NEW MEXICO WATER LAW: DETERMINING PUBLIC WELFARE VALUES IN WATER RIGHTS ALLOCATION

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INTRODUCTION

New Mexico recently enacted legislation prohibiting the transfer of a water right from one use or place to another where the effect of the transfer would be "detrimental to the public welfare or contrary to the conservation of water."[1] New Mexico's statute, like similar statutes in other western states, simply adds public welfare and conservation impacts to other potential impacts that must be considered by the hearing officer or judge in ruling on a transfer application.[2] This paper examines the concept "public welfare" and the question of who should define it with respect to water use. Specifically, the paper asks whether a fair determination of the public welfare can be made in the administrative/judicial arena.

As background, the authors first summarize New Mexico water law, highlighting the transfer process. Next, they describe the procedure for decisions allocating New Mexico's water resources and present an array of values that might be included in defining public welfare in water allocation. Finally, the authors conclude that, in water transfers, public welfare interests can be determined best at the local level through a regional water paling process.

This process, which is already underway in New Mexico,[3] gives citizens from all segments of a regionally-defined community the opportunity to articulate their own perceptions and values as to the appropriate ways of allocating available water supplies. The authors propose that plans produced through this process be given strong consideration by judicial or administrative decision makers allocating water resources. Such an approach would expedite transfer proceedings by increasing public confidence in the fairness of the procedure and by reducing uncertainty as to the public welfare standards that would apply.

Authors' note: The following summary is not meant to stand as a complete review of New Mexico water law, but, rather, as a description of the scope and general character of that law as it pertains to water rights transfers. The purpose of the summary is to provide a legal framework for the discussion of public welfare issues in the paper's core sections.

WATER RIGHTS IN NEW MEXICO

New Mexico applies the prior appropriation doctrine to both groundwater and surface water. In addition to appropriative water rights, there are federal reserved water rights, held in national forests and other federal enclaves such as Indian reservations.[4] Because these federally created water rights have been held nontransferable, they will not be considered in the discussion below.

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[1] N.M. STAT. ANN. § 72-12-7 (replaced 1985).

[2] For a discussion of other comparable statutes, *see* F. TRELEASE & G. GOULD, CASES AND MATERIALS *ON* WATER LAW 194-214 (4th ed. 1986).

[3] N.M. STAT. ANN. § 72-1-9 (replaced 1985).

[4] United Statl's' Rio Grande Dam and Irrigation Co., 174 U.S. 690 (1899); Winters v. United States, 207 11.S. 'l'-1 (1908); United States v. New Mexico, 438 U.S. 696 (1978). For a good discussion of federal rl'S""" water nghts see C. MEYERS & A. TAR LOCK, WATER RESOURCE MAN AGEMENT 771-805 (JI'\' " I 1987).

Basic Concepts

Public Ownership

The New Mexico legislature has declared that "all natural water flowing in streams and watercourses, whether such be perennial or torrential, within the limits of the state of New Mexico, belong to the public."[5] The state governs these resources as trustee for its citizens.[6] An individual may acquire a real property right to divert water, consistent with procedures under state law, up to the amount that can be put to a beneficial use.[7] Because water rights are property rights in New Mexico, they are transferable by deed from one person to another.[8] They can be forfeited if not put to beneficial use.[9]

Protection of instream flow in designated stretches of a watercourse is now common in most prior appropriation states, but has not been permitted in New Mexico. New Mexico has not recognized instream flows as beneficial uses of water.[10] Arguments based on ecological, recreational, and other grounds have been advanced in repeated efforts to secure legislative approval of instream rights, but no such efforts have been successful. These efforts have been defeated for several reasons, among them general concern that acceptance of this new use might severely limit transfer options. For example, instream flow opponents sometimes object, on principle, to the fact that the transfer of a surface right from diversionary to instream use would preclude the transfer, to a location upstream of the protected stretch, of diversionary rights currently held downstream of the stretch.[11] The constitution of New Mexico does not expressly foreclose instream flow rights.[12] It is conceivable, therefore, that a right to transfer water to instream use could be upheld under the constitution, where the transfer would provide economic benefit for a private party or recreational benefit for the state.[13]

Priority

New Mexico water law is based on "prior appropriation," a doctrine variously expressed in the several western states that have adopted it. In New Mexico the essence of prior appropriation is contained in two principles:

a. the first user (appropriator) in time has the right to take and use water; and

b. that right continues as against subsequent users as long as the appropriator puts the water to beneficial use.[14] ,

Determining water rights by priority in time is a strict departure from the riparian approach followed in the eastern states. [15]

To establish a right to appropriate surface water anywhere in the state one must obtain a permit from the state engineer.[16] The same procedure is followed in establishing a right to appropriate groundwater, except where the groundwater is outside a declared basin. Declared basins are "water(s] of underground

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[5] N,M. STAT. § 72-1-1 (replaced 1985).

[6] *Id.*

[7] . DuMars. *N,ewMex,ico Water Law: An Overview and Discussion of Current Issues,* 22 NAT. RESOURCES J. 1045. 104- (1982).

[8] *Id.*

[9] .M. STAT. Ar-" § 72-]2-8 (replaced 1985).

[10] . State *ex rei.* Reynolds v. Miranda, 83 N.M. 443, 493 P.2d 409 (1972) (there must be a man. made diversion coupled with the intent to put the water to beneficial use).

[11] T. ANDERSON, WATER RIGHTS: SCARCE RESOURCE ALLOCATION, BUREAUCRACY, AND THE ENVIRONMENT 249-82 (1983).

[12] N.M. CONST. art. XVI, § 3.

[13] *See* State Dep't of Parks v. Idaho Dep't of Water Admn., 96 Idaho 440, 530 P.2d 924 (1974).

[14] DuMars, *supra* note 7, at 1045.

[15] *Id.* at 1046. Under the riparian doctrine, owners of land bordering a river or other body of water enjoy instream rights, or rights 10 a continuous flow of water through their property, and privileges in use of the water not accorded owners of nearby non-riparian land, however longstanding the latter's residence on that land. A good discussion of the riparian water law doctrine can be found in J. SAX & A. ABRAMS, LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS 154-227 (1986) and in MATHER, WATER RESOURCES: DISTRIBUTION, USE, AND MANAGEMENT 277-83 (I984).

[16] DuMars, *supra* note 7, at 1047

streams, channels, artesian basins, reservoirs or lakes, having reasonably ascertainable boundaries." [17] Outside a declared basin one can establish a right to appropriate groundwater simply by diverting water from the ground to beneficial use.[18]

Surface water rights that were established in an area prior to the state engineer assertion of jurisdiction are also valid. New Mexico surface water came under jurisdiction of the state engineer in 1907. Thus, anyone who diverted surface water and put it to beneficial use before 1907 holds a valid water right regardless of whether the state engineer has since issued a corresponding permit.19 Similarly, anyone who has pumped groundwater in a basin prior to state engineer jurisdiction has the right to continue his pumping.2O

Beneficial Use

Under the New Mexico Constitution, "beneficial shall be the basis, the measure, and the limit of the right to use water."21 The legislature has not statutorily defined what constitutes a "beneficial use" or assigned priorities as between particular uses. To date, however, as indicated above, the courts have recognized as beneficial uses only uses involving diversion of water from its source.22

Definition of Water Rights

A water right is defined not only by its priority date but by type of use, place of use, quantity, and point of diversion. A right's point of diversion, type, quantity, and place of use define the right holder's choices in exercising the right. 23

Use

Rights are designated as being for agricultural, municipal, industrial, or some other category of use. Some uses are exempt from traditional forfeiture rules.24 Holders of municipal water rights, for example, are allowed forty years from the date of application to put water to beneficial use.25 All other rights are limited to a maximum of four years of non-use.26

Quantity

The units of water utilized are described in definite ways. The right may be expressed in terms of land irrigated, or "acre feet per year," or as a rate of flow such as "cubic feet per second. "27 Water permits usually specify a total diversionary amount rather that the amount to be consumed by use. Because the total diversionary amount includes return flow, however, the relevant amount when the water is to be transferred to a new place or use is the consumptive use.28

19. N.M. CONST. art. XVI, § 1.
20. N.M. STAT. ANN. § 72-12-4 (replaced 1985), DuMars, *supra* note 7, at 1047. For a good discussion of this issue see State *ex rei.* Bliss v. Dority, 55 N.M. 12, 225 P.2d 1007 (1950), *appeal dismissed,* 341 U.S. 924 (1951).
21. N.M. CONST. art. XIV, § 3.
22. *Miranda,* 83 N.M. 443, 493 P.2d 409. For a good discussion of the instream flow issue see *State Dep't of Parks,* 96 Idaho, at 530, 530 P.2d at 924.
23. For example, the water allocation statute for agricultural use is N.M. STAT. ANN. § 72-5-18 (replaced 1985).
24. *See* State *ex rei.* Reynolds v. Rio Rancho Estates, Inc., 95 N.M. 560.624 P.2d 502 (1981). 25. N.M. STAT. ANN. § 72-1-9 (replaced 1985).
26. *Id.* at § 72-12-8.
27. *Id.* at § 72-5-19 ("The standard of measurement of the flow of water shall be the cubic foot per second of time; the standard of measurement of the volume of water shall be the acre-foot, being the amount of water upon an acre covered one foot deep, equivalent to forty-three thousand five hundred and sixty cubic feet.").
28. *See* City of Albuquerque v. Reynolds, 71 N.M. 428, 379 P.2d 73 (1962). For a discussion of

[17] N.M. STAT. ANN. § 72-12-1 (replaced 1985). When the state engineer finds that an underground reservoir fits the statutory definition, he simultaneously declares the basin as such and brings it within his jurisdiction.
[18] N.M. STAT. ANN. § 72-12-2 (replaced 1985).

The maximum quantity of water allocated to any given right is determined by the reasonable demands of the user and the desire "to prevent waste."29 For agricultural rights, demand may be presumed to be the amount necessary to irrigate crops in the area as calculated by the BlaneyCriddle formula or some similar method adjusted for altitude, temperature, precipitation, and other relevant variables.3O For municipal or industrial rights, the amount allowed per capita is determined by the reasonable water demands of these uses.31

Although the entire quantity of water associated with a right must be put to use within each calendar year, the time of year when a right must be used is not specified unless there is reason to do so. Surface rights are sometimes permitted on a seasonal basis when seasonal allocation makes more water. available to others on the stream.32

Point of Diversion

The diversion point is the place where the appropriator installs a device for removing water from the stream or ground. The point of diversion and the source of water are extremely important in defining the scope of the right. Hydrologic differences in underground aquifers illustrate this point. Rights to groundwater differ, depending on whether the water is in a stream related aquifer, one recharged by surface streams, or a non-stream-related aquifer, one that is for practical purposes closed or nonrenewable.33 New Mexico law conditions the extraction of water from a stream-related aquifer on the appropriator's willingness to retire surface rights on the stream sufficient to protect downstream users.34 This requirement, known as the conjunctive management rule, means that groundwater in storage can be taken only if a balance can be maintained between surface flow and groundwater pumping. Rights in non-stream-related aquifers, on the other hand, are absolute, but defined in time by the amount of water that can be pumped from the aquifer and the rate at which the water is withdrawn.35

Rights to surface water are also subject to restriction. Surface rights are divided into direct flow rights and storage rights. The point of diversion of a storage right is in a reservoir. The point of diversion of a diversionary flow

the problem of consumptive use calculation in water right transfers see Dunning, *The "Physical Solution" in Western Water Law* 57 U. COLO. L. REV. 445 (1986).

29 N.M. STAT. ANN. § 72-5-18 (replaced 1985) ("[T]he amount allowed shall be based upon beneficial use and in accordance with good agricultural practices and the amount allowed shall not exceed such amount. The state engineer shall permit the amount allowed to be diverted at a rate consistent with good agricultural practices and which will result in the most effective use of available water in order to prevent waste.").

30. State *ex rel.* Reynolds v. Mears, 86 N.M. 510, 525 P.2d *870* (1974).

31. City of Roswell v. Berry, 80 N.M. 110,452 P.2d 179 (1969).

32. *[d.* at n.30.

33. A non-renewable aquifer is one that is not connected to a surface stream and that has been formed over thousands of years by rainfall gradually filling the alluvium with water. Once the water is taken out, for all practical purposes the aquifer will not be replenished.

34. *City of Albuquerque,* 71 N.M. at 439, 379 P.2d at 80. Conjunctive management issues are discussed in C. MEYERS & A. T ARLOCK, *supra* note 4, at 608-23.

35. Mathers v. Texaco, Inc., 77 N.M. 239, 243, 421 P.2d 771, 775 (1966). *See also* Bagley, *Water Rights Law and Public Policies Relating to Groundwater "Mining" in the Southwestern States,* 4 J. LAW & ECON. 144 (1961).

right is at the irrigated land. Generally, direct flow rights are not convertible into storage rights unless the storage serves an accepted beneficial use.36

Place of Use

The place *of* use is the place, and only the place, where the water has been used historically, or *for* a permitted right, the place designated on the permit37

Administration of Water Rights

Both the state engineer and the state judiciary have administrative roles with respect to water rights. The state engineer has at least three main administrative functions: maintaining records of all permitted

water uses and uses declared antecedent to state engineer jurisdiction; granting permits *for* new uses; and supervising transfers of existing water rights with respect to point of diversion, place of use, and type of use. A water right can be sold without the state engineer's permission so long - as the right's use, diversion point, and place of use remain unchanged. The state engineer does not directly supervise the use *of* water, except where metering is required, but he does bring legal actions to prevent waste,38 and, if water rights have been forfeited, he may bring an action to enjoin further use of the right. 39 Also, it is the state engineer's responsibility to promote the adjudication of rights, where necessary.40

In administering water rights, the state engineer is constrained by hydrology as well as by law. For example, although he does not give permits for a term of years, hydrologic factors sometimes require decisions having the same result. Extraction of water from closed aquifers is essentially a mining of nonrenewable resources. Since the resource is finite, a state engineer decision to permit diversions from these aquifers at a rate that exceeds recharge is a determination that all rights in the area will someday be terminated for lack of water supply. Accordingly, as indicated above, permits for water from these aquifers are permits for the number of years that make up the basin's usefullife.41

Judicial administration of water rights occurs only with respect to quantifying them through a general stream adjudication. These actions involve all persons with water rights on a particular stream. The result of such adjudications is a judicial decree that establishes a point of diversion, priority date, place of use, type of use, and quantity for every water right owner on the stream.42

36. For a good discussion of direct flow versus storage rights, see Denver v. N. Colo. Water Conservancy Dist., 130 Colo. 375, 276 P.2d 992 (1954). State engineer jurisdiction over stored imported waters is discussed in Jicarilla Apache Tribe v. United States, *601* F.2d 1116 (10th *Cir.* 1978), cert. denied, 444 U.S. 995 (1979).

37. Mears, at 510, P.2d at 870.

38. N.M. STAT. ANN. § 72-8-4 (replaced 1985) (waste of water a misdemeanor).

39. N.M. STAT. ANN. § 72-5-39 (replaced 1985) (State Engineer can get injunction against unauthorized use including forfeited rights).

40. The New Mexico statutes setting out the procedures *for* the adjudication are located at N.M. STAT. ANN. §§ 72-4-1 to -20 (replaced 1985).

41. *Mathers,* at 239, 421 P.2d at 771.

Transfer of Water Rights

General Considerations

The legal right to transfer a water right is generally the same whether the water is ground or surface, tributary or non-tributary. One exception to this rule is the conjunctive management obligation to maintain an equilibrium between ground and surface water in stream-related aquifers.43 Water can be transferred from basin to basin, subject to interstate compacts and federal law.44 Under these systems, the transferor must be certain that within-basin consumptive use after the transfer would not be greater than before the transfer. Simply put, an out-of-basin transfer cannot make the basin worse off than it was before.45

A water right priority date remains the same even though it is transferred. Imported water, on the other hand, does not carry a priority date, but is subject to state rules of forfeiture and beneficial use. New Mexico's water rights leasing statute allows temporary transfers,46 but those transfers and transfers on a permanent basis always go through the Office of the State Engineer.47 Where a transfer is within irrigation or conservancy districts, and is on lands served by the district works, the state engineer does not get involved48 so long as downstream users are not affected.

Transfer Procedures

Persons seeking to transfer a water right must file a formal application with the Office of the State Engineer. The application indicates the point of diversion, the place of use, the quantity of the right, and, where they exist, the file number and license number of the right. After filing an application the applicant publishes a notice of intent to change the right's use or place of use in a newspaper of general circulation where the right is located.49

Anyone objecting to a proposed transfer can file a formal protest with the state engineer. Protests must be based on a claim that the transfer will impair existing rights, will be contrary to the conservation of water, or will be detrimental to the public welfare. Where no protest is filed and the state engineer finds the transfer compatible with state law, the transfer application will be approved. Where there is a protest, the state engineer holds a formal, due process hearing on the issues set out in the protest and decides the case. 50 If either party is dissatisfied with the state engineer's decision, he may appeal *de novo* to the district court. Although such appeals are *de novo,* 51 case law suggests that courts should defer to the state engineer's expertise. 52

42. N.M. STAT. ANN. §§ 72-4-19, -5-22 (replaced 1985).
43. *City of Albuquerque,* 71 N.M. 428, 379 P.2d 73 (1963).
44. N.M. STAT. ANN. § 72-5-23 (replaced 1985).
45. *Id.*
46. *Id.* at § 72-6-3 (replaced 1985).
47. *Id.*
48. *See* Ellis & DuMars, *Two-Tiered Market in Western Water,* 57 NEB. L. REV. 333 (1978). 49. N.M. STAT. ANN. § 72-5-4 (replaced 1985).
O, *Id.* at § 72-12-3 (replaced 1985).

In transfer hearings the applicant bears the burden of proving non-impairment, conservation of water, and consistency with the public welfare. 53 Technically, the applicant also must prove the use and amount of the transferred right. Practically, however, where the right has been adjudicated, the protestant bears the burden of disproving the right's use and amount. This is the case because adjudication of rights in a transfer proceeding is not allowed and an existing adjudication decree is accepted as *prima facie* evidence of the size and validity of the right. 54 Generally, in water right cases the burden of proof is by preponderance of the evidence. If the action filed is a forfeiture or abandonment claim, however, the standard of clear and convincing evidence applies. 55

UNCERTAINTY AS TO THE MEANING OF PUBLIC WELFARE

The most critical issue affecting water rights transfers is determining how public welfare will be defined. The balance of this paper explores nontraditional transfer-related issues touching on public welfare and the proper forum for evaluating the public welfare concept.

A Case in Point

The requirement that transfers be consistent with the public welfare became state law in 1985. Because few transfer applications have been challenged on this ground, the full ramifications of the requirement are not known. The likelihood the ramifications will be prolix is perhaps best illustrated by the case of *Sleeper v. Ensenada Land and Water Ass'n.56* This case directly pitted the economic values associated with a new ski development against the cultural values of a northern New Mexico community.
Events leading up to the *Sleeper* suit date to the late 1970's, when Tierra Grande Corporation began developing a subdivision in conjunction with a large ski resort development57 near Ensenada, New Mexico, a small farming community in the north central part of the state. While building roads for the new subdivision, Tierra Grande dug a gravel pit then, later, transformed the pit into a recreational lake by damming the Nutrias Creek.58 The Nutrias, a tributary of the Rio Brazos, empties into the Ensenada irrigation ditch before it joins the Rio Brazos.59 Fed mainly from snowmelt, the Nutrias runs heavily during the spring and is dry by late Mayor early June.60 The Ensenada Land and Water Association uses the creek's waters, drawn off the Ensenada ditch, to fill irrigation reservoirs and "fertilize" the soil with its rich silt.61 Association members use the Rio Brazos water when the Nutrias runs dry.

51. N.M. CONST. art. XVI, § 5; *see also* N.M. STAT. ANN. §§ 72-7-1 to -7-3 (replaced 1985). 52. Stokes v. Morgan, 101 N.M. 195, 680 P.2d 335, 342 (1978).
53. N.M. STAT. ANN. § 72-12-7(a) (replaced 1985).
54. W.S. Ranch v. Kaiser Steel Corp., 79 N.M. 65, 439 P.2d 714 (1968).
55. State *ex rei.* Reynolds v. South Springs Co., 80 N.M. 144, 149,452 P.2d 478, 483 (1969). 56. No. RA 84-53(C), slip. op. (N.M. Dist. Ct. Apr. 16, 1985) [hereinafter *Sleeper J}, rev'd.,* 107 N.M. 494, 760 P.2d 787 (Ct. App. 1988) [hereinafter *Sleeper II}, cert. quashed,* 107 N.M. 413, 759 P.2d 200 (1988).

57. *Sleeper I,* slip op. at 2. This case is complex. This description of the facts is taken from an excellent student comment by Ms. Shannon A. Parden. The comment is to be published in the NATURAL RESOURCES JOURNAL under the title *The Milagro Beanfield Revisited in* Ensenada Land and Water Association v. Sleeper: *Public Welfare Defies Transfer of Water Rights* [hereinafter Comment}.
58. Comment, *supra* note 57.

Tierra Grande's actions in damming the creek violated laws regarding the building of dams and the diversion of water.62 When the state engineer discovered the lake, he ordered Tierra Grande to breach the dam.63 After complying with the order, Tierra Grande contracted with two local property owners to purchase their lands and appurtenant water rights.64 The parties conditioned the purchase upon the state engineer's approval of the property owners' application for change of use, place of use, and point of diversion of their surface water rights.65

The Applicants requested a one-time diversion of 61.32 acre feet of water from Nutrias Creek to create the lake, and, thereafter, annual diversions of 13.32 acre feet to compensate for evaporative loss.66 These diversions necessarily would result in the retirement of agricultural land,67 because when water rights used to irrigate land are transferred to a nonagricultural use, the previously irrigated land must be retired from agriculture. To offset loss of water from the creek, the Applicants proposed to temporarily retire 64.55 acres of irrigated land during the year the lake was filled, then, in the next year, permanently retire 14.02 acres of irrigated land.68

In 1982, the Applicants applied for transfer of the surface water rights. The Ensenada Association protested, alleging that the transfer would impair existing rights and would be contrary to the public interest. Relying upon hydrologic studies and a finding that the transfer would not impair existing rights, the hearing officer recommended that the state engineer approve the transfer application. When the state engineer acted on this recommendation, the Ensenada Association appealed his decision, and the state district court reversed in a *de novo* hearing.

At the district court hearing, Ensenada Association argued that the transfer would be contrary to the public interest because it would result in the permanent loss of agricultural land and, inasmuch as ditch maintenance expenses after the transfer would be born by fewer people than before, would increase the financial obligations of individual Association members.

Applicants contended that economic development resulting from the proposed resort project would be in the public interest because it would stimulate the local economy. The resort would generate construction jobs, such

59. */d.*
60. *Id.*
61. *Id.*
62. *Id.*
63. *Id.*
64. *Id.*
65. */d.* a1 2-3.
66. *Sleeper II,* 107 N.M. a1 496, 760 P.2d at 789. 67. *Sleeper I,* slip op. at 3.
68. *Sleeper II,* 107 N.M. at 496, 760 P.2d at 789.

as the building *of* second homes, in the Ensenada area. Eventually, the Applicants claimed, the tourist industry associated with the project would provide *more* local jobs, shifting the populace from an agricultural subsistence economy to an economy based on tourism.69

An expert for Ensenada Association countered that the development *of* tourism/recreational facilities would not improve the financial outlook *of* people currently residing in the area. The resort project would provide only menial jobs, such as those for waiters and maids. Overall, he said, most local residents would never realize any benefits from the resort economy.70

Presiding at the hearing, Judge Art Encinias addressed the conflict between economic and cultural values inherent in the dispute. Although Encinias used the term "public interest" rather than "public welfare," it is clear he considered the terms synonymous. "Northern New Mexicans possess a fierce pride over their history, traditions, and culture," he said, noting that the deeply rooted traditional ties of northern New Mexicans to the land and water are central to maintaining that culture.71 He observed, further, that the living culture *of* the northern New Mexico region is recognized at the state and federal levels as possessing significant value that cannot be *ex*pressed in monetary terms. "[H]ere," he said, "it is simply assumed by the Applicants that greater economic benefits are *more* desirable than the preservation *of* a cultural identity."72 In opposition to this view, Encinias mentioned that. developments such as the resort community in question contribute step-by-step to the destruction *of* the local culture.73 Reversing the state engineer, Encinias

stated that *"to* transfer water rights, devoted for *more* than a century to agricultural purposes, in order to construct a playground *for* those who can pay is a poor trade, indeed. "74

On appeal, the New Mexico Court *of* Appeals held that the statute in effect at the time *of* the application precluded the state engineer from considering broad public interest factors in the transfer of surface water. Because, in a strictly hydrological sense, the transfer did not harm existing rights, the court reversed.75 While the people of the Ensenada ditch have had their day in court, the victories *for* them at the district court level and *for* their opposition at the appellate level have not instructed others as to the meaning *of* "public welfare."

Water Scarcity and *Public Welfare*

The conditions of water scarcity that gave rise to the prior appropriation system have been constant over time, but the demand *for* water has been expanding. In the last 70 years, New Mexico's population has *more* than tripled76 and, where population once was dispersed widely in the state, it is now concentrated in urban areas.77 Over the same period, the state's surface waters have been almost fully appropriated, and groundwater previously inaccessible due to inadequate drilling technology has become the major source of supply in several counties.78 Furthermore, developments in hydrology now permit more precise measurement of underground reserves, better understanding of the relationship between underground and surface streams, and the possibility of reliably determining the state's water resource limits.

69. *Sleeper I,* slip op. at 5-6.
70. *Id.*
71. *Id.*
72. [d.
73. [d.
74. [d.
75. *Sleeper II,* 107 N.M. at 496, 500, 760 P.2d at 791-92, 793.
76. J. WILLIAMS, NEW MEXICO IN MAPS 150-57 (2nd ed. 1986).
77. *Id.*
78. Letter from Steve Reynolds, State Engineer, to Charles DuMars, Chairman, Governor's Water Law Study Committee (March 12, 1984) (on file in office of NATURAL RESOURCES JOURNAL, University of New Mexico School of Law).
79. J. SAX & R. ABRAMS, *supra* note 15, at 796.

These demographic and technological changes have been accompanied by unprecedented, vastly increased demands for water in metropolitan, industrial, and recreational uses. Meanwhile, the concentration of senior water rights in agricultural uses is criticized by many as economically inefficient.79 The closer the state approaches full appropriation, the greater is the pressure to move water to higher economically valued uses and to operate the allocation system on the market model.

Population increases have also been accompanied by increased production and disposal of municipal and industrial wastes, thus, in turn, by problems of water pollution. Point sources of pollution can be tracked to some extent, but the technology for correcting the effects of pollution, where it exists, is prohibitively expensive. Lastly, over all these other changes hangs the specter of global warming and its unknown consequences for the region. In short, the West is in the midst of a population explosion that is clarifying the finite nature of its water resources. Submitting proposed water rights transfers to the test that they not harm public welfare is an expression of growing uneasiness with growth based on a finite water future. What it says, in effect, is that some lawmakers, and, presumably, their constituents, are beginning to question the wisdom of allowing the marketplace exclusive control in determining who shall hold these rights and how they shall be used.

Ordinarily, mistrust of market effects does not extend to commerce in coal, copper, other minerals, and other energy fuels. Where these resources are concerned, society has developed ways of mitigating the undesirable social and environmental consequences of allowing free trade to run its course. Depletion costs have been accepted in exchange for cash. When a mine or demand for its ore plays out, for example, the mining company is obliged to restore damaged lands and severance tax revenues are used to establish new tax bases for affected communities.

Where water is the resource and short supply a factor, however, results of a strict market economy are sometimes regarded as intolerable. Like air, water is perceived as distinguishable from other natural

resources because it is essential to all forms of life. Because water has this characteristic, society seems unprepared to deal with the reality that giving the market exclusive control in western water trade might displace from competition those who could not bear the going rates.8O In extremely arid areas, people with fewer financial resources would be without water and forced to move. And, in the long term, given the strength of demand and the relative paucity of supply, water reserves would be exhausted. This result would mean destruction of the region's economic base and its habitability as well. The area would lose its capacity to support life, and this concept, on "Spaceship Earth," does not appear to be palatable for our current body politic.81

Conflicting Values Included in the Concept "Public Welfare"

Even though members of society are concerned about the "public welfare," there is never unanimity as to its meaning. Visualizing various values in water as located upon a continuum can help, perhaps, to clarify this subject. At one end of the continuum would lie values that are widely and strongly held. Water resources protected by law might be placed here. Through the Endangered Species Act,82 for example, Congress has preserved the water habitats of certain birds, fish, and other kinds of wildlife. Similarly, as noted above, the federal government has asserted water rights in national parks, Indian reservations, and other areas it has set aside for specific purposes.

At the other end of the continuum would lie values that are so abstract or impractical they are unlikely ever to command a large constituency. Here, then, might be placed the sentiments of people who cherish the image of free running streams and, regardless of the impact, insist that no stream be impeded in its flow to the sea. Between these extremes there are a number of other publicly held values in water.83 Examples of these are set out below.

Environmental, Recreational, and Scenic Values

Almost all western states have recognized public benefit in preserving water flow in some stretches of perennial streams and rivers.84 Protection of a certain level of stream flow is justified on several grounds. It maintains bacterial activity that cleanses the stream, dilutes municipal and industrial discharge into the stream, carries potentially clogging sediment downstream, ensures survival of fish and other aquatic life, and sustains vegetation in the bed and *on* the banks of the stream. This vegetation, in turn, serves as habitat for wildlife and waterfowl and acts as a filter by trapping polluting substances carried in return flow irrigation water and other runoff.

80. Numerous authors have written on this topic. *See, e.g.,* Grant, *Public Interest Review of Water Allocation and Transfer in the West: Recognition of Public Values,* 19 ARIZ. ST. L.J. 681 (1987); Getches, *Water Use Efficiency: The Value of Water in the West,* 8 PUB. LAND L. REV. I (1987); Comment, *An Analysis of the Potential Conflict Between the Prior Appropriation and Public Trust Doctrines in Montana Water Law,* 8 PUB. LAND L. REV. 81 (1987)(authored by R. Mark Josephson); Littleworth, *The Public Trust vs. The Public Interest,* 19 PAC. L.J. 1201 (1988); Trager, *Emerging Forumsfor Groundwater Dispute Resolution in California: A Glimpse at the Second Generation of Groundwater Issues and How Agencies Work Towards Problem Resolution,* 21 PAC. L.J. 31 (1988). Ingram, *et al. Measuring the Public Welfare Value of Water* (monograph), The Water and Public Welfare Project, Udall Center for Studies in Public Policy (University of Arizona) and the Natural Resources Center (University of New Mexico), 1988; A. KNESSE & F. BROWN, THE Southwest UNDER STRESS: NATIONAL RESOURCE DEVELOPMENT ISSUES IN A REGIONAL SETTING (WASHINGTON, D.C.: RESOURCES FOR THE FUTURE, INC. 1981); United Nations Department of Technical Co-operation for Development, *Assessment of Multiple Objective Water Resources Projects: Approaches for Developing Countries* (New York: United Nations 1988).

81. For a directly contrary view see T. ANDERSON, *supra* note II. 82. 16 U.S.C. § 1531 (1976).

83. *See, e.g.,* Shokal v. Dunn, 109 Idaho 330, 707 P.2d 441 (1985), Nat'l Audubon Soc'y v. Superior Court, 33 Cal. 3d 419, 189 Cal. Rptr. 346, 658 P.2d 709 (1983) (often referred to as the "Mono Lake" case), *cert. denied sub nom,* Los Angles Dept. of Water & Power v. Nat'l Audubon Soc'y, 464 U.S. 977 (1983); F. BROWN & H. INGRAM, WATER AND POVERTY IN THE SOUTHWEST: CONFLICT, OPPORTUNITY AND CHALLENGE (1987).

Other values in retaining water in streams and rivers are shown in the popularity of sport fishing, swimming, boating, rafting, and other purely recreational activities. In addition, there is clearly some value held in the enjoyment of the scenic quality of rivers, and of watersheds generally.85

Economic Values

In addition to directly sustaining physical life, water has other properties that, directly and indirectly, sustain economic life. It is among the most fundamental of the "means of production." As a source of

buoyancy and momentum, channeled water can carry heavy objects from place to place, and can carry away and dilute the effluent of factories and businesses. Quantities of captured water, converted to steam or hydroelectric power, can serve multiple energy needs and at great distances *from* rivers and reservoirs.

In the end, the availability of water determines the feasibility of nearly all commercial enterprises. Some of these-in the West most notably large-scale irrigated agriculture, mining, and oil exploration-require large amounts of water.86 Other businesses that do not themselves use great quantities of water depend on businesses that do. Manufacturers of farm implements, wholesalers and retailers of seed and fertilizer, trucking companies, packagers, advertisers, grocers and their customers all rely on the products of farming. Similar dependency networks radiate from the logging camps, mines, quarries, and oilfields of resource producing western states. Thus, water underpins not only the tax base of towns built around highly water consumptive industries, but, ultimately, the tax bases of remote, less water consumptive, cities. 87

Historic and Cultural Values

For many people, water has significant cultural value apart from its importance as an economic commodity. In New Mexico, this value is evident in the traditions of historic communities. Among the many New Mexicans descended from aboriginal Indians and 16th century Spanish settlers there are some who make their living by subsistence farming and livestock grazing in the tribal Pueblos or rural villages built by their ancestors.88 In these enclaves of nearly extinct cultures, community values in water are manifest in physical structures-the hand dug ditches through which water can flow to all parts of the villages-and in social structures-the respected practices of using and maintaining the ditches. Field crops are irrigated and stock ponds filled by water diverted from nearby sources and carried through this network of ditches, *or* acequias.

84. Tarlock, *Appropriation for Instream Flow Maintenance:* A *Progress Report on "New" Public Western Water Rights,* 1978 UTAH L. REV. 211 (1978).
85. W, STEGNER, THE SOUND OF MOUNTAIN WATER 41-43 (1980),
86. *See* discussion of irrigation and industrial water demand in Ellis & DuMars, *supra* note 48; T. ANDERSON, *supra* note II, at 223-48; and Zamora, Kneese, & Erickson, *Pricing Urban Water: Theory and Practice in Three Southwestern Cities,* I Sw L. REV. 89 (1981).
87. F.L. BROWN & H. INGRAM, *supra* note 83.

Adherents to these traditional ways of life revere water as a sacred substance, the lifeblood of society. Reverence for the life-giving power of water extends to everything associated with water. The seasonal changes and corresponding changes in rainfall and river flow are observed by time-honored rituals, dances, and feasts. These events, along with the handicrafts, music, and other creative works the events inspire, are the basis of a substantial portion of New Mexico's tourist trade, which is one of the state's primary industries.

Conservation Values

Where water is scarce, the tendency to prefer present over future uses is strong, and the duty to ensure usable water resources to future generations, while generally acknowledged in principle, often suffers in practice. Still, partly because the disastrous effects of improvident resource exploitation are now being felt world wide, value in long-term management of water and other resources is today expressed more earnestly than in the past. 89

FACTORS CONSTRAINING DECISION MAKERS EVALUATING PUBLIC WELFARE

If water occurred in only one form, as a solid, divisible substance, it could be parced and allocated in chunks. As a resource, however, water is much less tractable. It is a changeable, mobile element in a natural system, the laws of which are imperfectly understood. Moreover, what *is* understood about hydrologic systems complicates rather than simplifies the task of allocating water with public welfare impacts in mind. We now know, for example, that certain groundwater aquifers are connected to surface streams, that certain others are not, and that the decontamination of a polluted water system, whether surface *or* underground, is extremely expensive. All of this information helps clarify the public welfare debate, but does not help resolve the debate.

88. *[d.* See alsoVpper Rio Grande Working Group, The Course of Upper RIO *Grande Waters:* A *Declaration* of *Concerns* (1985) and Upper *Rio Grande Waters: Strategies* (proceedings from a conference on traditional water use, October 5-6, 1987) Both publications are available from the Southwest Hispanic Research Institute, the Natural Resources Center, and the Native American Studies Center at the University of New Mexico, Albuquerque.

89. See Trelease, *Policies* for *Water* Law: Property *Rights. Economic Forces, and Public Regula tion,* 5 NAT. RESOURCE L.J. 1 (1965). The late Dean Frank Trelease concluded that:

> No system of water rights should result in a rigidity that will hamper future generations, nor impose upon those generations a water use pattern suitable only for a bygone age. A water use law should be flexible enough so that today's lack of omniscience or prescience will not prevent the correction of mistakes. It must grow with the times. The water rights it creates must be flexible enough to enable shifts from use to use. While it may be permissible to assume that the use to which water is first put is the most desirable and economic at the time, it is fallacious to presume that such a use would be best for all time. While we may wish to encourage water resource development today for its immediate benefits, getting the best use possible under present conditions, in years to come we may find that new or different uses promise greater benefits.

[d. at 30. See *also* J. WRIGHT, THE COMING WATER FAMINE (1966); and E. ENGELBERT & A. SCHEURING, WATER SCARCITY: IMPACTS ON WESTERN AGRICULTURE (1984).

90. See. e.g., *City of Albuquerque,* 71 N.M. 428, 379 P.2d 73.

91. N.M. STAT. ANN. § 72-1-9 (replaced 1985).

Issues of Water Supply

Renewable Water Resources

As noted above, some underground aquifers are hydrologically connected to surface streams.90 Water, in the form of rainfall and snowmelt, percolates down through the soil to fill these aquifers, and, moving laterally underground, eventually enters streambeds as recharge. Over time, because water pumped from such an aquifer is *lost* to the surface-stream recharge process, withdrawals from the aquifer will not only drain it, but will also lower the water level of associated streams. Thus, where underground aquifers and surface streams are effectively the same water source, administration of them must recognized that fact. The difficulty comes in deciding when to balance accounts.

The rate at which the pumping of groundwater affects associated streams varies with the composition of the geologic zones separating the well from the stream. In any case, however, the rate is slow. One can take stream-related groundwater today and postpone reckoning with the impact until far into the future. If one were to place a well directly into the river, the drawdown effect would be immediate and evident, but the impact on the river of wells fifteen miles away from the river might not be felt for a hundred years. Thus, although the impact eventually will be felt, until it is felt, water pumped from the well can be considered as withdrawal from storage rather than withdrawal from the river.

These temporal and spatial considerations are of great practical importance to municipalities, for municipalities rarely depend on surface water alone. In virtually every western city, groundwater in storage hydrologically connected to surface supplies is a supplemental, if not the major, water source. Accordingly, cities attempting to coordinate economic growth and water withdrawals have found it expedient to place wells as far from the river as possible and use the often high-quality groundwater to support domestic and industrial needs. Here, water from the city's wells is thought of as if it were drawn from a source independent of the river when, in fact, it is an interest-free loan from the river. Once created, however, the debt to the river eventually must be paid.

The statutes of New Mexico allow municipalities to acquire water rights and refrain from using them for up to 40 years.91 This law permits cities and towns to appropriate more water than they can use at present and, at the same time, build a hedge against increasing water prices in the future. *For* example, a city presently dependent on groundwater can buy agricultural rights in surface water at current market rates then lease the rights back to the individual farmers who sold them.92 As long as the rights are used under lease by the farmers, the rights' type and place of use do not change, so no formal transfer must take place.93 With the surface water rights in hand, the city can pump its wells secure in the knowledge that, when the time comes to repay the debt to the river built up by well pumping, the city can dry up the leased surface rights to offset the impact on the river.

The repayment issue becomes critical where a municipality has based its economic growth on a combination *of* surface and groundwater use greater than the actual supply. Consider a city *of* 500,000 people that needs 100,000 acre feet a year to sustain it. For a time, the city can easily withdraw that amount from storage and the river. When the river ultimately can supply only 50,000 acre feet a year, however, something will have to give. For purposes of public welfare analysis, then, decision makers must inquire into issues such as whether a city should be obliged to limit its growth on the basis of long-term supplies, or

should be obliged to keep a certain amount of groundwater in reserve in case there is no snow melt and the upstream reservoirs are low.

Non-Renewable Water Resources

Where one is deciding the fate of a closed, or non-stream-related aquifer, the possible approaches are endless. For example, on the basis *of* speculation about future needs, one could conclude that these are *of* greater social value than present needs, and disallow any use greater than natural recharge. In this case, annual appropriations from an aquifer that contained 15,000,000 acre feet *of* water but had a sustained yield of only 1,000 acre feet a year could be limited to 1,000 acre feet. At the other extreme, one could decide that water markets would accurately determine the relative value of present versus future needs for the resource. If bidders believed that the economic value of the water in present uses was higher than any foreseeable future use, they would make the correct economic choice to extract the water at rates dictated by present needs, leaving none for future generations.

A compromise between these positions would be to allocate quantities greater than natural recharge but strategically so. That is, using the best available technology, one could calculate the quantity of water in the basin as well as the supply of collateral resources needed to sustain economic development in the area. On the basis of these measurements, one would allow mining of water, but at a rate that would ensure a certain quantity of water remaining to support the area's economy.

Of course, in making these decisions one would have to institute opportunities and obligations for water conservation, and the rate of drawdown would need to be regulated to prevent one user committing hydrologic homicide on another by pumping too fast. Whatever the approach, the decision to mine and at what rate lies squarely within the concept of public welfare. 94

92. New Mexico v. Aamodt, 537 F.2d 1102, 1112 (10th Cir. 1976), *cert. denied,* 429 U.S. 1121 (1977).

93. *City of Albuquerque,* 71 N.M. 428, 379 P.2d 73.

Issues of Water Quality

In evaluating the public welfare issues above, one comes to another crucial question: to what degree are changes in water quality part of the public welfare equation? This question is more complex than it might at first appear. One could start, as some legislation does, *from* the proposition that there should never be any degradation of water quality in either renewable or non-renewable sources.95

"Efficiency" versus "Waste"

One could argue that, since every drop of water taken *from* a non-renewable source moves that source steadily toward extinction, not one drop should be wasted or polluted. The difficulty in holding this position becomes apparent in the realization that pollution of water may not be "waste" of water. Indeed, in the process of polluting a water resource, one might generate a great deal of economic activity and generate employment *for* a large number of people.

If one allows mining of a nonrenewable source, it is disingenuous to argue that the source should never be polluted if the economic activity causing the pollution is necessary to sustain employment. Suppose that two individuals proposed to extract water *from* a nonrenewable aquifer. The first agreed he would farm and by doing so dry up the aquifer. This use would generate 100 jobs over 45 years. Suppose the latter agreed he would utilize the water for industrial purposes, consume none of it, and reinject it into the ground after he was done. This use of the water would generate 4,500 jobs over 45 years. When reinjected into the aquifer, however, the water would be mildly toxic and, given current technology, unusable for other purposes. In which case is the public welfare best served? The debate over non-degradation versus measured rates of degradation rages on, and every word of the debate invokes public welfare issues.96

Surface water pollution also presents public welfare ironies. Many c1amour for more "efficiency" in

water use by farmers, and ask that less water be consumed by the farming process. From a water quality standpoint, the problem may at times be just the opposite. Some modern farms may be too efficient.97 Throughout the West, where massive irrigation projects have been built and where water is expensive, price has been a sufficient incentive to the farmers to conserve water. This often results in the farmers using drain tiles to enhance return flow from their fields after the crops have been irrigated.98 Although this process uses less water, it often leads to lower quality water returning to the river. The water is lower in quality because it leaches the naturally occurring salts, and, at times, other elements such as boron and selenium, out of the soil and into the river to be presented as a "gift" to the next downstream user. Thus, efficiency for one user can lower water quality for the next user and so on, until fisheries at the end of the watershed are severely damaged.99

94. The issue of groundwater mining is discussed in T. ANDERSON, *supra* note 11 at 223-49; and in C. MEYERS & A. TARLOCK, *supra* note 4, at 626-76.

95. *See generally* Tripp & Jaffee, *Preventing Groundwater Pollution: Towards a Coordinated Strategy to Protect Critical Recharge Zones,* 3 HARV. ENVTL. L. REV. 1 (1979). *See also* the 1986 Safe Drinking Water Act amendments, 42 U.S.C.A. §§ 300f-300j.

96. Water quality issues, of course, will arise under both federal and state law. *See* White, *The Emerging Relationship Between Environmental Regulations and Colorado Water Law,* 53 U. COLO. L. REV. 597 (1982).

97. *See generally Evaluation of Unlined Ditch and Reservoir Seepage Losses* in *WestlGllds Water District,* Document prepared *for* San Joaquin Valley Drainage Program, U.S. Bureau of Reclamation contract No. 7-CS-20-05230 (Boyle Engineering Corporation, 1988) (suggests the possibility of allocation rights to pollute an aquifer as commodities in themselves).

Terms such as "efficiency" and "waste" and "conservation" are proper to the evaluation of the "public welfare," but people rarely mean the same thing when they use them. Consider three very distinct meanings for the term "waste" of water. A professor of Agriculture might insist that, in farming, water is consumed in only three ways: by transpiring through the leaves of plants, by evaporating from open ditches, and by percolating so deep into the ground that it cannot be reused economically or becomes blended with a nonusable aquifer. An economist, however, would suggest that even if one utilized the absolute minimum amount of water to grow crops, this would be a waste of water if there were a more profitable use for the water other than agricultural. Finally, consider a person who appreciates rare birds. That person might strongly argue that water would be wasted in farming or industrial use when it could be used to save the last few members of an indigenous duck species once plentiful in the area. The answer to the question of waste thus depends on whether one measures waste with a laser plane for leveling fields, a calculator with a discount rate function, or an ornithological guide and a hope that one's children will have an opportunity to observe the variety of species that can be seen today.

Prevention versus Cleanup

Water quality concerns include another significant factor that must be woven into the decision making process. This factor is the practical irreversibility of certain decisions. Weighing the costs of water pollution cleanup against the costs of prevention results in an incredible mismatch. This is perhaps nowhere more graphically illustrated than in the case of the Exxon oil spill in Valdez, Alaska. The cost of an alcoholic treatment program, or a testing program, or a failsafe radar system is minuscule in comparison to the cost of repairing damage done by the oil slick. The same is true with respect to the introduction of petrochemicals into a groundwater aquifer. The cost of removing such substances is prohibitive by any cost/benefit measure. Cleanup occurs probably only because we are horrified at having fouled the Earth. It remains to be seen, however, whether that horror will abate when the cleanup costs becomes so high they compete with the costs of other programs-those having to do with the arts, or garbage collection, or police service, for example. Because some pollution is virtually irreversible, 100 the public welfare is plainly implicated, not only for the individual actors in a water transaction, but for all the members of society who may have to live with the adverse consequences of the transaction.

98. See *generally* D. SWAIN, TECHNICAL REPORT: FORMULATING AND EVALUATING DRAIN AGE MANAGEMENT PLANS FOR THE SAN JOAQUIN VALLEY (1988).

99. *Id.*

Assuming the preceding discussion captures in some way the ingredients of the public welfare, equally difficult questions arise: Who should decide public welfare issues? How should those decisions be made? One could try to reinvent the wheel, as many states have done, or one could realize that others have worked long and hard at this question before. Any beginning point would be located where the variables mentioned

above were set out in order, as they have been in the following chart.

THE BEST FORUM FOR DETERMINING PUBLIC WELFARE

The chart on the next page encompasses the considerations discussed here as well as many others included in the concept of public welfare. It is taken from a United Nations guide for evaluating the desirability of developing water projects. Clearly, those who are involved in deciding whether to develop a water project initially engage in a detailed public welfare analysis. Indeed, such a planning analysis is commonplace throughout the world. Why should the analysis be any different when the issue is whether an existing water right should be transferred or whether a new appropriation should be permitted?

If such an analysis is considered mandatory, other issues become relevant. When and where should the analysis take place? Who is best qualified to do it? The transfer statutes of most western states, New Mexico included, elide these issues, and, therefore, resolve them by default. In the authors' view this oversight deserves scrutiny, for it obscures the fact that transfer procedures combine two questions that are not necessarily related: I) Should this water right be transferred from Person A to Person B?, and 2) Would such a transfer be consistent with the public welfare?

The first question is properly joined with the issue of whether the transfer of the water right infringes upon or decreases the value of a third party's property right in water by reducing the quantity of the third party's water right. 101 This issue falls under the general heading of impairment. It is a question of hydrology and submits readily to technical expertise. By contrast, the public welfare question concerns the broad range of variables set out in the above chart and, perhaps, might be stated better as follows: Would allowing this transfer be inconsistent with society's goal of optimal utilization of precious and scarce water resources? 102

100. Petrochemical and pesticide pollution in certain soil types is an example of this kind of pollution where clean up is not economically feasible. *See generally* United States Environmental Protection Agency, 1986a, *Pesticides in Ground Water: Background Document,* Office of Ground Water Protection (Wh-55OG).

101. *See* Trelease, *New Water Legislation: Draftingfor Development Efficient Allocation and En vironmental Protection,* 12 LAND & WATER L. REV. 385 (1977).

102. A good contrasl of views can be found in Trelease, *The Model Water Code. The Wise Administrator and the Goddam Bureaucrat* 14 NAT. RESOURCES J. 207 (1974) and Dunning, *Reflections on the Transfer of Water Rights* 4 J. CONTEMP. L. 109 (1977).\

The "impairment" question lends itself to an administrative or adjudicative forum because the ultimate facts are rarely in dispute and the legal issues are capable of clear statement and resolution. The adversary system of expert witnesses and cross examination is well suited to this task. The public welfare question is ill-suited to such a forum for the following reasons.

First, the issues are not clear-cut and capable of technical resolution. Second, expert testimony, if appropriate at all, would be largely subjective and value-loaded, and the decision making process would likely lead to a war of experts testifying on widely varied major premises. Third, resolution without error would be difficult because the traditional legal efficiency guidelines of relevancy and materiality would be useless because virtually everything is relevant in a public welfare inquiry. Fourth, the inquiry would be so broad that the party with the most financial resources and staying power would prevail, solely because he could amass more subjective testimony. Fifth, the typical decision maker in such a forum at the initial stage of the proceeding is the state engineer, and his staff, likewise, is comprised of engineers or other technically trained persons. These persons are unlikely to be prepared by professional training or by temperament to handle sweeping non-technical issues.

Sixth, assuming the issues were brought to the appellate courts for judicial clarification, there would be little chance of consistency in outcomes because any legal holding would contain little more than a general legal rule, as broad as public welfare itself, and each case would turn on its facts. Seventh, inasmuch as clear legal rules would not be forthcoming from the courts and the decision maker would not necessarily be trained to address these policy questions, the possibility of arbitrary and inconsistent results would be extremely high. Without some predictability of result, few people would be inclined to invest money in transferring a water right.103

Identifiers for gross impact on selected environmental resources and values, along with rankings of importance of impacts, as experienced in certain dam, reservoir, irrigation, and hydroelectric projects

Environmental Resources and Value / Project Component		Physical Resources								Biological Resources				Human Use Values														Quality of Life Values						
		Surface Water Hydrology	Surface Water Quality	Ground Water Hydrology	Ground Water Quality	Soils	Geology/Seismology	Erosion/Sedimentation	Climate	Fish	Aquatic and Terrestrial Ecology	Terrestrial Wildlife	Forests	Agriculture/Irrigation (if applicable)	Aquaculture	Fisheries	Water Supply	Navigation	Recreation	Power (if applicable)	Flood Control	Dedicated Area Uses	Industry	Agro-Industry	Mineral Development	Highways/Railways	Land Use	Socio-Economic	Resettlement	Cultural/Historical	Aesthetic	Archeological	Public Health	Nutrition
Dam and Reservoir	A	3	2	2	1	–	–	3	1	((3))	((3))	((3))	2	(3)	(3)	((3))	(3)	(2)	(3)	(3)	(3)	3	–	–	(2)	((2))	3	(3)	3	1	((3))	1	((2))	(3)
	B	3	–	3	–	2	3	–	1	..	1	–	–	–	–	–	–	–	–	–	..	–	–	..	1	1	..	–	3	–	–	–	1	–
Irrigation System	A	1	3	2	–	3	–	2	–	(3)	(3)	1	–	(3)	(3)	(3)	(3)	–	(1)	–	–	–	(2)	(2)	–	1	3	(3)	–	–	–	–	(2)	(3)
	B	2	3	3	1	3	3	3	1	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–
Hydroelectric Power and Transmission	A	–	–	–	–	–	–	1	–	–	–	1	3	1	–	–	–	–	–	3	–	–	3	2	–	–	3	(3)	–	–	2	–	–	–
	B	1	–	1	1	2	2	1	–	–	1	1	3	–	–	–	–	–	–	–	–	1	1	1	1	–	–	–	–	–	–	–	–	–

Source:
V. R. Pantulu, "An analysis of environmental and social impacts of multiple objective river basin development projects," paper presented at the Interregional Seminar on the Assessment and Evaluation of Multiple Objective Water Resources Projects, Budapest, Hungary, October 1985. Adapted from the National Environmental Board, Thailand, 1979.

Notes:

(a) (A) means significant impact of project on environmental resources, whereas (B) means impact of the environment on the project.
(b) Numerical value of 3 means probable major impact, 2 means intermediate, and 1 means significant but relatively minor.
(c) Numbers in parentheses indicate effects are mostly enhancement of environment.
Numbers in double parentheses represent combination of adverse and beneficial effects.
Numbers without parentheses represent either adverse or beneficial effects.

If one agreed with this analysis and wished to remove public welfare consideration from the province of administrative or judicial decision makers and limit the transfer issues to questions of technical water right impairment, where should the power to decide public welfare issues be vested? One possibility would be to require the individual seeking a transfer to prepare the equivalent of an environmental impact statement and make it part of the record of decision to be considered by the administrative decision maker. This alternative, while attractive and obviously patterned on the National Environmental Policy Act (NEP A), [104] might be helpful but probably would not go far enough. It would not go far enough because it would provide no decision rule: it is one thing to display impacts and quite another to decide that one or another impact justifies scrubbing a project. Indeed, it may be that NEP A has spawned a host of experts at displaying impacts without otherwise improving the process by which officials decide whether the government should carry out a federal project.

A second and, we think, better approach would be to allow local communities to make fundamental choices about public welfare values in water use. Through a recent statutory change that regionalizes water development planning, 105 New Mexico, in effect, has established the forums in which such an approach could be implemented. New Mexico's water planning legislation authorizes the Interstate Stream Commission to provide funds to assist regional entities throughout the state in developing forty-year water plans. Under this legislation, the process of producing a regional water plan must include optimum involvement of citizens affected by water usage, defined procedural rules, and, following fair and adequate notice, a full public hearing on the issues. Ideally, then, the water use priorities established through this process would reflect not only the hydrologic and economic conditions of the geographic region covered by the plan but the distribution of public values in water characteristic of the region's population. Citizen input into decisions regarding the use of water resources would be subject of course to due process and to restrictions on unlawful takings of property. [106]

103. Ellis & DuMars. *supra* note 48.
104. 42 U.S.c. §§ 4331-35.

Once a regional water plan had been produced in this manner, it could serve as a guide, or, in some cases if subject to judicial review at adoption, a binding set of regulations for purposes of determining the public welfare impacts of proposed water rights transfers in the region. 107 Such a system would give clarity to transferors of water rights; would aid judicial decision makers in understanding how their communities view the public welfare values in water, and, having been developed outside the judicial arena, would be paid for by all concerned persons rather than particular litigants. 108

CONCLUSION

The preceding discussion is intended to demonstrate that with scarcity of water resources, both surface and ground, comes inevitable political and philosophical debate as to the best method for allocating these resources among constituents of a democratic society. The authors endorse the marketplace as a starting point for allocating property rights in water and, thus far, have not seen a substitute that appears superior. At the same time, it is also clear that the value of water as an economic engine for production does not completely reflect the value of water to a society.

When cultural, environmental, and intergenerational values in water are articulated by the citizens of a society, there must be a forum in which these arguments can be heard. However, when these essentially non-quantifiable values are placed into a quasi-judicial water rights transfer process through talismanic phrases such as the "public welfare," society is not necessarily served. The advocates of these values may not be served because the adjudicative process is not equipped to give the values a fair hearing, and the transferring parties are not served because they must submit to the costs and uncertainties of repetitive litigation. A superior method may be found in allowing the "public welfare" to be defined in a regional planning process open to all interested parties.

105. N.M. STAT. ANN. §§ 72-14-1 & -22 (replaced 1985).
106. *See, e.g.,* Orion Corporation v. Washington, *cert. denied,* 108 S.Ct. 1986, 100, L.Ed. 2d 227 (1988) (regulation restricting right to fill tidelands was not a taking as they were subject to public trust).

107. The regional planning option is suggested under the theory that, in the case of any proposed transfer, those residing in the region where the transfer would occur would most likely be knowledgeable about, affected by, and concerned with water development in the area. Of course, there may be circumstances when the interest of the region would be overridden by the interests of the state as a whole. A procedure should be implemented to allow review of regional water plans on this basis and, where necessary, resolution of these conflicts.

108. The importance of integrating the planning process into the decisionmaking process cannot be overstated. To fail to do so would be to create the worst of both worlds. If the interested parties were to engage in planning and have their plans brushed aside, they would be more likely to protest and further complicate the planning process. And, if there were no legal right to integrate the planning process into the decision, the decision maker may feel constrained to ignore the process out of the fear of appearing biased against the applicant. Thus, there must be some guidelines that indicate the weight to be given the plan in evaluating the propriety of a transfer. Armed with this information, the decision maker may still rule against the plan, but a reviewing court might well require clear and convincing evidence that the results of the planning process did not in fact reflect the public welfare concerns of the community.