCE Policy Statements* No. 131 on Growth and Development, No. 243 on Ground Water Management, No. 361 on Implementation of Safe Drinking Water Regulations; No. 362 on Comprehensive Pollution Management, No. 378 on National Wetlands Regulatory Policy, No. 437 on Risk Management, and No. 461 on Nonpoint Source Pollution.

Cross references: § 1R-1-09 (coordination of water allocation and water quality regulation); § 1R-1-11 (preservation of minimum flows and levels); § 2R-2-02 (biological integrity); § 2R-2-16 (physical integrity); § 2R-2-18 (the public interest); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-33 (water source); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels).

Comparable statutes: ARK. CODE ANN. § 15-22-202(6)(D); GA. CODE ANN. § 12-5-96(d)(3); MISS. CODE ANN. § 51-3-7(4); VA. CODE ANN. § 62.1-243; WIS. STAT. ANN. § 144.026(5)(e)(6).

§ 2R-2-04 Comprehensive Water Allocation Plan

A “comprehensive water allocation plan” is a plan developed by the State Agency for the intermediate and long-term protection, conservation, augmentation, and management of all the water of the State and is designed to promote and secure the sustainable development and reasonable use of the waters of the State, taking into account economic, environmental, and other social values.

Commentary: Many States now require comprehensive planning as a necessary precondition to any effective regulation of the use of the waters of the State. Such planning seeks to define the public interest in the waters of the State and to determine the data necessary for decision making to achieve the public interest and the sustainable development of the waters of the State. This section defines the comprehensive water allocation plan as an intermediate- to long-term plan for the overall management of the waters of the entire State. States opting for the Special Water Management Area approach should consider whether those Areas as well as the State Agency should be required to develop intermediate- to long-term plans. See Dellapenna, § 9.05(a). For the relevant policies of the American Society of Civil Engineers,

see *ASCE Policy Statements* No. 337 on Water Conservation, No. 348 on Emergency Plans for Water Supply, No. 408 on Planning and Management for Droughts, No. 421 on Floodplain Management, No. 422 on Watershed Management, and No. 437 on Risk Management.

Cross references: § 1R-1-04 (comprehensive planning); § 2R-2-09 (drought management strategies); § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); § 2R-2-32 (waters of the State); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); §§ 4R-4-01 to 4R-4-08 (Special Water Management Areas).

Comparable statutes: ALA. CODE § 9-10B-5(1); MASS. GEN. LAWS ANN. ch. 21g, § 2; N.Y. ENVTL. CONSERV. LAW §§ 15-0107 (6), 15-1301(1).

§ 2R-2-05 Conservation Measures

“Conservation measures” refers to any measures adopted by a water right holder, or several water right holders acting in concert pursuant to an approved conservation agreement under section 7R-3-06, to reduce the withdrawals or consumptive uses, or both, associated with the exercise of a water right, including, but not limited to

- (a) improvements in water transmission and water use efficiency,
- (b) reduction in water use,
- (c) enhancement of return flows, and
- (d) reuse of return flows.

Commentary: Sustainable development requires steps to conserve the waters of the State. See *ASCE Policy Statement* No. 337 on Water Conservation. This definition limits the application of the term “conservation measures” to practices relating to a water right by the holder of the right, an important aspect of conservation for which special provision is made in this Regulated Riparian Model Water Code. Specifically excluded from this definition are practices applied to native or naturally occurring waters, return flows from other water rights, or other water sources not associated with the water right holder or sought by the applicant. These exclusions are designed to prevent someone from evading the regulatory and managerial responsibilities of the State Agency through actions not taken under their own permit and thus subject to the terms and conditions of that permit. For example, a person not holding a water right is not permitted to eradicate phreatophytes along a stream and claim the resulting reduction in water consumption as a conservation measure entitling that person to any rights to the water saved. In addition, a person would not be able to develop runoff from an upland irrigator under the guise of water conservation except by procuring a permit pursuant to this Code for such development or pursuant to an agreement with the other water right holder under section 7R-3-06(3), (4). Persons who claim to be conserving water other than for their own use under a permit are required to seek a permit for such water (and the practices said to develop or conserve that water), just like anyone else seeking to initiate a new use of water. See Robert Beck and Amy Kelley, *The Uses of and Demands for Water*, in *WATERS AND WATER RIGHTS* § 2.02.

Nothing in this Code attempts to spell out in detail what steps might actually qualify as appropriate conservation measures. Such efforts as improved efficiency in manufacturing processes, the substitution of drip irrigation for sprinklers, or the introduction by a public water supply enterprise of a requirement that customers use low-flow toilets or showerheads would all be appropriate examples. The Code leaves the precise details

regarding the suitability of these or other possible conservation measures to be developed by the regulatory and planning processes prescribed for the State Agency.

Cross references: § 1R-1-10 (water conservation); §§ 2R-2-06 (consumptive use); § 2R-2-13 (nonconsumptive use); § 2R-2-17 (plan for conservation); § 2R-2-20 (reasonable use); § 2R-2-21 (safe yield); § 2R-2-23 (State Agency); § 2R-2-24 (sustainable development); § 2R-2-27 (waste of water); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); § 2R-2-32 (waters of the State defined); § 4R-1-06 (regulatory authority of the State Agency); § 4R-2-01 (the comprehensive water allocation plan); § 4R-2-02 (drought management strategies); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 7R-1-01 (permit terms and conditions).

§ 2R-2-06 Consumptive Use

A “consumptive use” is any use of water that is not a “nonconsumptive use” as defined in section 2R-2-13 of this Code, including, without being limited to, evaporation or the incorporation of the water into a product or crop.

Commentary: A consumptive use is one that diminishes the quantity or quality of water in a water source. Excessive consumptive use impairs the sustainable development of a water source. By defining “consumptive use” as any use that is not a “nonconsumptive use,” the Regulated Riparian Model Water Code resolves all instances of water use in which the obligation to obtain a permit from the State Agency might be in doubt in favor of the permit obligation. See RICE AND WHITE, at 147, 169; Robert Beck and Amy Kelley, *The Uses of and Demands for Water*, in *WATERS AND WATER RIGHTS* § 2.01; Dellapenna, §§ 6.01(a)(4), 7.03(c).

Cross references: § 2R-2-13 (nonconsumptive use); § 2R-2-20 (reasonable use); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-33 (water source).

Comparable statutes: GA. CODE ANN. § 12-5-92(3); HAW. REV. STAT. § 174C-3 (“noninstream use”); N.J. STAT. ANN. § 58:1A-3(b); N.C. GEN. STAT. § 143-215.21(3); WIS. STAT. ANN. § 144.026(c).

§ 2R-2-07 Cost

“Cost” means direct and indirect expenditures, commitments, and net induced adverse effects, whether compensated or not, incurred or occurring in connection with the establishment, acquisition, construction, maintenance, or operation of any facility or activity for which a permit is required by this Code.

Commentary: The Regulated Riparian Model Water Code uses the term “cost” in the sense of “opportunity costs,” referring to the value of foregone opportunities made necessary by the project or activity for which the cost is to be determined. Opportunity costs include the actual out-of-pocket expenditures the necessary action or forbearance will entail, but also include the adverse effects on others regardless of whether those effects are compensated.

Cross references: § 5R-2-03 (administrative resolution of disputes among holders of permits to withdraw water); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable).

§ 2R-2-08 Domestic Use

A “domestic use” is a direct use of water for ordinary household purposes, including immediate human consumption (including sanitation and washing), the watering of

animals held for personal use or consumption, and home gardens and lawns.

Commentary: The Regulated Riparian Model Water Code provides preferences to domestic use based on the fact that such uses involve a person taking water directly from a water source for uses that are immediately necessary for human health and safety and on the supposition that such uses, even in the aggregate, place relatively small demands on the waters of the State. Note that “domestic use” refers only to direct use from a water source and does not include water that a user either buys from a delivery system or holds for sale to others. This section provides a standard definition of “domestic use,” clarified to exclude general or commercial activities. As domestic uses are given a preferred status, it is inappropriate for commercial activities, such as large-scale animal husbandry, to be classified as a domestic use. In watering animals, only the water consumed by household pets or the few animals held for the personal needs of the members of the household qualify as a domestic use of water. For the common law antecedents of the concept of “domestic use,” *see* Dellapenna, § 7.02(b)(1). For the preferences accorded domestic uses in regulated riparian codes, *see* Dellapenna, § 9.03(a)(3).

Cross references: § 3R-1-03 (small water sources exempted from allocation); § 6R-1-02 (small withdrawals exempted from the permit requirement); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 6R-3-04 (preferences among water rights).

Comparable statutes: ARK. CODE ANN. § 15-22-202(5); FLA. STAT. ANN. § 373.019(6); HAW. REV. STAT. § 174C-3; IND. CODE ANN. § 13-2-1-3(1); KY. REV. STAT. ANN. § 151.100(9); MISS. CODE ANN. § 51-3-3(c); S.C. CODE ANN. § 49-5-30(6).

§ 2R-2-09 Drought Management Strategies

“Drought management strategies” are plans devised by the State Agency pursuant to this Code for the allocation of water during periods of drought and otherwise to cope with water shortages or water emergencies and, in so far as is reasonably possible, to restore the waters of the State to their condition prior to the drought.

Commentary: A “drought management strategy” is a specific course of conduct planned by the State Agency as a necessary or appropriate response to a water shortage or a water emergency. Generally, such shortages or emergencies will arise from a drought, but they could arise from other causes as well, such as the collapse of a dam with the resulting draining of a reservoir on which a group of users depend. The strategies shall relate to possible revisions of water allocations made necessary by the shortage or emergency or to steps to conserve or restore water generally, all within a framework shaped by the pervasive goal of sustainable development. Strategies can be planned to apply either to a part of, or to all of, the State. For analysis of the drought-response patterns found in existing regulated riparian statutes, *see* Dellapenna, § 9.05(a), (d). *See also* ASCE Policy Statements No. 337 on Water Conservation and No. 408 on Planning and Management for Droughts.

The term “drought management strategies” reflects the focus of the Regulated Riparian Model Water Code on water allocation only. In States where the State Agency is also given responsibility for water quality, flood control, and other non-allocational issues, the term should be “water shortage and water emergency strategies,” with the definition suitably revised and renumbered. The definition of “water emergency” should also be revised to reflect these broader concerns.

Cross references: § 2R-2-24 (sustainable development); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); §§ 7R-3-01 to 7R-3-07 (restrictions during water shortages or water emergencies).

§ 2R-2-10 Interbasin Transfer

An “interbasin transfer” is any transfer of water, for any purpose and regardless of the quantity involved, from one water basin to another.

Commentary: This definition merely makes clear that the term “interbasin transfer” is not limited in any fashion but refers to all transfers from one water basin to another. The provisions regarding interbasin transfers allow regulations to exempt certain small transfers. *See generally* ASCE Policy Statement No. 422 on Watershed Management.

Cross references: § 1R-1-12 (recognizing local interests in the waters of the State); § 2R-1-02 (no prohibition of use based on location of use); § 2-3-28 (water basin defined); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 6R-3-06 (special standard for interbasin transfers); § 7R-1-01(k) (payment into the Interbasin Compensation Fund); §§ 8R-1-01 to 8R-1-07 (multijurisdictional transfers).

Comparable statute: CONN. GEN. STAT. ANN. § 22a-367(5).

§ 2R-2-11 Modification of a Water Right

A “modification of a water right” is any change in the terms and conditions of a permit, whether voluntary or involuntary on the part of the permit holder, including, without being limited to

- (a) exchanges of water rights, or
- (b) changes in
 - (1) the holder of the permit;
 - (2) the nature, place, quantity, or time of use;
 - (3) the point or means of diversion;
 - (4) the place or manner of storage or application;
 - (5) the point of return flow; or
 - (6) any combination of such changes.

Commentary: The term “modification of a water right” includes water reallocation as well as other changes in water rights. “Modifications” can be either voluntary or involuntary changes. In short, a modification amounts to a reallocation of the water. A voluntary modification typically involves the sale of the water right to another user. Examples of involuntary transfers include those arising on the death of a permit holder or the enforcement of creditors’ rights. “Modifications” do not include involuntary losses of water rights, such as forfeitures or revocations, imposed by this Model Water Code. *See* Dellapenna, §§ 7.04, 9.03(d).

Cross references: § 1R-1-07 (flexibility through the modification of water rights); §§ 7R-2-01 (approval required for modification of permits); § 7R-2-02 (approval of non-injurious modifications).

Comparable statute: HAW. REV. STAT. § 174C-3 (“change of use”).

§ 2R-2-12 Municipal Uses

“Municipal uses” are uses of water by a publicly or privately-owned public water supply system for the life, safety, health, and comfort of the inhabitants of a community and non-industrial businesses serving those needs.

Commentary: This definition indicates that the term “municipal uses” refers to all needs of inhabitants or customers of a municipal or public water supply system except for industrial uses. The Regulated Riparian Model Water Code gives a preference for municipal uses similar to the preferences for domestic uses. This preference should be limited to uses that are comparable to domestic uses. Industrial uses, however supplied, are relatively less preferred than either domestic or municipal uses as defined in this Code. The term “non-industrial business uses” is not defined in this Code, leaving that task to regulations to be adopted by the State Agency. The point of the distinction is between the large-scale industrial users that are not so immediately tied to the life, safety, health, and comfort of the inhabitants of the municipality on the one hand, and the needs of the generally smaller scale non-industrial businesses that serve the pressing needs of the inhabitants of their communities on the other. *See* Dellapenna, §§ 7.05(c), 9.03(a)(3).

Cross references: § 2R-2-08 (domestic use); § 2R-2-19 (public water supply system); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 6R-3-04 (preferences among water rights).

Comparable statutes: HAW. REV. STAT. § 174C-3; MISS. CODE ANN. § 51-3-3(d).

§ 2R-2-13 Nonconsumptive Use

A “nonconsumptive use” is a use of water withdrawn from the waters of the State in such a manner that it is returned to its waters of origin at or near its point of origin without substantial diminution in quality or quantity and without resulting in or exacerbating a low-flow condition.

Commentary: Nonconsumptive uses of water do not require a permit under the Regulated Riparian Model Water Code. Such uses are defined here as including only uses that have no substantial effect on the quantity or quality of the water in the water source. The State Agency will define what constitutes a “substantial diminution” through its regulations. “Nonconsumptive uses” will include only non-polluting uses that are either instream or inground or provide a near complete return flow at or near the point of withdrawal without significant changes in quality. All other uses are considered consumptive and require a permit unless otherwise exempted under this Code. RICE AND WHITE, at 176; Dellapenna, §§ 6.01(a)(3), 7.03(b).

Cross references: §1R-1-09 (coordination of water allocation and water quality regulation); § 2R-2-06 (consumptive use); § 2R-2-20 (reasonable use); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); §§ 6R-4-01 to 6R-4-05 (coordination of water allocation and water quality regulation).

Comparable statutes: GA. CODE ANN. § 12-5-92(7); HAW. REV. STAT. §174C-3 (“instream use”); MASS. GEN. LAWS ANN. ch 21G, § 2; N.J. STAT. ANN. § 58:1A-3(e); N.C. GEN. STAT. § 143-215.21(5); VA. CODE ANN. § 62.1-242.

§ 2R-2-14 Permit

A “permit” under this Code means a written authorization issued by the State Agency to a person entitling that person to hold and exercise a water right involving the withdrawal of a specific quantity of water at a specific time and place for a specific reasonable use as described in the written authorization.

Commentary: The introduction of the requirement of a permit for withdrawals is the central operative feature of the Regulated Riparian Model Water Code. This definition describes the concept of a “permit” in general terms that are fleshed out in detail in

Chapters 6 and 7 of this Code. *See* Dellapenna, § 9.03(a). *See also* ASCE Policy Statement No. 243 on Ground Water Management; MALONEY, AUSNESS, AND MORRIS, §§ 2.01-2.09; SAX, ABRAMS, AND THOMPSON, at 101-18; WILLIAM WALKER AND PHYLLIS BRIDGEMAN, A WATER CODE FOR VIRGINIA §§ 2.01-2.08 (Va. Polytech. Inst., Va. Water Resources Res. Center Bull. No. 147, 1985). Although the withdrawal of water triggers the permit requirement, the permit itself focuses on whether the withdrawal will result in the consumptive use of water. Certain small users who are in principle subject to the permit requirement are exempted by specific provisions of the Code.

Cross references: § 1R-1-01 (protecting the public interest in the waters of the State); § 2R-2-06 (consumptive use); § 2R-2-34 (withdrawal or to withdraw); § 3R-1-03 (small water sources exempted from allocation); §§ 6R-1-01 to 6R-1-05 (the requirement of a permit); 6R-1-06 (registration of withdrawals not subject to permits); §§ 6R-2-01 to 6R-2-08 (permit procedures); §§ 6R-3-01 to 6R-3-06 (the basis of a water right); §§ 6R-4-01 to 6R-4-05 (coordination of water allocation and water quality regulation); § 7R-1-01 (permit terms and conditions).

Comparable statutes: ALA. CODE § 9-10B-3(4) (“certificate of use”); IOWA CODE ANN. § 455B.261(10); MASS. GEN. LAWS ANN. ch. 21G, § 2; VA. CODE ANN. § 62.1-242; VA. CODE ANN. § 62.1-44.85(10).

§ 2R-2-15 Person

“Person” includes an individual, a partnership, a corporation, a municipality, a State (including this State), the United States, an interstate or international organization, or any other legal entity, public or private.

Commentary: The definition of “person” includes all persons known to the law, natural and artificial.

Comparable statutes: ALA. CODE § 9-10B-3(14); ARK. CODE ANN. § 15-22-202(8); CONN. GEN. STAT. ANN. § 22a-367(7); DEL. CODE ANN. tit. 7, § 6002(15); FLA. STAT. ANN. § 373.019(5); GA. CODE ANN. §§ 12-5-22(7), 12-5-92(8); HAW. REV. STAT. § 174C-3; ILL. COMP. STAT. ANN. ch. 525, ¶ 45/4(e); IND. CODE ANN. §§ 13-2-1-4(5), 13-2-2.5-2, 13-2-2.6-7, 13-2-6.1-1; KY. REV. STAT. ANN. § 151.100(13); MD. CODE ANN., NAT. RES. § 8-101(h); MASS. GEN. LAWS ANN. ch. 21G, § 2; MISS. CODE ANN. § 51-3-3(a); N.J. STAT. ANN. § 58:1A-3(f); N.Y. ENVTL. CONSERV. LAW § 15-0107(1); S.C. CODE ANN. § 49-5-30(3); VA. CODE ANN. § 62.1-44.85(11); WIS. STAT. ANN. §§ 144.01(9m), 144.026(i).

§ 2R-2-16 Physical Integrity

The “physical integrity” of a water source means the volume of water necessary to

- support commercial navigation of the water source as required by federal or state law or regulation;
- preserve natural, cultural, or historic resources as determined by or as required by federal and state law or regulation;
- provide adequate recreational opportunities to the people of the State; and
- prevent serious depletion or exhaustion of the water source.

Commentary: Water is used in-place for a range of important human uses, uses that will often be incompatible with the withdrawal of water from the water source. Sustainable development requires respect for and protection of the physical integrity of water sources. As with biological and chemical integrity, this term

comes from the Clean Water Act where it is one of the three fundamental criteria for setting effluent standards, although the Clean Water Act does not express its mandate in terms of “integrity.” 33 U.S.C. § 1314(b). This obligation includes an obligation to maintain streambed integrity and stream channel characteristics. As is clear in the Clean Water Act, these are not ends in themselves, however, but rather means to achieve certain goals that result from respecting the physical integrity of the water source. These goals are set forth in the section.

This approach is taken in order to provide a measure of certainty to the otherwise vague standards proposed to define minimum flows or levels. The definition does not limit itself exclusively to protecting physical integrity as defined by other relevant laws and regulations but introduces two additional restraints: the provision of adequate recreational opportunities and the prevention of serious depletion or exhaustion of the water source. These latter standards are not precisely defined but are to be informed by the policies of the Code and the limitations of the public interest as defined in this Code. This section describes those uses in general terms and defines the physical integrity of the water source in terms of the water necessary for those uses. *See generally* Hal Beecher, *Standards for Instream Flows*, 1 RIVERS 97 (1990); Dellapenna, § 9.05(b).

No ASCE policy directly supports this provision. It is nonetheless inferable from policies relating to the protection of water quality. *ASCE Policy Statements* No. 131 on Growth and Development, No. 243 on Ground Water Management, No. 361 on Implementation of Safe Drinking Water Regulations, No. 362 on Comprehensive Pollution Management, No. 378 on National Wetlands Policy, No. 437 on Risk Management, and No. 461 on Nonpoint Source Pollution.

Cross references: § 1R-1-09 (coordination of water allocation and water quality regulation); § 1R-1-11 (preservation of minimum flows and levels); § 2R-2-02 (biological integrity); § 2R-2-03 (chemical integrity); § 2R-2-18 (the public interest); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-33 (water source); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels).

Comparable statutes: ARK. CODE ANN. §§ 15-202(6)(B), 15-22-301(11); GA. CODE ANN. § 12-5-96(d)(3); IOWA CODE ANN. § 455B.267(3); MASS. GEN. LAWS ANN. ch. 21G, § 7(3), 11; MINN. STAT. ANN. § 105.417(2), (3); MISS. CODE ANN. § 51-3-7(5); VA. CODE ANN. §§ 62.1-246(1), 62.1-248(A).

§ 2R-2-17 Plan for Conservation

A “plan for conservation” is a detailed plan describing and quantifying the amount and use of water to be developed by conservation measures in the exercise of a water right.

Commentary: A plan for conservation provides a basis for the State Agency to appraise the conservation measures that a permit applicant is committing to undertake or to determine the amount of water developed by conservation measures and the means necessary to enable the developer to use the water without unreasonable injury to other water right holders. The items to be included in the plan are intentionally left vague to allow innovative and imaginative formulations of plans for conservation. This definition is patterned after Colorado’s provision of Plans for Augmentation, which are intended to provide increased flexibility in the use of water rights. *See generally* *ASCE Policy Statement* No. 337 on Water Conservation.

Cross references: § 1R-1-10 (water conservation); § 2R-2-05 (conservation measures); § 2R-2-21 (safe yield); § 2R-2-24

(sustainable development); § 6R-2-01 (contents of an application for a permit); § 6R-3-01 (standards for a permit).

Comparable statute: GA. CODE ANN. §§ 12-5-31(d), 12-5-96(a)(2).

§ 2R-2-18 The Public Interest

The “public interest” is any interest in the waters of the State or in water usage within the State shared by the people of the State as a whole and capable of protection or regulation by law, as informed by the policies and mandates of this Code.

Commentary: The drafters of the Regulated Riparian Model Water Code undertook to define “the public interest” with some trepidation as this phrase is invoked in innumerable contexts and with highly variable meanings. It is probably the most elastic term used by jurists, lawyers, and politicians when talking about water or any other topic. As the term is used in the Code, it is too important not to attempt some definition, yet any definition must not become a straitjacket that artificially restricts the range of concerns that a court or the State Agency can take into account when interpreting and applying this Code. We believe the foregoing definition achieves those goals.

Generally, “the public interest” will center on, but not be limited to, the pervasive goal of sustainable development. The definition of “the public interest” offered here seeks to impose only two minimal restraints on the broad range of arguments that can be marshaled regarding the public interest generally and sustainable development in particular: that the interests claimed be broadly shared by the State as a whole rather than reflecting only the narrow interests of some small segment of the community that is the State; and that the interests claimed be capable of protection or regulation by law. The Code goes on to remind potential interpreters that in seeking “the public interest” in the waters of the State, the State Agency, courts, and other interpreters are to be guided by the policies of this Code. In this regard, the overall policy of protecting “the public interest” in the waters of the State (section 1R-1-01) will often be the most important guide, but all of the policies in Chapter 1 will be relevant in suitable contexts. Nothing in these policies or in this definition of “the public interest” authorizes the disregard of an express mandate of this Code. Within these admittedly broad constraints, the interpretation and application of “the public interest” will require mature and sophisticated judgments and remain subject to considerable debate. A more specific catalogue of what concerns constitute “the public interest” is found in section 6R-3-02(e).

Cross references: §§ 1R-1-01 to 1R-1-15 (declarations of policy); § 2R-2-24 (sustainable development); § 2R-2-32 (waters of the State); § 6R-3-02 (determining whether a use is reasonable).

§ 2R-2-19 Public Water Supply System

- (1) A “public water supply system” is a system for providing piped water to the public for human consumption if the system has at least 15 service connections or regularly serves at least 25 individuals for their personal consumption daily for at least 60 days of the year.
- (2) A “public water supply system” includes any collection, treatment, storage, and distribution facilities under control of the operator of the system and used primarily in connection with the system and any collection or pretreatment storage facilities used primarily in connection with the system regardless of who owns or controls such facilities.

Commentary: The Regulated Riparian Model Water Code provides preferences for municipal uses or other activities by public water supply systems. This definition of a “public water supply system” is taken from the federal Safe Drinking Water Act, 42 U.S.C. § 300(f)(4). The definition sets minimum standards regarding service connections or individuals served to qualify as a public water supply system, while indicating that the preferences apply to the full range of activities necessary to maintain the public supply. The definition includes privately owned as well as publicly owned systems. States considering enacting this Code might consider whether they would prefer to set the minimum standards lower than those expressed in subsection (1) of this section. Any attempt to set those standards higher would prevent the State from complying with the federal standards mandated by the Safe Drinking Water Act. *See generally* Dellapenna, § 9.05(c).

Cross references: § 2R-2-08 (domestic use); § 2R-2-12 (municipal uses); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 6R-3-04 (preferences among water rights).

Comparable statutes: ALA. CODE § 9-10B-3(15); FLA. STAT. ANN. § 373.1962; MASS. GEN. LAWS ANN. ch. 21G, § 2; N.Y. ENVTL. CONSERV. LAW § 15-1301(2).

§ 2R-2-20 Reasonable Use

“Reasonable use” means the use of water, whether in place or through withdrawal, in such quantity and manner as is necessary for economic and efficient utilization without waste of water, without unreasonable injury to other water right holders, and consistent with the public interest and sustainable development.

Commentary: “Reasonable use” has long been the criterion of decision under the common law of riparian rights. In that setting, the concept was strictly relational, with the court deciding whether one use was “more reasonable” than a competing or interfering use, except in the rare case when a particular use was “unreasonable *per se*.” *See generally* *Restatement (Second) of Torts* ch. 41 (1979); Dellapenna, §§ 7.02(d), 7.03. The Regulated Riparian Model Water Code defines “reasonable use” in rather more abstract terms relating to the manner in which water is used, but also retains the relational concept that a reasonable use is one that does not unreasonably injure other uses. *See* Dellapenna, § 9.03(b) (1). The framework of analysis of whether a particular use is reasonable will be dictated by the goal of sustainable development.

Generally, the existing regulated riparian statutes do not attempt to define the term “reasonable use,” perhaps believing that the term is incapable of definition. Several regulated riparian statutes use terms such as “equitable portion,” “beneficial use,” or “reasonable-beneficial use,” but define those terms in language similar to the definition of “reasonable use” in this Code. Dellapenna, § 9.03(b)(2).

Cross references: § 2R-2-18 (the public interest); § 2R-2-24 (sustainable development); § 5R-2-03 (administrative resolution of disputes among holders of permits to withdraw water); § 6R-3-02 (determining whether a use is reasonable).

Comparable statutes: ALA. CODE § 9-10B-3(2) (“beneficial use”); DEL. CODE ANN. tit 7, § 6010(f)(1) (“equitable apportionment”); FLA. STAT. ANN. § 373.019(4) (“reasonable-beneficial use”); HAW. REV. STAT. § 174C-3 (“reasonable-beneficial use”); ILL. COMP. STAT. ANN. ch 525, ¶ 45/4(g); IND. CODE ANN. 13-2-6.1-1 (“reasonable-beneficial use”); IOWA CODE ANN. § 455B.261 (7) (“beneficial use”); MISS. CODE ANN. § 51-3-3(e) (“beneficial use”); VA. CODE ANN. §§ 62.1-10(b), 62.1-242 (“beneficial use”).

§ 2R-2-21 Safe Yield

- (1) **The “safe yield” of a water source is the amount of water available for withdrawal without impairing the long-term social utility of the water source, including the maintenance of the protected biological, chemical, and physical integrity of the source.**
- (2) **“Safe yield” is determined by comparing the natural and artificial replenishment of the water source to existing or planned consumptive and nonconsumptive uses.**

Commentary: The concept of “safe yield” is central to achieving the goal of sustainable development. The Regulated Riparian Model Water Code adopts a definition of “safe yield” that is not purely hydrologic (i.e., that does not limit withdrawals under all circumstances to the average annual inflow into or recharge of the water source). Instead, the Code authorizes the State Agency to determine the level of withdrawal that will not impair the long-term social utility of the water source, a somewhat less definite limitation, yet one that still serves to prohibit impairment of what ought to be, in the long-term, a renewable resource. As withdrawal in this Code includes controlled storage as well as actual removal from the water source, some withdrawals might actually increase the safe yield of a water source.

Often, perhaps usually, the State Agency will decide that the safe yield of a water source is no more than its natural rate of replenishment. The standard in this section, however, allows the Agency to consider human need as well as the physical characteristics of the water source and to authorize some depletion when appropriate so long as the Agency is not committed to the utter destruction of the water source. What does provide an absolute limit on the “safe yield” is the protection of the biological, chemical, and physical integrity of the water source. Analysis of the safe yield of a water source must take into account the nature of the withdrawal and use, its importance for human and other communities dependent on the water source, and the withdrawal’s actual effects on the continuing yield of the water source. Some States might prefer to cast this definition simply in terms of annual inflow or recharge.

Cross references: § 1R-1-10 (water conservation); § 2R-2-02 (biological integrity); § 2R-2-03 (chemical integrity); § 2R-2-05 (conservation measures); § 2R-2-06 (consumptive use); § 2R-2-13 (nonconsumptive use); § 2R-2-16 (physical integrity); § 2R-2-24 (sustainable development); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); § 2R-2-33 (water source); § 3R-2-01 (protected minimum flows or levels not to be allocated or withdrawn); § 3R-2-02 (standards for protected minimum flows or levels); § 3R-2-03 (effects of water shortages or water emergencies); § 4R-2-01 (the comprehensive water allocation plan); § 6R-1-03 (existing withdrawals); § 6R-3-01 (standards for a permit).

Comparable statutes: HAW. REV. STAT. § 174C-3; MASS. GEN. LAWS ANN. ch. 21G, § 2.

§ 2R-2-22 Special Water Management Area (optional)

A “Special Water Management Area” is a form of an administration under which the waters of the State within a hydrogeographically defined region of the State are managed by an Area Water Board responsible for the waters within that region.

Commentary: This definition is necessary only in States that opt to divide the active management of their waters among Special Water Management Areas. While the boundaries of the Areas are to be set by the State Agency, according to the hydrological and other physical features defining the interrelationships

between water sources, the inclusion of geographic factors enables the State Agency also to consider the proper coordination of existing or foreseeable human activities in setting the boundaries of the Areas. The State Agency is to consider underground water as well as surface water sources (usually not including diffused surface and atmospheric water) in setting the boundaries of Water Management Areas. The details of this arrangement are set forth in Part 4 of Chapter 4 of this Code. *See* Dellapenna, § 9.03(a)(5)(A); Susan B. Peterson, Note, *Designation and Protection of Critical Ground Water Areas*, 1991 BYU L. Rev. 1393.

The creation of Special Water Management Districts might be necessary to accommodate the policy of ensuring the recognition of local interests in the management of the waters of the State. These policies have been endorsed in several *ASCE Policy Statements*. *See ASCE Policy Statements* No. 139 on Public Involvement in the Decision Making Process, No. 302 on Cost Sharing in Water Resources Infrastructure Programs, and No. 427 on Regulatory Process for Infrastructure Development.

Cross references: § 1R-1-12 (recognizing local interests in the waters of the State); §§ 4R-4-01 to 4R-4-08 (Special Water Management Areas).

Comparable statutes: ALA. CODE § 9-10B-3(3); ARK. CODE ANN. § 15-22-221; FLA. STAT. ANN. § 373.019(2); HAW. REV. STAT. § 174C-3; VA. CODE ANN. § 62.1-242.

§ 2R-2-23 State Agency

The phrase “State Agency” refers to [the State’s water resources allocation administrative agency]. The State Agency shall serve as the central unit of the State’s government for protecting, maintaining, improving, allocating, and planning regarding the waters of the State pursuant to this Code.

Commentary: The proper name of the agency selected in each State enacting this Regulated Riparian Model Water Code could be substituted for the term “State Agency” whenever that term appears in this Code. This definition could then be omitted or modified accordingly. The State Agency is the agency responsible at the level of statewide planning and activity; Special Water Management Areas (for States using them) are defined elsewhere.

Cross references: §§ 4R-1-01 to 5R-5-03 (the authority and responsibility of the State Agency).

§ 2R-2-24 Sustainable Development

“Sustainable development” means the integrated management of resources, taking seriously the needs of future generations as well as the current generation, ensuring equitable access to resources, optimizing the use of non-renewable resources, and averting the exhaustion of renewable resources.

Commentary: The concept of “sustainable development” originated in the writings of economist Kenneth Boulding. *See* Kenneth Boulding, *The Economics of the Coming Spaceship Earth*, in *RESOURCES FOR THE FUTURE: ENVIRONMENTAL QUALITY IN A GROWING ECONOMY* 3 (Henry Jarrett ed. 1966). A national and international consensus has emerged over the past several decades that “sustainable development” is the proper criterion for combining the exploitation of resources with the protection of the environment. *See the Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/5/Rev. 1 (1992); MICHAEL CARLEY AND IAN CHRISTIE, *MANAGING SUSTAINABLE DEVELOPMENT* (1993); RENE DUBOS AND BARBARA WARD, *ONLY ONE EARTH: THE CARE AND MAINTENANCE OF A SMALL PLANET*

(1972); OECD, *WATER AND CITIES: ENSURING SUSTAINABLE FUTURES* (2015); WORLD COMM’N ON ENVIRONMENT AND DEVELOPMENT, *OUR COMMON FUTURE* (1987) (“The Brundtland Report”); Sharon A. Enzler, Suzanne Sutro Rhees, and Deborah L. Swackhamer, *Finding a Path to Sustainable Water Management: Where We’ve Been, Where We Need to Go*, 39 WM. MITCHELL L. REV. 842, 858-59 (2013). *See also ASCE Policy Statement* No. 418 on the Role of the Civil Engineer in Sustainable Development.

No goal is more important than achieving sustainable development of the water resource. That the resource is finite and that demand is approaching or exceeding the available supply requires that sustainability become the pervasive criterion of both public and private water management. *See* Editorial, *Sustainable Development Will Foster Hydro-Solutions*, U.S. WATER NEWS, June, 1996, at 6. To achieve sustainability will require decisions regarding the conservation of water and steps to limit the use of water to uses that do not permanently impair the biological, physical, and chemical integrity of the resource. This concept was always implicit in the law of riparian rights, for the riparian right to use water has always been characterized as a “usufructory” right. The word “usufructory” combines Latin words that expressed two of the three defining characteristics of complete ownership: *usus*, *fructus*, and *abusus*. The right to the use of the water and to the fruits of that use simply never included the right to waste or destroy the resource. *One River Plaza Condo. Ass’n v. Mitchell*, 609 So. 2d 942, 946 (La. App.), writ denied, 612 So. 2d 81 (La. 1993).

The definition offered in the Regulated Riparian Model Water Code must remain a highly fact-specific analysis of the proper uses of a particular resource in a particular setting. The basic notions captured in the phrase “sustainable development” include that the needs of future generations as well as the present generation must be taken into account in resource planning and use, that all persons should have equitable access to the resources they need, that therefore resources (whether renewable or not) ought not to be exhausted, and that resource management must take place in an integrated manner. In addition to the sources already cited in this commentary, *see* EDITH BROWN WEISS, IN *FAIRNESS TO FUTURE GENERATIONS* (1988); Giancarlo Marini and Pasquale Sacramozzino, *Overlapping Generations and Environmental Control*, 29 J. ENVTL. ECON. AND MGT. 64 (1995). These are all policies expressed and developed in this Code. The concept of sustainable development is closely related to the precautionary principle discussed in the commentary to section 3.04. On the need for the integrated management of water resources, *see* RICE AND WHITE, at 1-11; Peter Fontaine, *EPA’s Multimedia Enforcement Strategy: The Struggle to Close the Environmental Compliance Circle*, 18 COLUM. J. ENVTL. L. 31 (1993); Samuel Wiel, *Need of Unified Law for Surface and Underground Water*, 2 S. CAL. L. REV. 358 (1929).

In a very real sense, this entire Code is a structure for fostering sustainable development. In managing water, sustainable development requires the maintenance of the biological, chemical, and physical integrity of a water source, the coordination of water allocation with the protection of water quality, and steps to cope with droughts and other water emergencies. Generally, sustainable development will also require the integrated management of water sources on a water basin basis and the limiting of withdrawals to the safe yield of each water source.

Cross references: § 1R-1-01 (protecting the public interest in the waters of the State); § 1R-1-02 (ensuring efficient and productive use of water); § 1R-1-03 (conformity to the policies of the Code and to physical laws); § 1R-1-04 (comprehensive planning); § 1R-1-05 (efficient and equitable allocation during shortfalls in supply); § 1R-1-09 (coordination of water allocation

and water quality regulation); § 1R-1-10 (water conservation); § 1R-1-11 (preservation of minimum flows and levels); § 2R-1-01 (the obligation to make only reasonable use of water); § 2R-2-02 (biological integrity); § 2R-2-03 (chemical integrity); § 2R-2-04 (comprehensive water allocation plan); § 2R-2-05 (conservation measures); § 2R-2-06 (consumptive use); § 2R-2-09 (drought management strategies); § 2R-2-13 (nonconsumptive use); § 2R-2-16 (physical integrity); § 2R-2-17 (plan for conservation); § 2R-2-18 (the public interest); § 2R-2-20 (reasonable use); § 2R-2-21 (safe yield); § 2R-2-27 (waste of water); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); § 2R-2-32 (waters of the State); § 2R-2-33 (water source); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); §§ 4R-3-01 to 4R-3-05 (coordination with other branches or levels of government); §§ 6R-3-01 to 6R-3-06 (the basis of a water right); §§ 6R-4-01 to 6R-4-05 (coordination of water allocation and water quality regulation); § 7R-1-01 (permit terms and conditions); §§ 7R-3-01 to 7R-3-07 (restrictions during water shortages and water emergencies); § 8R-1-06 (regulation of uses made outside the State).

§ 2R-2-25 Underground Water

The term “underground water” means water found within zones of saturation beneath the ground, regardless of whether flowing through defined channels or percolating through the ground and regardless of whether the result of natural or artificial recharge.

Commentary: This definition of “underground water” includes all extractable forms of water in the ground, being equivalent to terms such as “ground water,” “groundwater,” or similar expressions. It excludes soil (capillary) moisture that might be drawn upon by plants but cannot practically be withdrawn by direct human activity. *See* RICE AND WHITE, at 173. A somewhat more precise definition is found in the Illinois Water Use Act: water under the ground where the fluid pressure in the pore space is equal to or greater than atmospheric pressure. *See also* Dellapenna, § 6.04; Joseph Dellapenna, *Quantitative Groundwater*, WATERS AND WATER RIGHTS § 18.02.

Cross reference: § 3R-1-01 (waters subject to allocation).

Comparable statutes: ALA. CODE § 9-10B-3(12); DEL. CODE ANN. tit. 7, § 6002(7); FLA. STAT. ANN. § 373.019(9); GA. CODE ANN. § 12-5-92(6); ILL. COMP. STAT. ANN. ch. 525, ¶ 45/4(c); IND. CODE ANN. §§ 13-2-1-4(2), 13-2-2-1, 13-2-6.1-1; IOWA CODE ANN. § 455B.261(4); KY. REV. STAT. ANN. § 15.100(5); S.C. CODE ANN. § 49-5-30(4); VA. CODE ANN. § 62.1-44.85(8).

§ 2R-2-26 Unreasonable Injury

“Unreasonable injury” means an adverse material change in the quantity, quality, or timing of water available for any lawful use caused by any action taken by another person if

- (a) the social utility of the injured use is greater than the social utility of the action causing the injury, or
- (b) the cost of avoiding or mitigating the injury is materially less than the costs imposed by the injury.

Commentary: Prevention of unreasonable injury to other water users is the standard by which the State Agency is to determine whether to reject, alter, or approve a modification of a water right and how to resolve conflicts among water rights. The definition of “unreasonable injury” in the Regulated Riparian Model Water Code recapitulates the definition of unreasonable injury found in innumerable cases applying common law riparian rights. *See, e.g., Harris v. Brooks*, 283 S.W.2d 129 (Ark. 1955); *Three Lakes*

Ass’n v. Kessler, 285 N.W.2d 303 (Mich. App. 1979); *Red River Rolling Mills v. Wright*, 15 N.W. 167 (Minn. 1883). *See generally* RESTATEMENT (SECOND) OF TORTS § 850A (1977); Dellapenna, § 7.02(d)(2), (d)(3).

The Code incorporates the core of the common-law of riparian rights (and of some forms of the law of underground water) without necessarily accepting the particular details of the caselaw developed prior to the Code. The basic change introduced by the Code is that, generally, whether an injury is unreasonable will be determined by the State Agency rather than by a court. This not only means that the decision will be made by persons who better understand the hydrology of the dispute, it also means that, as the State Agency is charged with important and extensive responsibilities for gathering data and developing plans for water usage in the State, the persons making the decision are also likely to be better able to assess the competing social utilities of the two competing uses. As a result, the determination of whether an injury is unreasonable is likely to be somewhat more abstract than when the dispute is presented to a court. *See* Dellapenna, § 7.02(d)(1).

The basic notion is that an injury is unreasonable if the value or social utility of the prevailing use is less than the social value or utility of the impaired use. Another test is if the costs of avoiding or mitigating the injury through steps taken by those responsible for the action causing the injury would be less than the costs of the injury to the one responsible for the injured use. Often this second test will actually be a particular application of the first test of relative social utility, but this will not always be so. Consistent with riparian theory generally, this Code takes the position not only that a less socially valuable use of water should not interfere with a more socially valuable use, but also that no injury should be caused to another lawful use of water if the costs of avoiding that injury are materially less than the losses (costs) caused by the injury.

The concept of “unreasonable injury” does not include immaterial injuries. Nor does it include injuries caused by unreasonable actions of the permit holder complaining of injury. For example, the lowering of a river stage that renders withdrawal more difficult for a permit holder with an inadequate withdrawal facility is not an unreasonable injury. This definition specifically includes effects on the timing of water availability as an injury to other water rights. The maintenance of the timing of water availability to other water rights prevents, for example, a water right holder from maintaining the total volume of annual return flow while altering the temporal distribution of the return flow so that water is not available for other water rights when the other right holders are entitled to withdraw water under a permit. If no specific timing is set forth in the other permit, unreasonable injury would arise if the changes in use prevent the permit holder from withdrawing water as customary if that custom is reasonable. The application of the notion of unreasonable injury is further informed by the limited preferences among water users provided in this Code.

Cross references: § 2R-1-03 (no unreasonable injury to other water rights); §§ 5R-2-01 to 5R-2-03 (dispute resolution); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 6R-3-04 (preferences among water rights); § 7R-2-01 (approval required for modification of permits).

§ 2R-2-27 Waste of Water

“Waste of water” means causing, suffering, or allowing the consumption or use of the waters of the State for a purpose or in a manner that is not reasonable.

Commentary: The Regulated Riparian Model Water Code adopts a broad definition of “waste of water” to enable the State

Agency and the judiciary to regulate or otherwise deal with the waste of water in all of its myriad forms. “Waste of water” includes any use of water that is not reasonable. *See* Dellapenna, § 9.03(b). *See also* RICE AND WHITE, at 2, 125. Waste of water is one of the major impediments to ensuring the sustainable development of the waters of the State. *See also* ASCE Policy Statement No. 337 on Water Conservation.

Cross references: § 1R-1-10 (water conservation); § 1R-1-11 (preservation of minimum flows and levels); § 2R-2-01 (the obligation to make only reasonable use); § 2R-2-05 (conservation measures); § 2R-2-06 (consumptive use); § 2R-2-13 (non-consumptive use); § 2R-2-17 (plan for conservation); § 2R-2-20 (reasonable use); § 2R-2-21 (safe yield); § 2R-2-24 (sustainable development); § 2R-2-29 (water emergency); § 2R-2-31 (water shortage); § 2R-2-32 (waters of the State); §§ 3R-1-01 to 3R-1-03 (waters subject to allocation); §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 4R-2-01 to 4R-2-04 (planning responsibilities); § 6R-3-01 (standards for a permit); § 6R-3-02 (determining whether a use is reasonable); § 7R-1-01 (permit terms and conditions); § 7R-1-03 (forfeiture of permits); § 7R-2-01 (approval required for modification of permits).

Comparable statutes: IND. CODE ANN. §§ 13-2-2-1, 13-2-2-10; IOWA CODE ANN. § 455B.261(12).

§ 2R-2-28 Water Basin

- (1) A “water basin” is an area of land from which all waters drain, on the surface or beneath the ground, to a common point.
- (2) In any administrative or judicial proceeding pursuant to this Code, the water basin shall be measured at the lowest point relevant to the issue to be determined.

Commentary: Often the most significant and most controversial withdrawals of surface or underground water are for uses outside the basin of origin. Although the Regulated Riparian Model Water Code is designed to facilitate as well as to regulate such withdrawals, the importance and difficulty of the issues raised by any large-scale withdrawal out of the basin of origin has required the Code to develop special processes and standards dealing with such diversions. The Code has adopted a broad, hydrologic definition of a water basin, including underground water sources as well as water sources on the surface and limited only by the realization that the area included within a basin is not a fixed hydrologic reality but in fact varies with the scale and purpose of the analysis. For example, a proposal to withdraw water from the Mohawk River in upstate New York for use on the upper Hudson River basin is out of the basin if the complaining party would use the water lower down on the Mohawk but above its confluence with the Hudson. A complaint from someone lower down on the Hudson (below the confluence of the Mohawk), however, would not allow one to characterize the transfer as out of the basin. The Code indicates that the extent of a water basin is to be determined according to the scale necessary to resolve the specific issue under consideration. *See* Dellapenna, § 7.02(a)(2). *See also* ASCE Policy Statement No. 422 on Watershed Management.

Cross references: § 1R-1-03 (conformity to the policies of the Code and to physical laws); § 1R-1-14 (regulating interbasin transfers); § 2R-1-02 (no prohibition of use based on location of use); § 2R-2-10 (interbasin transfer); § 4R-1-06 (regulatory authority of the State Agency); § 4R-2-01 (the comprehensive water allocation plan); § 4R-4-06 (regulatory authority of Special Water Management Areas); § 6R-3-01 (standards for a permit); § 6R-3-06 (special standard for interbasin transfers); § 7R-1-01(k)

(payment into the Interbasin Compensation Fund); §§ 8R-1-01 to 8R-1-06 07 (multijurisdictional transfers).

Comparable statutes: FLA. STAT. ANN. § 373.403(9) (“drainage basin”), (12) (“watershed”); HAW. REV. STAT. § 174C-3 (“hydrologic unit”); IND. CODE ANN. § 13-2-1-4(6) (“watershed”); IOWA CODE ANN. § 455B.261(14) (“water basin”); KY. REV. STAT. ANN. § 151.100(8) (“watershed”); MINN. STAT. ANN. § 105.37(9) (“water basin”).

§ 2R-2-29 Water Emergency

- (1) A “water emergency” is a severe shortage of water relative to lawful demand such that restrictions taken under a declaration of water shortage are insufficient to protect public health, safety, and welfare in all or any part of the State.
- (2) A “water emergency” is recognized in law only as declared by the State Agency.

Commentary: The authority of the State Agency to cope with water emergencies is very broad and extends to the suspension or alteration of any water right. The Regulated Riparian Model Water Code defines a “water emergency” as a severe shortage demanding the most extreme measures to protect public health, safety, or welfare. The State Agency might properly find such a condition to exist in all or only part of the State. The procedures for planning for, declaring, and responding to a water emergency are set out in detail elsewhere in this Code. *See generally* Dellapenna, § 9.05(d). As with the term “drought management strategies,” this definition reflects the exclusive focus of the Code on water allocation issues. Should the State Agency be given responsibility for water quality, flood control, and other non-allocational issues, the definition of “water emergency” should be revised to reflect these broader concerns. *See also* ASCE Policy Statement No. 348 on Emergency Plans for Water Supply.

Cross references: § 1R-1-05 (efficient and equitable allocation during shortfalls in supply); § 2R-2-24 (sustainable development); § 2R-2-31 (water shortage); § 3R-2-03 (effects of water shortages or water emergencies); §§ 7R-3-01 to 7R-3-07 (restrictions during water shortages or water emergencies).

Comparable statute: HAW. REV. STAT. § 174C-3.

§ 2R-2-30 Water Right

A “water right” is a right to withdraw a certain portion of the waters of the State in compliance with the provisions of this Code, whether subject to a permit or otherwise.

Commentary: This definition is adapted from COLO. REV. STAT. ANN. § 37-92-103(2). Holders of water rights have a usufructuary property interest but do not own the corpus of the water to which their right pertains. *See* Strawberry Water Co. v. Paulsen, 220 Ariz. 401, 207 P.3d 654 (Ct. App. 2008), *rev. denied*; Nicoll v. Rudnick, 160 Cal. App. 4th 550, 72 Cal. Rptr. 3d 879 (2008); Dyer v. Hall, 928 N.E.2d 273 (Ind. Ct. App. 2010); New Mexico v. General Elec. Co., 335 F. Supp. 2d 1185 (D.N.M. 2004); Portage Cty. Bd. of Comm’rs v. City of Akron, 109 Ohio St. 3d 106, 846 N.E.2d 478 (2006); City of San Marcos v. Texas Comm’n on Envtl. Qual., 128 S.W.3d 264 (Tex. Ct. App. 2004), *rev. denied*; Dellapenna, §§ 7.02, 7.02(a). *See also* ASCE Policy Statement No. 243 on Ground Water Management; RICE AND WHITE, at 1, 35-38. Some persons will use water without withdrawing it. Examples would be commercial or recreational navigation or similar activities. Such persons do not have a water right under this Code. Their interest is to be protected by the Code’s protection of minimum flows and levels.

Cross references: §§ 3R-2-01 to 3R-2-05 (protected minimum flows or levels); §§ 6R-1-01 to 6R-1-06 (the requirement of a permit); §§ 7R-1-01 to 7R-3-07 (scope of the water right); § 9R-2-05 (water rights derived from atmospheric water management).

§ 2R-2-31 Water Shortage

- (1) A “water shortage” is a condition, in all or any part of the State, where, because of droughts or otherwise, the available water falls so far below normally occurring quantities that substantial conflict among water users or injury to water resources are expected to occur.
- (2) A “water shortage” is recognized in law only as declared by the State Agency.

Commentary: The Regulated Riparian Model Water Code adopts several strategies for coping with situations in which the available water from some or all water sources within the State falls below normal levels, creating a likelihood of conflict among water users who would normally be able to coexist without interference with each other, or if the shortfall otherwise injures the water resources of the State. Without such strategies, there can be no hope of achieving the sustainable development of the waters of the State. These strategies and the procedures to be followed in planning and implementing these strategies, including in declaring a water shortage in all or part of the State, are set out elsewhere in this Code. *See* Dellapenna, § 9.05(d). *See also* ASCE Policy Statement No. 348 on Emergency Plans for Water Supply.

Cross references: § 1R-1-05 (efficient and equitable allocation during shortfalls in supply); § 2R-2-24 (sustainable development); § 2R-2-29 (water emergency); § 2R-2-32 (waters of the State); § 3R-2-03 (effects of water shortages or water emergencies); §§ 7R-3-01 to 7R-3-07 (restrictions during water shortages or water emergencies).

§ 2R-2-32 Waters of the State

The “waters of the State” include all waters, on the surface, under the ground, and in the atmosphere, wholly within or bordering the State or within the jurisdiction of the State.

Commentary: The Regulated Riparian Model Water Code adopts a definition of the waters of the State that includes water through all phases of the hydrologic cycle. The policy of conforming the interpretation and application of this Code to physical laws will guide the State Agency in its interpretation of the consequences of this broad definition and should preclude the Agency from attempting to regulate any aspects of the hydrologic cycle when in fact that aspect cannot be regulated practically or cannot be regulated without infringing upon the legal rights of other States. *See* Dellapenna, § 9.03(a)(1). *See also* MALONEY, AUSNESS, AND MORRIS, at 4, 88.

Cross reference: §§ 3R-1-01 to 3R-1-03 (waters subject to allocation); § 3R-2-01 (protected minimum flows or levels not to be allocated or withdrawn).

Comparable statutes: ALA. CODE § 9-10B-3(19); CONN. GEN. STAT. ANN. § 22a-367(8); FLA. STAT. ANN. § 373.019(8); GA. CODE ANN. § 12-5-22(13); HAW. REV. STAT. § 174C-3; IND. CODE ANN. §§ 13-2-1-2, 13-2-6.1-1; IOWA CODE ANN. § 455B.264(1); KY. REV. STAT. ANN. § 151.120; MD. CODE ANN., NAT. RES. § 8-101(k); MASS. GEN. LAWS ANN. ch. 21G, § 2; MINN. STAT. ANN. § 105.37(7); MISS. CODE ANN. § 51-1-4; N.J. STAT. ANN. § 58:1A-3(g); N.Y. ENVTL. CONSERV. LAW § 15-0107(4); VA. CODE ANN. § 62.1-1-(a); WIS. STAT. ANN. § 144.01(19).

§ 2R-2-33 Water Source

A “water source” includes any lake, pond, river, stream, creek, run, spring, or other water flowing or lying on or under the surface, or contained within an aquifer, or found within the atmosphere, regardless of the quantity of water or its duration.

Commentary: As the Regulated Riparian Model Water Code extends the State Agency’s regulatory authority to water sources within the State, this term is here defined to reach all waters found within the State, regardless of the form, quantity, or duration of that water. Exemptions for some water sources from certain or all regulations are found elsewhere in this Code and might be provided by appropriate regulations made by the State Agency pursuant to this Code. *See* Robert Beck and Amy Kelley, *The Water Resources Defined and Described*, in WATERS AND WATER RIGHTS, §§ 1.02, 1.03; Dellapenna, §§ 6.02, 9.03(a)(1).

Cross references: § 2R-2-01 (atmospheric water management or weather modification); § 2R-2-24 (sustainable development); §§ 3R-1-01 to 3R-1-03 (waters subject to allocation); § 4R-1-06 (regulatory authority of the State Agency).

Comparable statutes: HAW. REV. STAT. § 174C-3; MASS. GEN. LAWS ANN. ch. 21G, § 2.

§ 2R-2-34 Withdrawal or to Withdraw

A “withdrawal” is the removal of surface or underground water from its natural course or location or exercising physical control over surface or underground water in its natural course or location, by any means whatsoever, regardless of whether the water is returned to its waters of origin, consumed, or discharged elsewhere. “To withdraw” is the activity of making a withdrawal.

Commentary: The “withdrawal” to which this term refers is a withdrawal of water from the course of its natural flow or percolation. Thus, a dam is as much a “withdrawal” of water as a pumping station for a municipal waterworks. This definition also makes clear that the terms “withdrawal” and “withdraw” refer to the gross withdrawals of water from a source and not to net withdrawals. *See* Robert Beck and Amy Kelley, *The Uses and Demands for Water*, in WATERS AND WATER RIGHTS § 2.01.

Cross references: § 3R-2-01 (protected minimum flows or levels not to be allocated or withdrawn); §§ 6R-1-01 to 6R-1-06 (the requirement of a permit).

Comparable statutes: CONN. GEN. STAT. ANN. § 22a-367(2), (3); GA. CODE ANN. § 12-5-31(b)(2), (6); HAW. REV. STAT. § 174C-3; IND. CODE ANN. § 13-2-6.1-1; KY. REV. STAT. ANN. § 151.100(11); MASS. GEN. LAWS ANN. ch. 21G, § 2; WIS. STAT. ANN. § 144.026(m).

PART 3 TRANSITIONAL PROVISIONS

This chapter provides the usual, and basic, provisions necessary for the transition from a prior legal regime to the regime created under this Regulated Riparian Model Water Code.

§ 2R-3-01 Prior Laws Repealed

The following statutes are repealed on the effective date of the Code:

...

Commentary: The enactment of any law implicitly repeals, in whole or in part, all inconsistent prior laws. Which prior laws are

so affected may remain unclear until there is extended litigation. This section will list the statutes to be repealed upon the enactment of this comprehensive Code. Although a listing like this will not entirely preclude later questions about implicit repeal, it should alleviate the problem.

Comparable statutes: FLA. STAT. ANN. § 373.217; MD. NAT. RESOURCES CODE ANN. § 8-801(2) (no repeal of other laws).

§ 2R-3-02 Continuation of Prior Orders, Permits, Rules, and Regulations

- (1) Upon the effective date of this Code, all prior inconsistent orders, rules, and regulations are repealed.
- (2) Prior consistent orders, rules, and regulations, even if made pursuant to any statute repealed by this Code, shall remain in effect according to their terms or until superseded by new orders, rules, or regulations made pursuant to this Code.
- (3) All prior permits shall remain in effect under this Code only until replacement permits are issued, and shall remain in effect for that period even though the prior permit was issued pursuant to a statute repealed by this Code.
- (4) A replacement permit issued under this Code may contain such permit terms and conditions as are consistent with this Code, regardless of whether those

terms or conditions are consistent with the terms or conditions of the prior permit.

Commentary: The Regulated Riparian Model Water Code seeks to provide continuity in the transition to the new body of law by preserving all prior juridical acts taken under the laws repealed by this Code until such time as the State Agency reviews the juridical act in question and takes appropriate steps to replace it by acting under the Agency's authority as conferred by this Code. The preservation of the validity of prior juridical acts does not extend to orders, rules, or regulations that are inconsistent with this Code.

Subsections (3) and (4) provide that prior permits remain in effect until a replacement permit is issued. These subsections also provide that the existence of an unexpired term for a prior permit does not preclude the issuance of a new permit including conditions as provided in this Code, even if the new conditions are inconsistent with the terms or conditions of the prior permit. These two subsections are to be omitted in a State that has not had water use permits prior to enactment of this Code.

Cross references: § 4R-1-06 (regulatory authority of the State Agency); §4R-4-06 (regulatory authority of Special Water Management Areas); § 6R-1-01 (withdrawals unlawful without a permit).

Comparable statutes: FLA. STAT. ANN. § 373.224, 373.249; MISS. CODE ANN. §51-3-5(2) to (5); N.J. STAT. ANN. §§ 58:1A-6(a)(1), 58:1A-17.