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Chapter 24

PUBLIC POLICY CONSIDERATIONS IN STATE WATER ALLOCATIONS AND MANAGEMENT

Charles T. DuMars[1]

University of New Mexico
Albuquerque, New Mexico

Synopsis

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[1]Professor of Law, University of New Mexico School of Law, J.D. Univ. of Arizona 1969, B.S. Univ. of Oregon 1966.

§ 24.01 Introduction

Allocation of water in the West under the prior appropriation doctrine anticipates a water market where water can be sold and transferred to uses that reflect its highest economic value. While initially most states did not create a hierarchy of beneficial uses, some early courts recognized the need to protect the public from uses that were economically unsound.[2] In this author's view, market allocation is still the most viable and "politics" free method for allocating the resource. Even so, it is clear that the trend is to provide a more thorough analysis of the socio-political consequences of water allocation decisions. The issues are complex because the number of persons affected by any decision is steadily increasing, and it is no easy task to prove that the public welfare is being served by a decision to put water to any particular use.

In any allocation of water there are always questions of equity that must be answered. These questions are not always answered by treating water solely as a commodity to be traded on the open market.

Some are adamantly opposed to free and open market transfers of water on philosophical grounds. Certain groups find inherent value in water in streams and in a rural

[2] *See* Young & Norton v. Hinderlider, 110 P. 1045 (N.M. 1910).

agrarian life. To proponents of this view, the values of maintaining water in streams and in a rural agricultural way of life cannot be captured by any formula which purports to establish a greater economic value to be gained from shifting water to higher valued uses.

On the other hand, a common aspiration of most people is for economic self improvement. To maintain economic growth, there is an implicit requirement that a scarce resource, such as water, should move to its most economically valuable use. For proponents of this view, an inflexible system of water allocation slowed down by public welfare considerations may be a serious obstacle to fulfillment of their aspirations. From this perspective, a system for managing water allocation that weighs the public interest in every water transfer is excessively cumbersome and complex, and perpetuates economic inefficiency by maintaining existing patterns of water use when economically more attractive re-allocations could be made.

§ 24.02 Conditions Creating the Typical Water Market

The conditions of water supply that gave rise to the prior appropriation system have been constant over time, but the demand for water has been expanding. For example in the last 70 years, the population of the State of New Mexico has more than tripled[3] and, as is the case in most western states, where population once was dispersed widely in the state, it is now concentrated in urban areas.[4] Over the same period, most states' surface waters have been almost fully appropriated, and groundwater previously not accessible due to inadequate drilling technology has become the major source of supply.[5] Finally, developments in hydrology now permit more precise measurement of underground reserves, better understanding of the relationship between underground reserves, better understanding of the relationship between underground and

[3] Jerry L. Williams & Paul E. McAllister, *New Mexico in Maps* 150-57 (2d ed. 1986).

[4] *Id.*

[5] Letter from Steve Reynolds, State Engineer, to Charles DuMars, Chairman, Governor's Water Law Study Committee (Mar. 12, 1984) (on file in office of Natural Resources Journal, University of New Mexico School of Law).

surface streams, and the possibility of reliably determining a state's water resource limits.

These demographic and technological changes have been accompanied by unprecedented, vastly increased demands for water in metropolitan, industrial, and recreational uses. While the demand for urban uses is increasing, most senior water rights remain in agricultural uses criticized by some as economically inefficient.[6] The closer the hydrologic system 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.

§ 24.03 Increasing Implications of Public Interest on Water Markets Considerations

Population increases have also been accompanied by increased production and disposal of municipal and industrial wastes and, 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. Separate from the issue of water pollution are simple concerns of allowing growth to exceed the capacity of the water supply to sustain it.

In short, the West is in the midst of a population explosion and the citizens are concerned about the finite nature of its water resources, from a quality and quantity standpoint. Submitting proposed water rights transfers to the test that they not harm public welfare is an expression of increasing uneasiness with growth based on a finite water future. Unfortunately, it also demonstrates the fact that some may view water as the key pressure point for stopping development and growth that they oppose on philosophical grounds unrelated to water.

Interestingly, mistrust of markets 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

[6]Dudley D. Johnson, "An Optimal State Water Law: Fixed Water Rights and Flexible Market Prices," 57 *Va. L. Rev.* 345 (1971).

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.

However, where water is the resource in short supply, a strict market allocation may be viewed as intolerable on philosophical grounds. 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 possibility that allowing the market to exclusively allocate western water might displace from competition those who could not bear the going rates.[7] While the result would be the same if the exhausted resource were coal, oil and gas, or gold, the affective reaction to the possibility of running out of water is always emotionally charged.

People opposed to all water market transfers would argue that even in extremely arid areas, people should not be forced to move for lack of water. They argue that if markets are allowed to function, given the strength of demand and the relative paucity of supply, water reserves could be exhausted,

[7]Numerous authors have written on this topic. *See, e.g.*, Douglas L. Grant, "Public Interest Review of Water Allocation and Transfer in the West: Recognition of Public Values," 19 *Ariz. St. L.J.* 681 (1987); David H. Getches, "Water Use Efficiency: The Value of Water in the West," 8 *Pub. Land L. Rev.* 1 (1987); R. Mark Josephson, 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); Arthur L. Littleworth, "The Public Trust vs. The Public Interest," 19 *Pac. L.J.* 1201 (1988); Susan M. Trager, "Emerging Forums for Groundwater Dispute Resolution in California: A Glimpse at the Second Generation of Groundwater Issues and How Agencies Work Towards Problem Resolution," 20 *Pac. L.J.* 31 (1988); Helen Ingram *et al., Measuring the Community Value of Water: The Water and Public Welfare Project* (Udall Center for Studies in Public Policy, Univ. of Ariz. and the Natural Resources Center, Univ. of N.M. 1989) (monograph); Allen V. Knesse & F. Lee Brown, *The Southwest Under Stress: National Resource Development Issues in a Regional Setting* (Resources for the Future, Inc. 1981); United Nations Dep't of Technical Co-operation for Development, *Assessment of Multiple Objective Water Resources Projects: Approaches for Developing Countries* (United Nations 1988).

and that this is unacceptable.[8] Unfortunately, the critics of markets do not offer any explanation why a purely political allocation of water supplies would increase the size of finite water resources or treat the poor more fairly.

§ 24.04 Statutory and Case Law Inclusions of the Public Interest Criteria

In response to this growing concern, it is not surprising that the issue of whether allocations are consistent with the public interests of society at large is raised in numerous statutes and decisions.

Under modern appropriative law, public interest criteria are usually considered by state officials as part of the permitting process and in determining whether to approve applications for water right transfers. For example, the North Dakota state engineer is required to find that a proposed appropriation is in the "public interest" before a water permit may be granted.[9] The factors which must be weighed in determining the public interest are: (a) benefit to the applicant; (b) effect of resulting economic activity; (c) effect on fish, game, and public recreational opportunities; (d) effect of loss of alternative uses for the water; (e) harm to other persons; (f) intent and ability of the applicant to complete the appropriation.[10]

In theory, these criteria allow the state engineer to pursue a policy of optimum use of water resources. Rather than issuing a permit to the applicant next in line, he can balance the pending applications based upon these criteria and grant a permit which allows the use which best serves the public interest. Statutes such as these list issues to be considered, but they do not tell the applicant what she must prove to sustain her burden of demonstrating a diversion is in the public interest.

In Alaska public interest criteria are also defined by statute. The criteria apply to evaluations of applications for surface

[8]For a contrary view see George A. Gould, "Conversion of Agricultural Water Rights to Industrial Use," 27B *Rocky Mt. Min. L. Inst.* 1791 (1982).

[9]N.D. Cent. Code Ann. § 61-04-06 (1995).

[10]*Id.*

and groundwater and for reservations of water for instream uses. The Alaska Department of Natural Resources relies heavily on these criteria in evaluating applications. The criteria, which are similar to those in the North Dakota statute, are: (a) the benefit to the applicant resulting from the proposed appropriation; (b) the effect of the economic activity resulting from the proposed appropriation; (c) the effect on fish and game resources and on public recreational opportunities; (d) the effect on public health; (e) the effect of loss of alternative uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation; (f) harm to other persons resulting from the proposed appropriation; (g) the intent and ability of the applicant to complete the appropriation; and the effect upon access to navigable or public waters.[11]

In some states, public interest criteria have been judicially defined. For example, the Idaho Supreme Court has confirmed the need to consider the "local public interest" in evaluating applications to appropriate water, and has given the term a broad definition. The court stated that "by using the general term 'the local public interest,' the legislature intended to include any locally important factor impacted by proposed appropriations."[12] The court specifically required the following to be considered: (1) the benefit to the applicant; (2) its economic effect, benefit, and detriments; (3) its effect on loss of alternative uses of water that might be made within a reasonable time if not prevented or hindered by the proposed appropriation; (4) its harm to others; (5) its effect upon access to navigable or public waters; (6) the intent or ability of the applicant to complete the appropriation; (7) the assurance of minimum stream flows; (8) discouragement of waste; (9) encouragement of conservation; (10) public health and safety; (11) aesthetic and environmental ramifications; and (12) effect upon vegetation, fish, and wildlife.[13]

[11]Alaska Stat. § 46.15.080(b)(1)-(8)(1995).

[12]Shokal v. Dunn, 707 P.2d 441, 449-50 (Idaho 1985).

[13]*Id.* at 449.

The public interest criteria added to the Idaho water statutes are considered in granting applications to: (1) appropriate unappropriated water;[14] (2) reallocate water held in trust from some existing hydropower rights;[15] (3) appropriate unappropriated water for minimum instream flow;[16] and (4) change the place or nature of use or point of diversion of an established water right.[17]

Public interest criteria legislation in Montana requires the state, when issuing permits for large new appropriations (those in excess of 4,000 acre-feet per year and 5.5 cubic feet per second), to give special consideration to public values. The law also specifies criteria that must be considered if a permit or reservation application involves an out-of-state use.[18]

When considering an application to appropriate water, the Nevada state engineer is guided by three basic statutory criteria: (1) the availability of unappropriated water; (2) the effect on existing rights; and (3) the public interest.[19] The state engineer used his discretion to favor the general public interest when he granted appropriative water rights to the U.S. Bureau of Land Management and the U.S. Forest Service for recreation, fishery, and wildlife watering, including instream flow rights. In upholding the issuance of these rights, the Nevada Supreme Court rejected the argument that non-diversionary appropriative water rights are contrary to the public interest in Nevada.[20]

Wyoming law requires the state engineer to reject applications to appropriate water where they are detrimental to the public interest or welfare.[21]

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[14] Idaho Code § 42-203A(5)(e) (Supp. 1995).

[15] *Id.* § 42-203C (1990).

[16] *Id.* § 42-1503 (1990).

[17] *Id.* § 42-222 (Supp. 1995).

[18] Mont. Code Ann. § 85-2-311(4), 85-2-316(4)(b) (1995).

[19] Nev. Rev. Stat. Ann. § 533.370(3) (Michie 1995).

[20] State v. Morros, 766 P.2d 263 (Nev. 1988); *see infra* text accompanying notes 89 and 90.

[21] Wyo. Stat. § 41-4-503 (1995).

In New Mexico, a law requires the state engineer, when ruling on applications to appropriate any non-de minimis amount of groundwater, to determine that: (1) there is unappropriated water available; (2) the proposed use can be accomplished without harm to existing water rights; and (3) the proposed use is not contrary to conservation of water within New Mexico or detrimental to the public welfare of the state.[22] When such a determination is made, and other statutory conditions are met, the engineer will "issue the permit to the applicant to appropriate all or part of the water applied for."[23]

In Washington, the Water Resources Act of 1971 states: "allocation of waters among potential uses and users shall be based generally on the securing of the maximum net benefits for the people of the state."[24] The Act further requires that:

> Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigation values. Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that the overriding consideration of the public interest will be served.[25]

Another portion of the code provides: "[e]xpressions of the public interest will be sought at all stages of water planning and allocation discussions."[26]

In states where public interest criteria are not specifically spelled out by statute or judicial ruling, the public interest may be considered in other ways. For example, one California court called "public interest" the "primary statutory standard guiding the Water Rights Board in acting upon applications to

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[22] N.M. Stat. Ann. § 72-12-3 (Michie 1985).

[23] *Id.*

[24] Wash. Rev. Code Ann. § 90.54.020(2) (1992).

[25] *Id.* § 90.54.020(3)(a).

[26] *Id.* § 90.54.020(9).

appropriate water."[27] California courts have tended to support the state's public interest findings as long as there is substantial evidence in the record to support the public interest determination.[28]

§ 24.05 Conflicting Values Included in the Concept "Public Welfare"

Even though all members of society are concerned about the "public welfare," there is never unanimity as to its meaning. Herein lies the problem for the applicant. If she does not know the meaning of the standard she must meet, how can she prove her case? Obviously the applicant is as convinced that her application is in the public interest as the protestants are convinced it is not. Visualizing various public interest values in water as located upon a continuum may be helpful. At one end of the continuum would lie public interest values that are widely and strongly held. Water resources protected by law might be placed here. Through the Endangered Species Act,[29] for example, Congress has preserved the water habitats of certain birds, fish, and other kinds of wildlife. Similarly, the federal government has asserted water rights in national parks, Indian reservations, and other areas it has set aside for specific purposes. Since Congress has spoken on the subject, it is clear there is public support for this value.

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 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. The person opposed to all development whatsoever would likely fall on this end of the continuum. Between these extremes there are a number of other publicly

[27] Johnson Rancho County Water Dist. v. State Water Rights Bd., 235 Cal. App. 2d 863, 45 Cal. Rptr. 589, 596 (1965).

[28] Bank of Am. v. State Water Resources Control Bd., 42 Cal. App. 3d 198, 208, 116 Cal. Rptr. 770, 775 (1974).

[29] 16 U.S.C. §§ 1531 - 1544 (1994).

held values in water.[30] What these values are and how they might be addressed in a hearing is the subject matter of the balance of this paper.

§ 24.06 Environmental, Recreational, and Scenic Values

Many western states have recognized public benefit in preserving water flow in some stretches of perennial streams and rivers.[31] 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.

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.[32]

§ 24.07 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

[30] *See, e.g.*, Shokal v. Dunn, 707 P.2d 441 (Idaho 1985); National 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*, 464 U.S. 977 (1983); F. Lee Brown & Helen M. Ingram, *Water and Poverty in the Southwest: Conflict, Opportunity and Challenge* (U. Ariz. Press 1987).

[31] A. Dan Tarlock, "Appropriation for Instream Flow Maintenance: A Progress Report on 'New' Public Western Water Rights," 1978 *Utah L. Rev.* 211 (1978).

[32] Wallace Earle Stegner, *The Sound of Mountain Water* 41-43 (1980).

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.[33] 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 oil fields 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.[34]

§ 24.08 Historic and Cultural Values

For many people, water has significant cultural value apart from its importance as an economic commodity. In New Mexico, for example, 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.[35] In these enclaves, 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 stockponds filled by water diverted

[33] See discussion contained in articles cited *supra* note 7.

[34] *Id.*

[35] *Id. See also* Upper 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, Oct. 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.

from nearby sources and carried through this network of ditches, or *acequias.*

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 Pueblo Indian rituals, dances, and feasts.

§ 24.09 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.[36]

§ 24.10 Public Welfare and Denial of Property Rights in Existing Wells

Invariably the question of public interest or public welfare will become intertwined with and perhaps confused with the issue of whether a new well "impairs" the rights of another. Of course, what is impairment, is in and of itself, a question of the value to the public of protecting one person's existing capital investment if to do so precludes another from developing the same resource.

The late Dean Frank Trelease observed 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

[36] *See* Frank J. Trelease, "Policies for Water Law: Property Rights, Economic Forces, and Public Regulation," 5 *Nat. Resource J.* 1 (1965). *See also* Jim Wright, *The Coming Water Famine* (1966); and Ernest A. Engelbert & Ann Foley Scheuring, *Water Scarcity: Impacts on Western Agriculture* (U. Cal. Press 1984).

> 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.[37]

An example may illustrate this point. Suppose well owner A decides to put down a well, and pumping from his well affects well owner B who owns an existing well. The following questions seem appropriate for a state engineer in deciding whether the effects on well owner B constitute impairment. First, has well owner A designed his well to minimize the effects on B and has he selected a site which will minimize his effects on B? If the answer to both of these questions is "yes," then the state engineer should ask the following questions of B.

What is the depth of B's well, and what is the depth to water in the aquifer where B's well is located? Finally, what is the water column in B's well? If B has a one hundred foot well with a water column of seventy-five feet and the pumping by A would lower that water column only ten feet over the next fifty years, this would obviously be an effect on B's well. This would not, however, constitute impairments because B's well would function as efficiently at the end of fifty years with a water column of sixty-five feet as it did with a seventy-five foot water column.

Suppose, however, that B's well has only twenty feet of water column in it, and that because of A's pumping, after twenty-five years it would be lowered to a water column of twelve feet. If the well would not function with only twelve feet of water column, this would seem to be an open and shut case of

[37] Trelease, *supra* note 36, at 30.

impairment. One should not be so hasty because additional factors can make the issue less clear.[38]

B would argue that his well is impaired because twenty-five years from now, he will have to replace his well with a deeper one as a result of A's pumping. The question that must be asked by the state engineer is whether the pumping of A has actually caused B to have to replace his well. There may be no easy answer. In virtually all urban aquifers there will be other pumpers who are also having an effect on the aquifer by lowering the water table. If the water table is already declining before A puts in his well, at some point B would have to replace his well even if A did not pump.

In this hypothetical example, suppose that as a result of pumping by other permitted well users, B's well would have to be replaced after thirty years even if A never pumped a drop. Therefore, if A's pumping caused B to replace his well after twenty-five years, and it would have to be replaced after thirty years even if A didn't pump, then the actual injury to B is the impact of having to replace his well at the end of twenty-five years rather than at the end of thirty years. This would simply mean he would have to expend the same capital he would otherwise have to spend in the future, but do it five years earlier.

Thus, it is not the capital expenditure that is the damage, as this would have to be spent anyway because of others' pumping. Rather, the damage is the loss of the use for five years of the money he would have to expend to drill a well. However, the loss of the use for five years of that money will not occur for twenty-five years. Therefore, the actual cost to B today is the present value of not being able to use the money twenty-five years from now. At historical interest rates, this cost would not be high.

If the issue were not complicated enough, another factor may be relevant. Suppose that at the time of drilling A's well, B's

[38] *See In re* Brown, 332 P.2d 475, 479 (N.M. 1958) (a decline in water level in a well is merely a factor to be considered among others in determining impairment, including the particular characteristics of the aquifer).

well is thirty years old. If the useful life of a well is fifty years, then B's well will have to be replaced anyway before A's well would have any impact. Therefore, A would argue that B's well is not impaired because simple depreciation of the well is requiring the replacement, not A's well. B would counter that because of A's pumping he will have to drill the well deeper in the future, at greater cost, when he does replace his well. Therefore, the additional cost of drilling a deeper well is impairment. A will respond that the actual damage to B today is the present value of B's having to drill his well somewhat deeper twenty years in the future.

Finally, suppose the aquifer where B's one hundred foot well is located is three hundred feet thick and begins eighty feet below the ground surface. Suppose further that B initially chose to drill his well only one hundred feet deep to save expenses and that if he had drilled it two hundred feet deep, there would have been no impairment problem. Can B choose to tap just the top of the aquifer and foreclose A's junior but more efficiently constructed well? The state engineer will have to decide whether the depth of a well is part of B's water right or whether the water right is the right to obtain water at reasonable depths with an efficiently designed well appropriate to the aquifer. This is not really a legal issue at all, it is the public welfare question of balancing existing property rights against society's needs to develop unused water resources.

Both logic and caselaw support the proposition that one's water right in a well does not always include the right to a well of a particular depth. The rational solution for the state engineer in these cases is to place burdens on the new well driller as well as on the holder of a vested right. First, the new well owner must have selected a site that is designed to minimize the impacts on surrounding wells and have drilled and equipped his well to minimize impacts on other well owners. As to the vested right holder, the state engineer must: (1) not allow an inefficient shallow well to foreclose all future access to the aquifer; (2) distinguish between impacts that are actually caused by the new well owner as opposed to existing and projected impacts caused by pumping by others; (3) determine the practical present effects on the water column within the well of the lowering of the water table; and (4) determine whether the well would have to be replaced anyway because of depreciation of the well itself. Finally, if there are actual effects caused by the new well, the state engineer should determine whether he should condition a well permit on the new well owner's willingness to either compensate the existing well owner for the damage or in severe cases, drill a new well for the existing owner.

If a new well would inflict actual costs on persons of modest incomes in the area who are unable to pay the costs, this factor is certainly relevant to the state engineer's inquiry under the issue of "public welfare" and would present a good case for requiring compensation.

The "tradeoffs" between protecting vested rights on the one hand and allowing full development of the aquifer on the other, were perhaps best framed by the Colorado Supreme Court in *A-B Cattle Co. v. United States*.[39] Commenting upon past decisions that protected senior water rights but foreclosed other development, the court stated:

> These decisions are concerned primarily with the respective priorities of *vested rights* which have been established. It is implicit in these constitutional provisions that, along with *vested rights*, there shall be *maximum utilization* of the water of this state. As administration of water approaches its second century, the curtain is opening upon the new drama of *maximum utilization* and how constitutionally that doctrine can be integrated into the law of *vested rights*. We have known for a long time that the doctrine was lurking in the backstage shadows as a result of the accepted, though oft violated, principle that the right to water does not give the right to waste it.[40]

The "waste" in *A-B Cattle* was the possibility that a storage reservoir could not be built if the supreme court upheld an

[39] 589 P.2d 57 (Colo. 1978)(en banc), *reh'g denied* (Jan. 29, 1979).

[40] *Id.* at 60.

alleged inefficient means of diversion by surface users.[41] The court did not allow that "waste." In the context of groundwater, the "waste" caused by interpreting *any* decline in water levels as "impairment" would be the loss of valuable groundwater resources because senior well owners chose to drill shallow wells.

The New Mexico Supreme Court held in *In re Brown* that a decline in water level in a well is not *per se* "impairment." It refused to hold that a decline in the water level of 3.90 feet was impairment as a matter of law.[42] Rather, the court held that it was merely a factor to be considered among others, including the particular characteristics of the aquifer.[43]

The issue of reasonable water table declines was addressed eloquently in *Mathers v. Texaco, Inc.*[44] In *Mathers*, an application was filed to appropriate water in the Lea County Underground Water Basin.[45] Prior to any litigation, the state engineer had recognized that the Lea County Basin would necessarily decline if it was to be utilized at all.[46] As a result, he applied a time dimension to the rights and decided to allow water to be taken by future appropriators at a rate such that, at the end of 40 years, there would be sufficient water left for domestic and nominal uses, but not for commercial agriculture.[47]

The protestants whose wells were being affected by the declines in the water table as a result of new permits argued that under the doctrine of prior appropriation, no new appropriator could lower water levels and deny them their right to the water level they had when they put in their well.[48] In rejecting this argument, the supreme court pointed out:

[41] *See id.*
[42] 332 P.2d 475, 479 (N.M. 1958).
[43] *Id.*
[44] 421 P.2d 771 (N.M. 1967).
[45] *Id.* at 773.
[46] *See id.* at 774.
[47] *Id.* at 776.
[48] *See id.* at 775.

> [if] the position of the protestants be correct, then each and all of the many permits to withdraw waters from this basin issued by the State Engineer, subsequent to the initial permit, have been issued wrongfully and unlawfully, because each withdrawal, to some degree, has caused a lowering of the water level, and thus an impairment of the rights of the initial appropriator.[49]

Judge Bratton also described the issue thoroughly and clearly in a New Mexico United States District Court decision involving an attempt to drill wells in the then unregulated lower Rio Grande. In *Maestas v. Elephant Butte Irrigation District*,[50] Elephant Butte Irrigation District (EBID) had drilled wells in an undeclared basin. Individuals claiming that the pumping of EBID's wells adversely affected the performance of their wells filed suit to enjoin EBID from pumping.[51] Judge Bratton distinguished between the integrity of an appropriator's "water right" and the functioning of the means of diversion.[52]

In *Maestas*, high volume pumping from deeper wells, to supplement the entire water supply of the District, reduced the amount of water discharged by the shallow private wells.[53] This caused surging and caused some wells to pump sand.[54] Judge Bratton refused to grant an injunction, pointing out that the effects the farmers observed "relate only to the functioning of their wells and not to the integrity of their water rights."[55] He found that "at this point in time there is ample water of an acceptable quality available and it is economically feasible to pump it."[56]

[49] *Id.*
[50] No. 78-138-B, slip. op. at 1 (D.N.M. May 11, 1979).
[51] *Id.* at 1-2.
[52] *See id.* at 15.
[53] *Id.* at 7-10.
[54] *Id.* at 8.
[55] *Id.* at 15.
[56] *Id.* at 16.

Even in the area of water quality, a decline in water level has been found to be reasonable where it did not significantly increase effects caused by past pumping. In *Stokes v. Morgan*,[57] a new well was causing saltwater intrusion in an old well.[58] The court rejected an argument that this was impairment because historical pumping had already begun to cause deterioration in the water quality in the well. The court stated: "[t]his Court has previously held that the lowering of a water table does not necessarily constitute impairment, even though there may be some negative economic impact. . . ."[59] It went on to hold that "protestants have not shown that the proposed move will cause a *significant change* in the rate of deterioration."[60]

Unlike New Mexico, which addressed reasonable water declines through case law, many western states have dealt with this issue by statute. This is true in Idaho,[61] Kansas,[62] Colorado,[63] Montana,[64] Nevada,[65] and Utah.[66]

§ 24.11 Categorizing Public Welfare Values

Given the incredibly complex nature of the public welfare issue, the practitioner should begin by dividing the subject into categories of impact, by subject matter.

While the categories of public interest values may overlap, any water rights transfer or appropriation decision may be argued to impact the following separate kinds of values: Physical resources values, biological resource values, human use values, and quality of life values.

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[57] 680 P.2d 335 (N.M. 1984).

[58] *Id.* at 337.

[59] *Id.* at 341.

[60] *Id.* at 342 (emphasis added).

[61] Idaho Code § 42-222 (Supp. 1995).

[62] Kan. Stat. Ann. § 82a-711a (1989).

[63] Colo. Rev. Stat. Ann. §§ 37-92-101 - 37-92-602 (West 1990 & Supp. 1995).

[64] Mont. Code Ann. §§ 85-2-402 - 85-2-403 (1995).

[65] Nev. Rev. Stat. Ann. § 534.110 (Michie 1995).

[66] Utah Code Ann. § 73-3-23 (1989).

[1] Physical Resources Values

This category includes all possible physical impacts on water supply. One must ask: Is it a diversion of surface water only, groundwater only, or a circumstance where they are conjunctively connected? If it is a surface diversion, what is the impact of this specific diversion on all alternative uses of the water in the stream system? What will be the impact on water quality? Will it change the quantity in the stream so as to increase the salts or decrease the ratio of fresh water to waste water from other sources? Will it alter the physical means of diversion of other uses, affect the momentum value of water for hydro-power purposes or the buoyancy value of water for purpose of river transportation by barges? How will it affect sedimentation, erosion bank maintenance, and stream morphology?

If it is a diversion of groundwater, how will it affect the soils in terms of compaction, specific yield of the aquifer, the depth to water, the lift costs for water, the long term opportunity costs for use of the water by others, the quality content of the aquifer, permeability of the aquifer? If it is a diversion of groundwater hydraulically connected to a stream, how is the applicant prepared to protect all senior surface water users?

[2] Biological Resource Values

This category includes all impacts on the biota of the area. One must ask: What will be the impact of the diversion on aquatic and terrestrial ecology? How will it affect endangered species, forests, the overall integrated ecosystem of which the river forms a part? If there is to be change, can the applicant demonstrate that the diversion did not proximately cause any results one might consider harmful?

[3] Human Use Values

This category includes all impacts on the economic well being of the region. One must ask: How will the diversion affect agricultural irrigation? How will it affect aquaculture, fisheries, domestic water supply, navigation, recreation, hydropower, flood control? How will it affect dedicated use values, mineral development, or land use?

[4] Quality of Life Values

This category includes all impacts on the sociological fabric of the region. One must ask: What will be the socio-economic impacts of the use in general? Will it require resettlement, or affect fundamental cultural values of the area? Will it require protection of archeological sites? Will it have anthropological consequences? Will it affect public health and will it affect the aesthetic values of the area?

§ 24.12 Presenting The Public Welfare Case: Using Rulings of Other Institutions to Support One's Case

There can be no best way to prepare a case to demonstrate that a particular use serves the public welfare. Each case turns on its own facts, however, the following principles may be helpful.

The major premise of any public welfare case is that it is the job of the public at large through the democratic process to define the public welfare. We elect public officials to carry out our views on the public welfare issue. Thus, a practitioner should first try to demonstrate that a legislative or regulatory body has already ruled on the public welfare issue in favor of the applicant.

Under the principles of primary jurisdiction, a legislative standard, ruling, or other holding that supports an applicant's use of water for a particular purpose can be argued as conclusive on the issues. If the standards in a local water plan, zoning ordinance, or county comprehensive plan supports one's application, this should of course be advanced as controlling on the issue of public welfare.

If there are any other publicly produced studies, such as environmental impact statements or other public financial data supportive of the proposed use, these can also be argued as representing other public officials' views as to the meaning of the public welfare.

If elected officials have supported one's project with a special bond issue, or other financial support indicating their view that the net benefits of the project exceed the costs to the community, this is also relevant on the public welfare issue.

If there are no other standards or studies ruling on the issue, then the public welfare issue can be proven by the applicant by setting out the issue as succinctly as possible. The following additional items should be proven by the applicant to demonstrate that the applicant's use of water will support human use values.

[1] Proving the Human Use Value Issue

- The applicant should demonstrate the total direct and indirect economic benefits that will result from the development of the project. These include increased tax base, circulating capital, improvement of economic image of the area, education and training, and overall contribution to the community from an economic perspective.

- The applicant should demonstrate how the direct and indirect economic benefits exceed the infrastructure costs necessary to support the effort and that the project was invited in by the public representatives reflecting their view that the public welfare value of the use of the water would be served by its diversion.

- The applicant should demonstrate that the economic value per acre foot of the water in its use exceeds the value of alternative future uses of the water.

- The applicant should prove that the consumptive use of water per unit of production in its use is less than the consumptive use per unit of production of water in other uses.

- The applicant should prove that it has taken advantage of every current technology to conserve water and that this is superior to other uses that might be made of the water.

- The applicant should prove there is a long-term commitment to continue to engage in exploration of other water conservation technologies as they develop.

- If there is an impact on other human use values of water, the applicant should prove that the value of water used by it has less impact on these human use values than the other uses that would develop if it did not use the water.

[2] Proving the Biological Resource Values Issue

If there is an impact on biological resource values that has not already been decided in another forum, the following facts should be proven:

- The applicant should demonstrate that any impacts on local biological resources have been caused by past improper management practices and currently wasteful authorized use, rather than by the applicant's incremental use of water. If the impacts are in fact being caused by past and ongoing improper management practices, it is not appropriate to penalize the new use that optimizes protection of the biological resource while protecting existing bad management practices. The applicant should argue that the solution is to go after the entities causing harm to the environment rather than to deny a new environmentally sound application.

- If the biological data is not currently in place to fully predict the impact of the applicant's diversion, it should demonstrate there is a way to grant the application but require that all of the interested parties study and monitor the project to understand the exact impacts and be prepared to remediate the problem should one arise.

- If the biological resource is impacted, the applicant should demonstrate that it is possible to utilize the return flows from the project to support biota in another area and remediate the problem.

[3] Proving the Quality of Life Issue

If there is a quality of life problem as a result of impacts on traditional cultures, the applicant should demonstrate that the proposed use is not the cause. Rather, the decline in the local culture is simply a manifestation of a greater problem such as lack of jobs, urban encroachment, and economic inviability of the lifestyles of those whose culture, society seeks to preserve given current trends toward urbanization.

The applicant should demonstrate that there is a way to address these problems by providing productive jobs for those who live in the area and at the same time making efforts to attack the underlying causes rather than focusing only on defeat of one's project.

Finally, the applicant should demonstrate how the economic value of the jobs created by one's projects will help the existing culture remain intact and how one's project is tailored to avoid impacts on native cultures.

[4] The Most Important Issue: Determining What is the Real Problem

The final issue that must be determined early on is whether those opposing the project are opposed to the project because of what it is, or because of its impact on water supply. If the project is opposed on bona fide practical water related grounds, then settlement is possible and is the best solution.

Indeed, if the real concern relates to water supply, impacts on biota or cultural values, there is a great deal of flexibility in offering up return flow plans that support the biological concerns, conserve water by promoting recharge, or protect local cultures. Proposals that promote conservation, and offer well replacement plans and groundwater monitoring can be of great help to all living in the area concerned about water supply.

Good faith discussions usually demonstrate that persons proposing to appropriate or transfer water rights are as concerned with the public welfare as those who oppose the applications.

If parties are proceeding in good faith, there is almost always some common ground. That ground will be laid by the applicant when it demonstrates that (1) it will generate the most opportunity for society at large, (2) with the least quantity of water, (3) with the least externality costs, and (4) with the greatest opportunity for reuse of the water by others.

However, if a project is simply opposed on public welfare grounds because the protestant is opposed in general to this particular kind of use, litigation is probably inevitable. All of the above factors must be set out through expert economists, engineers, water conservation experts, and public officials supportive of the project.

If one puts on his or her best case and fails before a fair-minded neutral decision maker, then the populace of the region, whose will is reflected by its decision-makers, has concluded that the potential user of water should go elsewhere. This is an imperfect system. It is probably not the one that would be selected by "philosopher kings," but it is the one we function under and is certainly superior to any others this author has come across.