An Agricultural Law Research Article

High Noon on the Ogallala Aquifer: Agriculture Does Not Live by Farmland Preservation Alone

Part 2

by

Myrl L. Duncan

Originally published in WASHBURN LAW JOURNAL
27 WASHBURN L. J. 16 (1987)

missed two important opportunities: to conserve water through conservation planning, and to provide leadership needed to ensure the future of western Kansas agriculture.

b. *The Legislative Response*

Unfortunately, the legislature, charged with approving the Plan, not only has failed to question the Water Office but has enacted a so-called water conservation bill[250] that limits the use of conservation planning even further than the Plan would limit it. As introduced, the bill tracked the Plan[251] and would have authorized the Chief Engineer to require conservation plans on a case-by-case basis and in areas designated by basin advisory committees.[252] As enacted, however, the legislation authorizes the Chief Engineer to require planning only of those individuals applying for permits for new appropriations and for changes in use.[253] Since the number of such applications is minute compared to the number

250. Act of April 24, 1986, ch. 392, 1986 Kan. Sess. Laws 2031-40.

251. For discussion of the pertinent Plan provisions, see *supra* text accompanying notes 236-37.

252. Initially the provision read in pertinent part:

> The chief engineer may require the preparation of a conservation plan by a water user or users whenever: (1) An area plan, prepared and approved under the basin planning process of the state water plan, contains a recommendation to the chief engineer that the water user or users be required to prepare a conservation plan; (2) an application for transfer of water . . . is received; or (3) the engineer, upon investigation thereby, deems the preparation of a conservation plan to be in the public interest.

1986 Kan. H.R. 2703, § 3(a).

253.

> The chief engineer may require an applicant for a permit to appropriate water to adopt and implement conservation plans and practices. Such plans and practices shall be consistent with the guidelines for conservation plans and practices developed and maintained by the Kansas Water Office . . . . Prior to approval of an application, the chief engineer, in consultation with the director of the Kansas water office if requested by the applicant, shall determine whether such plans and practices are consistent with the guidelines adopted by the Kansas water office.

KAN. STAT. ANN. § 82a-711(d) (Supp. 1986). Change in use applications are judged by the same standards used for applications for new appropriations. *Id.* § 82a-708b.

The development of the above guidelines is to be governed by a plethora of self-contradictory criteria that, I suggest, will not necessarily ensure conservation. Such guidelines shall:

> (1) not prejudicially or unreasonably affect the public interest;
> (2) be technologically and economically feasible for each water user to implement;
> (3) be designed to curtail the waste of water;
> (4) consider the use of other water if the use of freshwater is not necessary;
> (5) not require curtailment in water use which will not benefit other water users or the public interest;
> (6) not result in the unreasonable deterioration of the quality of the waters of the state;
> (7) consider the reasonable needs of the water user at the time;
> (8) not conflict with the provisions of the Kansas water appropriation act and the state water planning act;
> (9) be limited to practices of water use efficiency except for drought contingency plans for municipal users; and
> (10) take into consideration drought contingency plans for municipal and industrial users.
>
> When developing such guidelines, the Kansas water office shall consider existing guidelines of groundwater management districts and the cost to benefit ratio effect of any plan.

Id. § 74-2608.

of current appropriators,[254] the provision affects only a small number of irrigators. Moreover, not all of these applicants will be required to submit plans.

Despite repeated efforts to amend the bill so that all covered applicants would be required to submit and implement conservation plans,[255] the Act grants the Chief Engineer authority to require plans only on a case-by-case basis.[256] Thus, the provision creates the same make-shift scheme proposed by the Plan except that it impacts a much smaller class. Frankly, while the Act acknowledges the need for conservation, it cannot be considered meaningful conservation legislation. On the issue of conservation planning, the legislature's desire to maintain the status quo surpasses even that of the Kansas Water Office.

c. *Metering*

The Plan's treatment of the metering issue is slightly more encouraging than its treatment of conservation planning. There is no argument that metering the amount of water withdrawn from wells is desirable. Not only does metering enable us to accurately forecast future supplies,[257] it also helps to ensure that appropriators pump no more than their approved allotments. Dean Gigot, one of the largest irrigators in southwest Kansas, states succinctly: "The only way in hell you're ever gonna know how much water's being withdrawn is through a very rigid metering system, monitored by a third party."[258]

Since 1957, the Chief Engineer has had the authority to order metering[259] but has generally declined to do so. By contrast, GMD No. 4, since 1980,[260] has required the installation of meters on all new and redrilled wells, currently numbering about 180.[261] GMD No. 3 has had a similar requirement since early 1985.[262] The real question, however, is whether meters should be required on all wells. The Plan takes the position against mandatory metering, citing installation and maintenance

254. As of September, 1986, 15,579 appropriation rights were registered state-wide; 510 applications were filed in 1985. Conversation with Lee Rolfes, Chief Counsel, Division of Water Resources (Sept. 9, 1986)[hereinafter Rolfes Conversation II]. Approximately 450 applications for changes in use are filed annually. Conversation with Paul Clark, Division of Water Resources (Aug. 28, 1987).

255. Subcommittee Meeting of House Committee on Energy and Natural Resources attended by the author (Feb. 17, 1986).

256. Further deviating from the Plan, the Act also provides that the Chief Engineer *may* require plans of purchasers of short-term water rights under the water marketing statute. KAN. STAT. ANN. § 82a-1311a(d) (Supp. 1986). The Plan would have *required* all purchasers to develop conservation plans. *See supra* text accompanying notes 240-42.

257. KANSAS WATER OFFICE, KANSAS WATER PLAN, CONSERVATION SECTION, SUBSECTION: AGRICULTURAL WATER CONSERVATION 5 (1985).

258. Russell, *supra* note 72, at 15.

259. KAN. STAT. ANN. § 82a-706(c) (1984).

260. *See* NORTHWEST KANSAS GROUNDWATER MANAGEMENT DISTRICT NO. 4, *supra* note 197, at 24-25.

261. Bossert Conversation, *supra* note 203.

262. Baker Testimony, *supra* note 63, at 3.

costs,[263] administrative burdens and concerns that metering could jeopardize the progress made by GMDs.[264]

The Plan proposes a voluntary metering program, relying on the twin incentives of education and finance.[265] To assist irrigators with the cost of installation, it suggests either the awarding of a one-time tax credit or the inclusion of installation as an activity qualifying for support under the cost-share program administered by the State Conservation Commission and conservation districts.[266] Under the latter scheme, which the Plan recommends, the state would share the cost equally with the irrigator to a maximum of $500; the option would be available until June 30, 1990.[267] Admittedly, this proposal would not eliminate all costs. But the Plan also acknowledges savings that would inure to irrigators who pump less because metering helps them better assess water needs. The state's funding, combined with those savings, would diminish the financial burden substantially.

The recommendation undermines the Plan's arguments against mandatory metering. Having made a proposal that would greatly reduce installation costs, it seems inconsistent for the Water Office to rely on costs to argue against mandatory metering. The proposal also weakens the administrative inconvenience argument. Since it is assumed that a considerable number of irrigators would take advantage of a program encouraging installation, the Plan would create at least a portion of the administrative burden it seeks to avoid by rejecting mandatory metering. Moreover, like the administrative argument made in connection with conservation planning,[268] the contention fails to acknowledge that GMDs can carry the initial burden.

The Plan's final justification for rejecting mandatory metering—a desire not to jeopardize progress made by GMDs[269]—is more difficult to

263. Gary Baker, Manager of GMD No. 3, estimates the average installation cost to be $1500 and states "the economic conditions of the day will not support this requirement." *Id.* at 3.

264. KANSAS WATER OFFICE, KANSAS WATER PLAN, CONSERVATION SECTION, SUBSECTION: AGRICULTURAL WATER CONSERVATION 4 (1985).

265. *Id.* at 5-6.

266. Landowners form conservation districts at the county level, and the State Conservation Commission oversees them. Their purpose is the prevention of soil erosion and the protection of water resources. Districts are empowered to assist farmers by conducting conservation research and demonstration projects, and by developing comprehensive plans for the conservation of soil and water resources. KAN. STAT. ANN. §§ 2-1901 to -1918. (1982 & Supp. 1986). They also locally administer state conservation programs such as the program allowing the state and landowners to share the cost of installing conservation structures. KAN. ADMIN. REGS. § 11-1-1-5 (1983 & Supp. 1986).

267. KANSAS WATER OFFICE, KANSAS WATER PLAN, CONSERVATION SECTION, SUBSECTION: AGRICULTURAL WATER CONSERVATION 5 (1985). House Bill 2739, which would have enacted the proposal, was not reported out of the House Committee on Energy and Natural Resources during the 1986 legislative session. KANSAS LEGISLATIVE INFORMATION SYSTEM, SENATE AND HOUSE ACTIONS REPORT 70 (1986).

268. *See supra* text accompanying notes 235, 245.

269. KANSAS WATER OFFICE, KANSAS WATER PLAN, CONSERVATION SECTION, SUBSECTION: AGRICULTURAL WATER CONSERVATION 5 (1985).

respond to. To the Water Office, the rationale no doubt reflects a desire to implement the GMA's declaration that local water users determine their own destiny.[270] Just as clearly, however, this rationale again demonstrates how the current structure of water law inhibits our ability to conserve water.

The delegation of considerable powers to GMDs does not sever the Chief Engineer's supervisory responsibility over the state's water resources. Moreover, the Planning Act calls for the "sound management"[271] of water resources pursuant to both the GMA and the WAA. Finally, the Plan itself recognizes that metering is a means to "improved water management, because it enables us to monitor use."[272] Because the Ogallala, a nonrechargeable aquifer experiencing rapid depletion, desperately requires "improved water management," a policy that permits pumping without meters is hard to justify, if not untenable. Accordingly, in order to defend such a policy, the Water Office must rely on the existence of formidable practical impediments to metering. It is unable to do so, because, as discussed above, it proposes solutions to the very problems it fears.

The State Water Plan's discussion of the metering issue thus parallels its self-contradictory treatment of conservation issues in general. Yet, the Plan's inconsistencies do not differ significantly from those that exist under Kansas groundwater statutes. The regulation exempting conserved water from the WAA's forfeiture provisions is at odds with that Act's developmental bias; and the depletion formulas used by GMDs to conserve water will not significantly prolong the life of the aquifer. Similarly, the State Water Plan's conservation elements can best be described as halfhearted. Conservation cannot be treated seriously in the context of a Plan whose overall thrust is developmental.

In summary, it is clear the three basic components of Kansas water policy are either fundamentally development-oriented, or at best directed toward planned depletion. It is true that in recent years water-saving elements have begun to creep into the construction of the WAA and into GMD policies. It is also true that the State Water Plan has made some minimal conservation proposals, and the legislature has passed a "conservation act," albeit a feeble one. But such measures are akin to emergency medical assistance—they are designed to keep the patient alive in the short run, but do not respond to overall, long-term health needs. These measures principally address only new irrigation; they fail to address existing wells. More critically, they leave unchanged the "use as beneficial, nonuse as waste" philosophy that has created the crisis on the

270. *See* Kan. Stat. Ann. § 82-1020 (1984).
271. *See supra* text accompanying note 213.
272. KANSAS WATER OFFICE, KANSAS WATER PLAN, CONSERVATION SECTION, SUBSECTION: AGRICULTURAL WATER CONSERVATION 5 (1985).

Ogallala Aquifer. To provide for the long-term viability of the patient, western Kansas agriculture, we must administer strong medicine not just to the symptoms, but to the malady itself—the current level of development and the policies that have created it. Part V of this Article proposes such a course of treatment.

V. CONSERVATION: A NEW PROCEDURAL FRAMEWORK

Water policies that stress conservation to preserve the long-term life of the Ogallala Aquifer must be included in our normative framework for dealing with water issues. We have seen, however, that current Kansas water policies—the procedural framework—emphasize instead the development of water resources. As advocated by Professor Weiss,[273] this section of the Article will reformulate the procedural framework to emphasize conservation. My purpose is not to advocate any single program, although I indicate that certain ones would be particularly appropriate responses to the crisis on the Ogallala. Instead, I intend, by outlining a number of proposals, to stimulate conservation-oriented thought and discussion.

As a preliminary matter, it is necessary to explain what I mean by conservation. Earlier sections of the Article make clear that in the normative sense the term encompasses the concepts of stewardship and intergenerational justice.[274] Because my proposed conservation-oriented procedural framework is presented as a response to the existing development-oriented framework, a more precise definition has had to await an understanding of current policy.

In a general sense, development and conservation are opposites, yet each is a relative term. Carried to its extreme, development amounts to exploitation, whereas conservation in its extreme form requires nonuse. Although Kansas water policy now contains some water-saving elements, I believe it remains fundamentally oriented toward the developmental extreme. This conclusion is not based on the WAA's view that water development is beneficial, for in a semiarid to arid climate a certain level of development is clearly necessary. Instead, the conclusion derives from the Act's accompanying notion that nonuse of water amounts to waste.[275] This misconception, which has been permitted to function as the Act's operative core, has led to the all-out development policy that is responsible for the crisis on the Ogallala Aquifer.

Responding to the crisis by invoking the conservation extreme—nonuse—would mean establishing a safe yield formula for the Ogal-

273. *See supra* text accompanying note 70.
274. *See supra* text accompanying notes 68-119.
275. *See supra* note 158 and text accompanying notes 157-59.

lala.[276] Only the yearly recharge would be available for use, and the aquifer would never be depleted beyond its current level. I reject this alternative as an across-the-board panacea (although percentage adjustment of existing water rights, perhaps to the safe yield level, may be necessary in some seriously endangered areas). The Ogallala Aquifer receives only one-quarter to one-half inch of annual recharge;[277] permitting the use of only such a minimal amount of this water would effectively end irrigation from the aquifer. Any attempt to achieve this result immediately is politically, economically and socially unacceptable.[278] It also represents the antithesis of my stated goal: sustaining long-term, dependable agriculture in western Kansas.

A more moderate version of conservation allows water use in excess of "safe yield" yet within defined limits. Typified by the GMD depletion formulas discussed in the previous section,[279] this approach slows the rate of consumption but nonetheless effectively ensures that the water supply will disappear at a given future date. Thus, while a step in the right direction, such measures are essentially at odds with the long-term sustainability of dependable agriculture. The impact of depletion formulas is further reduced because they apply basically to new irrigation, very little of which is taking place today.

Yet another form of conservation, and the one I generally consider most workable, saves water as the result of serious reconsideration of the efficiency with which water is used and the uses to which it is put. Given the crisis on the Ogallala Aquifer, the use of inefficient irrigation technology is no longer acceptable, and the growing of intensely water-consumptive crops seems ill-advised. Accordingly, irrigators must be required to

---

276. Conceptually, safe yield is a term of nonoveruse rather than nonuse. I use it here to distinguish nonuse of the aquifer from nonuse of natural recharge.

277. *See supra* text accompanying note 48.

278. For further discussion, see *supra* text accompanying note 90. The Arizona Groundwater Management Act of 1980, ARIZ. REV. STAT. ANN. §§ 45-101 to -2732 (Supp. 1986), establishes a goal of safe yield by the year 2025 for the Tucson, Phoenix and Prescott management areas. *Id.* § 45-562. The goal will be implemented through a series of management plans that take effect at four ten-year and one five-year intervals. Required conservation measures will become more stringent in each successive planning period. *Id.* §§ 45-461 to 45-578. The Act has been held constitutional. Cherry v. Steiner, 543 F. Supp. 1270 (D. Ariz. 1980), *aff'd*, 716 F.2d 687 (9th Cir. 1983); Town of Chino Valley v. City of Prescott, 131 Ariz. 78, 638 P.2d 1324 (1981). The safe yield and conservation requirements were not directly at issue in those cases. Nonetheless, the decisions make it clear that because water management is of critical concern, the legislature has broad-sweeping power to deal with water issues.

Based on the Arizona model, Professor John Peck, University of Kansas Law School, urges that Kansas consider implementing a safe yield policy over time. Peck, *supra* note 132, at VIII-10. His proposal is provocative and deserves thoughtful consideration; questions about the agricultural and socioeconomic impact of such a policy would need to be answered. However, it must be pointed out that, as Peck acknowledges, the approach does little to solve the problem during the intervening period. Moreover, the aquifer may not be usable in 40 or 50 years. "Indeed, the depletion formulae of the western GMD's are predicated on the notion that after 40 years of pumping under the formula, it will be uneconomical to pump any more." *Id.* at VIII-10 to -11.

279. *Supra* text accompanying notes 198-208.

rethink their operations. The so-called "conservation act" of 1986[280] authorizes minimal implementation of this policy by permitting the Chief Engineer to require a small group of irrigators to prepare conservation plans. Expanding this program to require *all* irrigators, new and existing, to engage in conservation planning is an appropriate way to help ensure agriculture's long-term sustainability. While it is not possible to project exactly how much water would be saved, it seems probable that the amount will be considerable. I predict that as an immediate consequence of such a program, large numbers of irrigators will reduce their consumption when they see they are pumping more water than they actually need. More importantly, such an approach encourages water savings on an ongoing basis, by requiring irrigators to think in terms of conservation. In short, a conservation planning program would replace the current procedural framework's developmental bias with a clear conservation emphasis.

As the above preliminary discussion suggests, my proposed procedural framework will emphasize mandatory programs. This approach contrasts with the position taken in the first two articles in this series dealing with farmland preservation programs. In that field, the most effective programs combine limited land use control with incentives that encourage farmers in resisting development pressure.[281] I believe water conservation programs must take a different approach. While farmland preservation and water conservation programs attempt to protect resources vital to agriculture, their ultimate purposes are different because they seek to protect fundamentally different resources.

Agricultural preservationists are more concerned with the substitution of lower quality crop land for prime land, which will involve higher production costs, than they are with the United States running out of farmland.[282] By contrast, concerns about water on the High Plains are not triggered by the question of whether production costs will increase if we shift to dryland farming.[283] Instead, they are founded on the reality that without a guaranteed source of water the region may not be able to sustain dependable crop production. Unlike farmland, which is in inexhaustive supply on the High Plains, the Ogallala is the only reliable source of water. Thus, it follows that ensuring the sustainability of agriculture in the area depends upon protecting the aquifer on a long-term, intergenerational basis.

Because of this long-term social necessity, I emphasize mandatory

280. 1986 Kan. H.R. Substitute 2703. For discussion of the Act, see *supra* text accompanying notes 250-56.

281. Duncan, *supra* note 8; *Agriculture as a Resource*, *supra* note 10.

282. *See supra* text accompanying note 8.

283. Such costs may or may not increase. Irrigation costs will be eliminated but land costs will go up, since a viable dryland operation requires twice as much land as an irrigated one. M. FUND & E. CLEMENT, *supra* note 19, at 57.

water conservation rather than the incentive and control approach utilized in successful farmland preservation programs. Those programs also have their genesis in a long-term social goal—preserving farmland; nonetheless, they are directed at short-term and primarily economic decision-making by individuals. They attempt to discourage farmers from selling their land for development even though it may be in their best economic interest to do so.[284] Likewise, it may be in the best, short-term economic interest of some irrigators, needing the increased cash flow generated by larger crops,[285] to pump as much water as possible. Accordingly, it is possible to devise farmland preservation-type programs, both state[286] and federal,[287] that will accomplish water conservation by en-

284. *See generally* Duncan, *supra* note 8, at 73-76, 79-80 (discussion of the economics of land conversion).

285. *See supra* text accompanying notes 41-42.

286. The purpose of this note is neither to present an exhaustive list of program possibilities nor to make detailed proposals but rather to stimulate further discussion of water policy options. Accordingly, only a brief sketch of two programs will be set out.

First, the state or GMDs might consider retiring water rights by purchasing them from appropriators. Such a buy-back program was recently proposed by the State Water Plan as a means to enhance stream recovery. KANSAS WATER OFFICE, KANSAS WATER PLAN, FISH WILDLIFE AND RECREATION SECTION, SUBSECTION: STREAM RECOVERY 3 (Preliminary Draft 1986). A similar proposal was made in GMD No. 4, as a means to reduce aquifer depletion. Memo to Buy-Back Committee from Wayne Bossert, Manager of GMD No. 4. (Feb. 4, 1986)[hereinafter Bossert Memo]. Although both proposals have been temporarily rejected, either could serve as the model for future proposals.

A bill introduced in 1986, which would have implemented the Water Plan proposal, would have authorized the state to purchase rights as part of the State Conservation Commission's cost-share program. *See* 1986 Kan. H.R. 3075. For discussion of the cost-share program, see *supra* note 266. The GMD No. 4 proposal would have been 80% state funded and 20% district funded; the GMD would have raised its share by adding a surcharge of 10 cents per acre foot of water used to the fee assessed water users. Bossert Conversation, *supra* note 203.

Under the GMD No. 4 proposal, irrigators wishing to sell rights would have submitted bid contracts setting out the quantity of water offered for sale, the asking price and other conditions, such as repurchase options. In determining which bids to accept the GMD board would have given priority to: 1) those with the lowest per acre-foot value; 2) those in the highest depletion areas and in alluvial corridors; and 3) those demonstrating the best potential to achieve the program's goals. Payments would have begun the following year. Unless otherwise specified, purchased water rights would have been returned to the public domain. They would not, however, have been available for reappropriation. For discussion of the reappropriation dilemma, see *infra* note 438 and text accompanying notes 433-38. If the GMD wanted to retain rights, or if the bidder wanted the GMD to retain rights, (so that he or she could exercise a repurchase option, for example), the agreement would have so provided. The proposal was abandoned because of a dispute with the state over who would actually control the program. Bossert Memo *supra*; Bossert Conversation, *supra* note 203.

One major drawback to a buy-back system is its cost. Even a voluntary, less than comprehensive scheme such as the proposal made in GMD No. 4 would be very expensive. No exact price tag was placed on the project because there was no way to anticipate the value irrigators would put on their rights. However, a quick survey of GMD No. 4 board members, which revealed that they believed their own water rights to be worth more than might have been expected, demonstrated that the cost would have been great. Conversation with Wayne Bossert, Manager of GMD No. 4 (Sept. 16, 1986). By extension, the cost of a buy-back program covering the entire aquifer would be astronomical. Such programs seem hard to justify when the state is experiencing financial difficulties. For discussion of the state's fiscal problems, see *supra* note 111.

In addition, I believe buy-back programs are legally unnecessary because appropriation rights are qualified in nature and subject to regulation under the police power. *See infra* text accompanying notes 288-385, 406-08. Such programs are accordingly, ill-advised, since they seem to connote that adjustment of water rights requires an exercise of eminent domain.

A second possible incentive program is one that would encourage irrigators to engage in long-term water conservation, but which would also protect them from the risks of dryland agriculture. The irrigators would deposit all or a portion of their rights in a water bank that would permit

couraging irrigators to alter their short-term behavior. These programs

withdrawals in dry years. Such a program, which could be administered either by the Chief Engineer or the GMDs, would have goals different from those of other proposed water banking systems; those systems are designed as use maximization devices under which some users deposit water and others withdraw it. *See, e.g.*, S. ANGELIDES & E. BARDACH, WATER BANKING: HOW TO STOP WASTING AGRICULTURAL WATER (Inst. for Contemporary Studies 1978); Pring & Tomb, *supra* note 173, at 25-64 to 25-66. It would also differ from land banking schemes which likewise involve regular deposits and withdrawals. *See, e.g.*, A. STRONG, LAND BANKING (1979); Young, *The Saskatchewan Land Bank*, 40 SASKATCHEWAN L. REV. 1 (1974).

However, my hypothetical water banking scheme faces a major stumbling block that land banks do not: irrigators' ability to pump in dry years would be inextricably linked to the amount of water their neighbors pumped in the intervening years. While certainly one's ability to farm is affected by what goes on in the surrounding area (indeed, the farmland preservation movement is based on that premise), a determined, isolated individual can nonetheless continue to farm, even when surrounded by suburbia. Thus, in theory, a single tract of land could be placed in a land bank, set idle for a number of years, then be withdrawn and farmed again in the same manner as before. By contrast, irrigators who placed their appropriation rights in the bank, hoping to make a withdrawal in a drought year, might find their neighbors, who had continued to irrigate, had either pumped that portion of the aquifer dry or had lowered the water table to such an extent that the cost of pumping, including drilling deeper wells, would be prohibitive.

Thus, the suggested water banking program's two goals—conserving water and ensuring its availability for drought control—argue for action on an area-wide basis: the creation of nonirrigation districts. Like farmers in agricultural districts established by a number of states, notably New York and Minnesota, who join together to preserve farmland by agreeing not to develop it, irrigators could join together to preserve the aquifer by agreeing not to pump from it (or to significantly reduce their withdrawals) except in drought years. For discussion of state established agricultural districts, see Duncan, *supra* note 8, at 96-104.

Financial incentives could be used to encourage irrigators to enter into such agreements. The only present incentive that irrigators have to convert to dryland farming is the purely theoretical one that their *ad valorem* property tax bill will be reduced, because dry land is not worth as much as irrigated land. Yet because the well remains on the land, so that it could be returned to irrigated farming, it seems likely that county taxing officials will be reluctant to reduce the assessed valuation. A nonirrigation district program could stipulate that once a landowner had entered into an agreement not to pump, the land would henceforth be assessed as dryland, just as agricultural districting acts guarantee use value assessment to enrolled land.

However, such a tax break might not be enough incentive. Because land values are experiencing their sharpest decline since the 1930s, *Land values dropping*, Kansas City Times, Nov. 6, 1985, at D 1, col. 6; *Farm land values have biggest drop since "30s,"* Kansas City Star, June 9, 1985, at 10A, col. 1, the savings might be insufficient to encourage participation, especially since any financial incentive would have to be large enough to offset the federal income tax water depletion allowance that would be lost. For discussion of the water depletion allowance, see *supra* text accompanying notes 43-47.

A further incentive could be borrowed, by analogy, from the Wisconsin Agricultural Preservation Act, which at one time provided state income tax relief to those who agreed not to develop their land. Duncan, *supra* note 8, at 85-97, 94-96. The amount received by landowners would depend on the percentage of the appropriation right they elected to forego. The relief could be available annually, except in those years the landowner did utilize the banked rights. A maximum amount of relief could be set.

Such a plan must be mandatory to be effective; if operated on a voluntary basis, it would likely be as ineffective as voluntary farmland preservation schemes. *Id.* at 78-94. Voluntary participation would be limited to only those who would benefit financially after calculating the losses that would be incurred because of decreased production and foregone federal tax benefits. Thus, conservation would be a random proposition. Moreover, in locations where water use was reduced, rather than terminated, there would be no way to determine whether water still being used was being used efficiently.

A mandatory system, on the other hand, could combine control, in the form of required conservation planning, with benefit incentives. Such a system is suggested by the current Wisconsin program, under which the level of income tax credits allowed to participating landowners depends on whether their county has enacted zoning or planning directed toward the preservation of agricultural land. *Id.* at 85-87, 94-96. An analogous program aimed at groundwater conservation could provide that operators in a nonirrigation district would receive no benefits unless the governing GMD required all irrigators to at least prepare, if not implement, conservation plans. For discussion of conservation planning, see *infra* text accompanying notes. 395-96, 409-16. Such a system would increase the level of participation in the reduced usage program. When irrigators discover how much water can be conserved, and correspondingly, how irrigation expense can be reduced through the use of more efficient technology, it would make little sense not to modernize. The state could

may be more popular among irrigators than mandatory conservation

further encourage modernization by establishing a cost-share program similar to that suggested by the State Water Plan for the installation of meters. *See supra* text accompanying notes 266-67.

Once a conservation plan is carried out, the state might choose to reduce or eliminate incentive benefits; since the irrigator would no longer be banking water, there would be no further use for the excess portion of the appropriation right. However, one who agreed to use even less water than permitted by a conservation plan—for example, by switching to a less water-consumptive crop, or by shifting to dryland farming—would still be able to bank the difference between the quantity actually used and that specified in the plan. The irrigator would then be eligible for whatever incentive benefit had been established for those who conserve water by banking it and could withdraw portions of the deposit in dry years.

Compared to a buy-back program, a water banking program has both advantages and disadvantages. It would probably be less costly; however, its property tax abatement element might place more of an economic burden on counties than they can currently absorb. *Cf.* Petterson, *Oil Slump Threatens Counties*, Kansas City Times, May 5, 1986, at A-1, col. 1 ("Already rocked by a depressed farm economy, Kansas counties now face the potential loss of tens of millions of dollars in oil-based property taxes."). Another disadvantage of such a program is the administrative burden that would be created by the introduction of a new management level—the nonirrigation district—and by needing to involve county taxing officials.

287. Congress has already passed two programs aimed at encouraging conservation on the Ogallala, and it has enacted soil conservation legislation that could serve as the model for similar water conservation measures.

In 1984, Congress enacted the High Plains Groundwater Demonstration Program Act of 1983, which directed the Secretary of Interior to establish 12 aquifer recharge demonstration sites on the High Plains. Pub. L. No. 98-434, § 3, 98 Stat. 1675, 1675-1676. The program is intended to test current technology. Miller, *2d project proposed for Ogallala Aquifer*, Kansas City Star, Mar. 30, 1986, at 27A, col. 1. The sites have not yet been chosen, but the Kansas Water Office expects at least three applications for a Kansas site. A proposal by the City of Newton would use an injection well to recharge the aquifer with treated waste water; a proposal for a "spreading basin," in which water is collected and allowed to infiltrate by gravity, may also be considered. *Id.*

In 1986 Congress enacted the Water Resources Act of 1986. Pub. L. No. 99-662, 100 Stat. 4082-4273. The Act appropriates $13,000,000 for each of five fiscal years to research ways to slow the depletion of the Ogallala. *Id.* § 1121, 100 Stat. at 4239-41. Money is allocated for the operation of state advisory committees, for university and other research, and for demonstration projects.

The Food Security Act of 1985, Pub. L. No. 99-198, 99 Stat. 1354-1660, contains programs aimed at soil conservation that could easily be extended to encompass water conservation. *See* Press Release by Honorable Eugene Shore, Member of the Kansas House of Representatives (Feb. 3, 1986). Sections 1211-1213 of the Act, the so-called "sodbuster" provisions, declare that farmers who bring into cultivation highly erodible soils, as defined by the USDA, shall be ineligible for USDA benefit programs unless they act pursuant to an approved conservation plan. Pub. L. No. 99-198, §§ 1211-1213, 99 Stat. 1354, 1506-1507. The purpose of the program is two-fold: to preserve marginal lands and to reduce commodity surpluses.

> Under the current system, the taxpayers have been paying twice, once for farm support programs and again for the costs of soil erosion. The purpose of these provisions is to get the Federal Government out of the business of encouraging the cultivation of highly erodible land and the production of additional crops that are already in surplus supply.

S. REP. NO. 145, 99th Cong., lst Sess. 301-02 (1985), *reprinted in* 1985 U.S. CODE CONG. & ADMIN. NEWS 1967.

A water conservation program modeled after the sodbuster restrictions would affect only new water development, but such a program could assist a state such as Nebraska, which overlies most of the water left in the Ogallala Aquifer, in protecting its water resources. *See supra* note 21. In addition, if they can truly reduce production, such soil and water programs should help generate commodity price increases that would help alleviate the financial pressure that causes farmers to engage in resource-depleting practices. For discussion of these financial pressures, see *supra* text accompanying note 42. (Price increases would also help alleviate the current agricultural debt crisis.)

Similarly beneficial surplus reductions and commodity price increases would also result from water conservation provisions modeled on the Act's conservation reserve program. H.R. REP. NO. 271(I), 99th Cong., lst Sess. 82 (1985), *reprinted in* 1985 U.S. CODE CONG. & ADMIN. NEWS 1186 (Congress hopes the conservation reserve program will generate surplus reductions and commodity price increases). But more importantly, since the reserve program is aimed at reducing erosion caused by existing cultivation, a comparable water program could reduce the current level of water usage. Sections 1231-1236 of the Act authorize the USDA to enter into long-term (10-15 year) contracts under which farmers cultivating highly erodible soil will take land out of crop production and plant grass, legumes, or trees. Pub. L. No. 99-198, §§ 1231-1236, 99 Stat. 1359, 1509-1514. In

measures. However, since the long-term social need for water conservation on the Ogallala is imperative, I am reluctant to suggest we rely on programs geared toward changing short-term individual behavior.

There exists another valid reason to emphasize mandatory programs. As stated earlier in this Article, I believe the WAA contains provisions, long neglected, that stress the usufructuary nature of water rights. The State of Kansas controls all the water within its boundaries; appropriators have the right to use water consistent with established regulations. From the day water rights are issued, these regulations put irrigators on notice that the rights must be exercised reasonably and in accord with the public interest. Thus, as the state confronts the crisis on the Ogallala, water conservation becomes a matter not of incentive, but of obligation.

A. *The WAA's Forgotten Features: The Doctrines of Usufruct and Beneficial Use*

During the forty-year period since the passage of the WAA, the prodevelopment declaration of section 703, "all waters within the state may be appropriated,"[288] has been treated as the operative core of the statute. Yet, in allowing section 703 to dominate the Act, policymakers have neglected a number of other, conservation-oriented provisions. These forgotten features of the WAA can and should be used as the foundation of a long-term conservation ethic.

First, the WAA affirms the proposition that water rights are usufructuary in nature. In the section of their report entitled, "Scope of a State's Power Over Natural Resources,"[289] the Act's drafters restated the

---

return they will receive annual rental payments, either in cash or commodities, and will be eligible for cost-sharing and technical assistance to aid in the transition. Enacting similar provisions aimed at converting land irrigated by the Ogallala Aquifer to dryland farming would seem an appropriate means of confronting a crisis which is as threatening as the one produced by soil erosion. A conservation reserve program would also be consistent with yet another provision of the 1986 Farm Act. Section 1253 of the Act addresses congressional concerns about the impact that expanded irrigation has had on water supplies and crop commodity surpluses by directing the USDA's Soil Conservation Service to promote energy and water conservation through dryland farming. *Id.*, 99 Stat. at 1517; *see also* S. REP. NO. 145, *supra*, at 303, *reprinted in* 1985 U.S. CODE CONG. & ADMIN. NEWS at 1969.

Some will no doubt argue the nation cannot afford such a program at a time when deficits must be reduced; indeed, deficit reduction efforts threaten even the existing programs. Miller, *New Farm Bill Heading for Collision with Budget Limits*, Kansas City Star, Dec. 22, 1985, at 25A, col. 5. But the argument fails to consider the huge amount of tax revenue that is lost each year, more than $50,000,000 from Kansas alone, because of the water depletion allowance. *See supra* notes 43-47 and accompanying text. Repealing that tax break would permit Congress to fund a water conservation reserve program from the monies recovered. More importantly, whether or not a new program is established, repealing the subsidy, which has encouraged the Ogallala's depletion, would help to preserve the aquifer. If Congress is serious about protecting the Ogallala, it should revoke the water depletion allowance. *See* Ward & Kinsinger, *Building on a Farm Bill: A Tax Reform Agenda for Conservation*, 41 J. SOIL & WATER CONSERVATION 169 (1986).

288. KAN. STAT. ANN. § 82a-703 (1984).

289. Report, *supra* note 134, at 16.

Roman law doctrine of usufruct discussed in part III of this Article.[290]

> Some things, from their nature, such as light, air, water, mineral oil, mineral gas, and wild animals, must necessarily remain common, subject only to a usufructuary right to be considered as property only when and while reduced to, and retained in, possession.[291]

Characterizing the doctrine as a "fundamental principle relating to the development and use of certain natural resources," including water,[292] the drafters made it clear that all water rights, including those obtained under the WAA, are usufructuary in nature. Accordingly, section 702, the Act's first substantive section, declares water to be a *common* resource: "All water within the state of Kansas is hereby dedicated to the use of the people of the state, subject to the control and regulation of the state . . . ."[293] Section 707(a) establishes the corollary proposition that property rights in water are *qualified* rather than absolute. "Surface or ground waters of the state may be appropriated . . . . Such appropriation shall not constitute ownership of such water . . . ."[294] In other words, appropriators have *only the right to use* water; under the WAA this right takes the form of the permit issued by the Chief Engineer.

Second, the WAA provides that in addition to being usufructuary in nature, water rights are restricted by the doctrine of beneficial use. The WAA thus incorporates the common-law doctrines of reasonable use and beneficial use. Devised to reconcile the need to use water with the usufructuary principle that individuals cannot own water, the doctrines afforded rights to reasonable amounts of water for beneficial purposes.[295] The community was protected because uses were required to be socially beneficial in purpose and reasonable in their effects upon other uses and the public interest.[296] The doctrine is included in section 703, the prodevelopment provision, which declares, "[A]ll waters within the state may be appropriated for beneficial use."[297] The restriction obviously applies to the granting of permits by the Chief Engineer,[298] but the granting of a permit does not resolve the question. In a complementary provision,

---

290. *See supra* notes 120-33.

291. *Report*, *supra* note 134, at 16.

292. *Id.*

293. KAN. STAT. ANN. § 82a-702 (1984).

294. *Id.* § 82a-707(a). The 1945 enactment read: "Such appropriation shall not constitute absolute ownership of such water." Act of March 26, 1945, ch. 390, § 7, 1945 Kan. Sess. Laws 666-67. The term "absolute" was removed in 1957. Act of April 8, 1957, ch. 539, § 14, 1957 Kan. Sess. Laws 1079. That the subsection is intended to affirm long-standing doctrine is further demonstrated by the fact that the language comes directly from a 1917 statute. KAN. REV. STAT. § 24-903 (1923) (repealed, Act of March 26, 1945, ch. 390, § 25, 1945 Kan. Sess. Laws 671).

295. The reasonable use doctrine is riparian in nature while the beneficial use doctrine developed in prior appropriation systems. The two doctrines have coalesced over the years. Maloney, Capehart & Hoofman, *Florida's "Reasonable Beneficial" Water Use Standard: Have East and West Met?*, 31 UNIV. FLA. L. REV. 253 (1970); *see also* 1 S. WIEL, *supra* note 122, at 792-831; 2 S. WIEL, *supra* note 122, at 973-1008; *supra* text accompanying notes 120-33.

296. Maloney, Capehart & Hoofman, *supra* note 295, at 253-74.

297. KAN. STAT. ANN. § 82a-703 (1984).

298. For discussion of the permitting process, see *supra* text accompanying notes 144-50.

the Act declares that the obligation to use water in a beneficial manner is ongoing: "appropriation rights shall remain subject to the principle of beneficial use."[299]

Taken together, I believe these usufructuary and beneficial use provisions epitomize the potential for conservation that exists within the WAA. The provision under which appropriation rights "remain subject to the doctrine of beneficial use" is particularly important. Because it mandates ongoing scrutiny, it allows reexamination of the current level of development.

As discussed previously, the WAA does not define beneficial use; and, the Chief Engineer's regulation that encompasses any irrigation use robs the limitation of all force.[300] Nonetheless, I believe the restriction has meaning in the context of both the individual water user and the public. The individual-oriented aspects relate to the efficiency with which water is used. As will be discussed later in the Article, these features can serve as foundation for a conservation planning program that, unlike the ad hoc scheme established by the 1986 water conservation act, encompasses all irrigators.[301] But because the need to conserve water raises policy issues that transcend the efficiency of individual irrigators, it is appropriate to first examine the public side of the beneficial use doctrine.

1. *The Public Interest Aspects of the Beneficial Use Doctrine*

Although they are not as clearly spelled out as its individual aspects, it is clear that the doctrine's public interest aspects are fundamental to the WAA. We have already seen that the Act affirms the usufructuary principle of community control by declaring: "All water within the state of Kansas is hereby dedicated to the use of the people of the state, subject to the control and regulation of the state . . . ."[302] Although the Kansas Supreme Court has not described it in usufructuary terms, the court has on a number of occasions stressed the provision's importance to the statutory scheme. In upholding the provision's constitutionality, the court stated:

> [The provision] is the heart of the statute. The rest of it treats of details and procedure. It forms the basis for a different approach to the solution of questions concerning water rights than we have had in some of our opinions. Heretofore we have approached the questions largely on the basis of individual interest alone. Under this declaration and other provisions of the act we now approach them upon the basis of the interest of the people of the state without losing sight of the beneficial use the individual is making or has the right to make of the

299. KAN. STAT. ANN. § 82a-707(a) (1984).
300. For discussion of the regulation, see *supra* note 169 and accompanying text.
301. *See infra* text accompanying notes 400-05.
302. KAN. STAT. ANN. § 82a-702 (1984).

> water . . . . The change is an appropriate one for the legislature to make. Individuals do not live alone in isolated areas where they, at their will, can assert all of their individual rights without regard to the effect upon others.[303]

As at common law, the doctrines of usufruct and beneficial use are inextricably linked under the WAA. Since the "interest of the people" is the core of the statute, it follows that the use of water must "benefit" the people.[304]

The WAA incorporates this public element into the permit granting process by requiring the Chief Engineer to find that a proposed appropriation will not "prejudicially and unreasonably affect the public interest."[305] However, unlike provisions that permit monitoring of the ongoing individual aspects of beneficial use,[306] the Act on its face establishes no mechanism to ensure that appropriation rights "remain subject to [the public aspects of] the principle of beneficial use."[307] I believe, however, that the WAA implicitly contains the oversight power necessary to ensure that the level of irrigation remains consistent with the public interest. Initially, to support this conclusion, I offer the analysis presented in the recent path-breaking article *Waste in Western Water Law* by Steven Shupe.[308] Although written in the context of the individual aspects of the beneficial use doctrine, Shupe's thesis applies with equal force to its public interest side.

2. *The Privilege Theory*

Shupe outlines the history of the beneficial use standard in water law of the Western United States. He begins by explaining that no state has officially approved of the waste of water; however, in the initial stages of irrigation development, large-scale inefficiency was the inevitable by-product of earthen conveyance ditches and flood irrigation, the only techniques available to the irrigator. Because restricting these inefficient techniques would have stifled land development, courts generally put

---

303. Williams v. City of Wichita, 190 Kan. 317, 336, 374 P.2d 578, 592 (1962)(quoting State *ex rel.* v. Knapp, 167 Kan. 546, 555, 207 P.2d 440, 447 (1949))(upheld the Act's constitutionality as to riparian rights); *see also* F. Arthur Stone & Sons v. Gibson, 230 Kan. 224, 231, 630 P.2d 1164, 1170 (1981).

304. Both the "reasonable use" and "beneficial use" doctrines had public interest components. Maloney, Capehart & Hoofman, *supra* note 295, at 253-74. While in Kansas the component is implicit, some states make it explicit. In North Dakota, " 'Beneficial use' means a use of water for a purpose consistent with the best interests of the people of the state." N.D. CENT. CODE § 61-04-01.1 (1985). In South Dakota the term means "any use of water within or without the state, that is reasonable and useful and beneficial to the appropriator, and at the same time is consistent with the interests of the public of this state in the best utilization of water supplies." S.D. CODIFIED LAWS § 46-1-6(6) (1987).

305. KAN. STAT. ANN. § 82a-711 (1984).

306. *See infra* text accompanying notes 364-66.

307. KAN. STAT. ANN. § 82a-707(a) (1984).

308. Shupe, *supra* note 173.

their stamp of approval on them by labeling them customary.[309] Consequently, since a water right vested by virtue of use under the common-law prior appropriation doctrine, irrigators could argue they were forever entitled to the volume of water first used.

However, as the number of water users increased, some courts began to hold the old wasteful practices were only privileges,[310] subject to adjustment as advances in technology increased efficiency.

> This privilege concept departs sharply from the popular notion that an appropriator has a vested right to a specified volume of water through perpetuity. However, such references to a fixed quantity of water as the protectable interest fail to take into account the true nature of a water right. *Senior rights holders are entitled to only the beneficent use of the water, not to unqualified ownership of the resource.* As traditional irrigation practices of one era become wasteful when judged by the standards of a later time, so too can the magnitude of a protectable water right change. Modern courts are not bound by century-old interpretations of beneficial use and of what constitutes waste of precious water resources.[311]

I believe the WAA embodies Shupe's thesis. His analysis is consistent with the usufructuary nature of water rights and with the public interest aspects of the beneficial use doctrine. He cogently demonstrates that as conservation on the Ogallala has become and continues to become more important to the state, irrigators can no longer claim an absolute right to specific quantities of water. Appropriation rights "remain subject to the principle of beneficial use"[312] and may be restricted when they become incompatible with the larger public interest.

This conclusion is indirectly corroborated by a statement made recently by Mr. Joseph Harkins, Director of the Kansas Water Office. At a

---

309. *Id.* at 491, 495; *see also* J. SAX, *supra* note 173, at 271-84; Maloney, Capehart & Hoofman, *supra* note 295, at 253-74; Pring & Tomb, *supra* note 173, at 25-17 to 25-20.

310. *See, e.g.*, Hough v. Porter, 51 Or. 318, 98 P. 1083 (1909); *see also, e.g.*, Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 3 Cal. 2d 489, 547, 45 P.2d 972, 997 (1935); Weibert v. Rothe Bros., 200 Colo. 310, 618 P.2d 1367 (1980); Bennett v. Nourse, 22 Idaho 249, 125 P. 1038 (1912); Tudor v. Jaca, 178 Or. 126, 164 P.2d 680 (1946), *modifying* 51 Or. 318, 95 P. 732 (1908), *aff'd on reh'g*, 51 Or. 318, 102 P. 728 (1909); *In re* Water Rights, 10 Utah 2d 77, 348 P.2d 679 (1960); Basin Elec. Power Coop. v. State Bd. of Control, 578 P.2d 557 (Wyo. 1978); Budd v. Bishop, 543 P.2d 368 (Wyo. 1975).

311. Shupe, *supra* note 173, at 496 (emphasis added). Shupe goes on to discuss cases upholding the downward adjustment of appropriation rights in situations of inefficient use, and he argues for the creation of a program to require irrigators to increase the efficiency of their operations. *See infra* text accompanying notes 388-96.

312. KAN. STAT. ANN. § 82a-707(a) (1984). A requirement that private landowners perform public responsibilities has long been a feature of Kansas law. *See* KAN. STAT. ANN. § 2-2002 (1984). Passed in the aftermath of the Dust Bowl, the statute provides:

> DUTY OF LANDOWNER. To conserve the natural resources of the state, and to prevent the injurious effects of dust storms, it is hereby made the duty of the owner of real property in this state to prevent dust blowing therefrom, as nearly as that can be done, by planting of perennial grasses, shrubs, or trees, or annual or biennial crops, or by cultivation at such times and in such manner as will prevent or minimize erosion of the soil and dust blowing therefrom.

Id. On the general topic of private property's social function, see DUGUIT, LES TRANSFORMATIONS GENERALES DU DROIT PRIVE, *cited in part* in K. KARST, LATIN AMERICAN LEGAL INSTITUTIONS: PROBLEMS FOR COMPARATIVE STUDY 499-500 (1966).

legislative hearing on the 1986 water conservation act,[313] Mr. Harkins was asked whether the Chief Engineer could prohibit the use of water to grow a water-intensive crop such as corn, and instead, designate that it be used to grow another crop such as milo. He answered the state should probably not get into the business of telling people what to grow, but it would be appropriate to negotiate the matter with the applicant, or to grant only enough water to grow milo on the designated tract.

The import of Mr. Harkins' remarks is that given aquifer depletion problems, the production of water-intensive crops is no longer a beneficial use in the public interest. If the Chief Engineer has the ability to recognize this reality at the permitting stage, it logically follows that the same recognition can also be applied to existing appropriations, which are subject to ongoing public interest constraints. I generally agree with Mr. Harkins' conclusion that it is better policy to control the use of water resources than to interfere with the choice of what crop to grow.[314] Nonetheless, his statement, admittedly made with regard to requests for new appropriations, supports my interpretation that the Chief Engineer has the authority to adjust existing rights when they are not being used to benefit the public interest. This conclusion, reached under the WAA, is further reinforced by the Intensive Groundwater Use Control Area Act (IGUCAA), which permits adjustments.

---

313. Act of April 24, 1986, ch. 392, 1986 Kan. Sess. Laws 2031-40.

314. Although I share Mr. Harkins' concern about the appropriateness of telling farmers what crops they can raise, I believe an argument exists that growing water-intensive crops, such as corn, in a water-scarce area amounts to waste. Waste is normally thought to encompass inefficient uses, but the term also has a comparative component: the exploitation of a resource for an inferior use. Weiss, *supra* note 72, at 516 & n.108 (Weiss links the doctrine to that of nuisance, which focuses on uses of land that are unreasonable in the context of surrounding uses); *see also* United States v. Alpine Land & Reservoir Co., 697 F.2d 851, 854 (9th Cir. 1983)(water uses must not be unreasonable, considering alternative uses); Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 3 Cal. 2d. 489, 45 P.2d 972, 1007 (1935)(irrigating heavily in winter to kill gophers amounted to waste); State v. McLean, 62 N.M. 264, 308 P.2d 983 (1957)(waste occurred when an artesian well was permitted to flow 24 hours a day); *In re* Water Rights, 134 Or. 623, 664-68, 286 P. 563, 577-78 (1930)(waste occurred where stream water used to carry off a power plant's debris would have otherwise irrigated 1600 acres). The activities in the California and New Mexico cases were clearly beyond even the broadest definition of irrigation, whereas watering corn is clearly within the definition. Analogizing to the Oregon case, however, the alternative uses that could be made of the water in an intergenerational sense, make its use to irrigate corn unreasonable.

An even better analogy can be drawn to a statute regulating the use of natural gas that was upheld by the United States Supreme Court. Walls v. Midland Carbon Co., 254 U.S. 300 (1920). Wyoming prohibited the consumption of natural gas when the heat potential of the gas was not utilized, for example, in the production of carbon black; such energy-destructive uses were declared to be "wasteful and extravagant." *Id.* at 309. Rejecting the carbon company's argument that the statute deprived it of property and impaired an existing contract, the Supreme Court held the regulation to be a valid exercise of the state's power to protect natural resources. The Court emphasized the fact that the company's use of 1000 cubic feet of gas resulted in the production of only one and three-fourths pounds of carbon black and two-tenths gallon of gasoline, an efficiency rate of only 2.8% to 4.6%. *Id.* at 319. It also noted evidence that if production were to continue at full capacity the entire gas field would be used up in 90 days, whereas if the gas were conserved it would meet the industrial and domestic needs of two towns for 10 years. *Id.* at 321. It follows by analogy that a regulation prohibiting corn production on the grounds that its inefficient use of water and capacity for rapid aquifer depletion make it a "wasteful and extravagant" activity, would likewise be constitutional.

3. *Intensive Groundwater Use Control Area Act*

Enacted in 1972 as an amendment to the GMA, the IGUCAA[315] authorizes the Chief Engineer, in areas outside a GMD, to initiate proceedings for the designation of a "control area" when there is reason to believe that water levels are declining excessively, withdrawals are equal to or in excess of recharge, or preventable waste is occurring.[316] If as a result of a public hearing the Chief Engineer finds one or more of the above conditions and the "public interest" requires corrective action, a control area shall be formally designated. The designation order may close the area to further appropriation; declare a limit on total withdrawal that will be apportioned so far as possible according to priority of right; reduce the permissible withdrawal from particular wells or by particular appropriators; specify a system for the rotation of water use; or mandate other corrective action required by the public interest.[317] As to areas within a GMD, which include most of the region overlying the Ogallala, the Chief Engineer can ultimately make the same type of findings and issue the same type of order, but this ability is restricted because the designation process must be initiated within the GMD.[318]

In authorizing the Chief Engineer to adjust water rights, I believe the legislature implicitly recognized the privilege doctrine. In essence it declared: Because water rights "remain subject to the principle of beneficial use,"[319] they are and always have been subject to adjustment when the public interest so demands. This conclusion is bolstered by two observations. First, the Act was passed not as a free-standing statute, but as an amendment to the GMA, which in turn is explicitly subject to the public interest constraints of the WAA.[320] Second, questions the Chief Engineer must evaluate in deciding whether to designate a control area—is excessive withdrawal or waste occurring—approximate questions which must be considered in determining whether to grant a permit.[321]

Even if the IGUCAA is viewed differently, as a grant of new power to the Chief Engineer rather than a formal recognition of existing power, it amounts merely to a revision of the definition of the public interest and is the legislative equivalent of the common-law evolution described by Shupe. As courts are not required to recognize wasteful irrigation practices, modern legislatures are not bound to enforce the legacy of a developmental ethic that is now ecologically unacceptable. The legislature must be free to adjust prior appropriations when they conflict with the

315. KAN. STAT. ANN. §§ 82a-1036 to -1040 (1984).
316. *Id.* § 82a-1036.
317. *Id.* §§ 82a-1037 to -1038.
318. *Id.* § 82a-1036.
319. *Id.* § 82a-707(a).
320. *Id.* § 82a-1020.
321. *Id.* § 82a-711. For discussion of the permit granting process, see *supra* text accompanying notes 144-50.

"heart" of the water regulation scheme: the public interest. Since the crisis on the Ogallala Aquifer presents a grave threat to the people of Kansas, not only is the state empowered to modify existing water rights, it has an obligation to do so.

B. *The Constitutionality of Modification*

There are two impediments—one real, the other illusory—that limit the state's power to adjust existing water rights on the Ogallala. The actual barrier is that in GMDs, which occupy all but a small portion of the area overlying the aquifer, the Chief Engineer cannot initiate control area proceedings, but must wait for the district to act.[322] Fortunately, the legislature can remove this barrier.

The "illusory" barrier is the perception that modification of existing rights constitutes a taking in violation of the fourteenth amendment. Because this barrier may inhibit the legislature from amending the IGUCAA,[323] it is important to establish the falsity of that perception.[324] The illusion is created by the WAA's definitional sections which provide that a water right, which entitles one "to divert from a definite water supply a specific quantity of water . . . and to apply [it] to a specific beneficial use," constitutes a "property right appurtenant to and severable from the land on or in connection with which the water is used."[325] Thus, the statute

---

322. *See supra* note 318 and accompanying text.

323.

> The fear of the taking issue is stronger than the taking clause itself. It is an American fable or myth that a man can use his land any way he pleases regardless of his neighbors. The myth survives, indeed thrives, even though unsupported by the pattern of court decisions. Thus, attempts to resolve land use controversies must deal not only with the law, but with the myth as well.

F. BOSSELMAN, D. CALLIES & J. BANTA, THE TAKING ISSUE 318-19 (1973).

324. To date, the Chief Engineer has designated six use control areas; only one is in the area overlying the Ogallala. The one control area, in GMD No. 3, consists of a strip four miles wide along a 150-mile stretch of the Arkansas River. Petterson, *Kansas limits pumping of water along Arkansas River*, Kansas City Times, Oct. 1, 1986, at 131, col. 1. In only one of the six IGUCAs, have existing appropriations been reduced (a 26-mile stretch of the Smoky Hill River, downstream from Cedar Bluff Reservoir), and that reduction is only temporary. The Smoky Hill order was not challenged in a timely fashion; thus, as to the takings issue, the constitutionality of the IGUCAA has never been litigated. Rolfes Conversation I, *supra* note 182.

The constitutionality of the legislature's action in passing the GMA and IGUCAA was challenged in a case attacking a well registration requirement in a control area in and around the City of Hays. The district court summarily found the provisions in question were no more onerous than those upheld in *Williams v. City of Wichita*, and *F. Arthur Stone & Sons v. Gibson*. For discussion of these cases, see *infra* text accompanying notes 342-67. Accordingly, the court found the acts constitutional. Basgall v. State of Kansas, No. 85C-220 (Ellis County, Kan., Feb. 10, 1987).

325. KAN. STAT. ANN. § 82a-701(f), (g) (1984). The two subsections provide in full:

> (f) "Appropriation right" is a right, acquired under the provisions of article 7 of chapter 82a of the Kansas Statutes Annotated and acts amendatory thereof and supplemental thereto, to divert from a definite water supply a specific quantity of water at a specific rate of diversion, provided such water is available in excess of the requirements of all vested rights that relate to such supply and all appropriation rights of earlier date that relate to such supply, and to apply such water to a specific beneficial use or uses in preference to all appropriations right of later date.
>
> (g) "Water right" means any vested right or appropriation right under which a person may lawfully divert and use water. It is a real property right appurtenant to and

facially seems to indicate that any uncompensated downward adjustment of a water right would constitute a taking. However, further analysis reveals the inadequacy of that conclusion.

1. *The Takings Analysis*

a. *The Scope of Appropriation Rights*

In *United States v. Willow River Power Co.*,[326] the United States Supreme Court admonished: "Rights, property or otherwise, which are absolute against all the world are certainly rare, and water rights are not among them."[327] The Court further stated, "[W]e cannot start the process of decision by calling a claim 'a property right'; whether it is a property right is really the question to be answered."[328] The statement is made in a case dealing with the unique navigational servitude doctrine,[329] but it also has broader meaning. Put another way, the Court is saying that in order to determine whether property has been "taken" it is first necessary to consider carefully the scope of the right involved. A critical examination of the scope of the appropriation rights held by Kansas irrigators reveals they are less absolute than their statutory definition implies when read in isolation.

We have already seen that water rights obtained under the WAA are usufructuary in nature. The water itself is a common resource, and appropriation rights "do not constitute ownership of . . . water."[330] In other words, irrigators do not own a particular quantity of water but rather a permit which gives them access to the use of water.[331] I ac-

---

severable from the land on or in connection with which the water is used and such water right passes as an appurtenance with a conveyance of the land by deed, lease, mortgage, will, or other voluntary disposal, or by inheritance.

Id.

Water rights include vested rights, common-law rights representing actual uses that predate the WAA and exempt from its permit requirement. *Id.* After July 1, 1980, all vested rights that had not been registered with and approved by the Chief Engineer ceased to exist. *Id.* § 82a-704(a). From a stewardship or intergenerational justice perspective, the origin of water rights that require adjustment does not matter. Nevertheless, because the WAA provides special protection for vested rights, their modification might involve questions different than those raised by the adjustment of appropriation rights. Such questions are beyond the scope of this Article, in large measure because vested rights predate the massive expansion of irrigation that has led to the crisis on the Ogallala Aquifer.

326. 324 U.S. 499 (1945).

327. *Id.* at 510.

328. *Id.* at 502-03.

329. In *Willow River*, the construction of a dam on a navigable stream raised its natural high water mark, thereby reducing the power company's operating head at a plant on a nonnavigable tributary. The Supreme Court held the company did not have a constitutionally protected property right in the high water mark. Because the company's riparian rights were subject to the federal government's navigational servitude, Congress, in acting to improve navigation, could restrict those rights. The navigational servitude is a special form of the public trust doctrine. *Id.* For discussion of the public trust doctrine, see *supra* note 132.

330. KAN. STAT. ANN. § 82a-707(a) (1984).

331. Appropriation rights thus differ from common-law property rights. At common law, those who exercised their right of access by capturing water and applying it to a beneficial use obtained a personal right in the water itself. "[Water] belongs to the overlying owner in a limited sense, that is, he has the unqualified right to capture and control it in the quantity desired and with an immunity to

knowledge that it is difficult to harmonize the Act's usufructuary structure with its definitional provisions affording appropriators a property right in specific quantities of water.[332] However, three factors militate against altering the structure by reading the latter sections in isolation. First, in amending the WAA to include the definitional provisions the 1957 Kansas Legislature's intent was to ensure the transferability of water rights.[333] The detailed legislative history[334] does not consider the question of the state's power to reduce the amount of an appropriation, nor does it suggest any intent to alter the WAA's overall usufructuary structure. Second, as we shall see later in this subsection, the Kansas Supreme Court continues to characterize water rights as usufructuary in nature.[335] Third, the definitional sections by their own terms provide that the specific quantity of water in question must be put to a beneficial use.[336]

The latter restriction is but a restatement of the limitation attached to all appropriation rights by section 703: water may be appropriated

---

his neighbors for doing so. When it is reduced to his possession and control, it ceases to be percolating water and becomes his personal property." Williams v. City of Wichita, 190 Kan. 317, 330, 374 P.2d 578, 588 (1962); *accord* Village of Tequesta v. Jupiter Inlet Corp., 371 So. 2d 663, 667 (Fla. 1979). In short, the use of water was the vesting event for a common-law water right.

Under the WAA, by contrast, access to water can be had only through a permit from the Chief Engineer. KAN. STAT. ANN. § 82a-728 (1984). The granting of a permit and certificate of appropriation thus constitutes the vesting event under the Act. For discussion of certificates, see *supra* note 151. Appropriation rights also differ from common-law rights in that an appropriation right "[does] not constitute ownership of . . . water." KAN. STAT. ANN. § 82a-707(a) (1984). An appropriator thus "owns" not a quantity of water but only a right to use water that takes the form of a permit. As discussed at length in the text, appropriation rights are inherently qualified by the doctrine of usufruct as well as the public interest and individual aspects of the doctrine of beneficial use. *See supra* text accompanying notes 288-307. For discussion, see notes 326-40, 389-406.

332. *Id.* § 82a-701(g). For the full text of the definitional sections, see *supra* note 325.

333. *See* E. SHURTZ, REPORT ON THE LAWS OF KANSAS PERTAINING TO THE BENEFICIAL USE OF WATER 83-84 (Kansas Water Resources Bd. Bulletin No. 3, 1956).

> It would be unwise to treat an appropriation right, or any other water right, as a mere nontransferable, personal right, or any other water right, as a mere nontransferable, personal right. Death, bankruptcy, disability, and financial reverses would, under such a theory, destroy investments and impair development. Only corporate persons could safely undertake costly development. Others would have to risk their savings upon their continued health and fortune. Moreover, they would have to do so to the prejudice of their heirs and legatees.
>
> An appropriator deserves better treatment. His right deserves greater protection. Surely it should have the standing of real property with the attending attributes of real property. These attributes, of course, should include flexibility with regard to assignability. They should also include severability, inheritability, and so on. Complex societal, as well as personal, needs so require.

Id. at 84.

334. *See* E. SHURTZ, *supra* note 333.

335. *See infra* text accompanying notes 342-60.

336. For the text of the provisions, see *supra* note 325. One who obtains a permit from the Chief Engineer has the right to construct works for the diversion of water and to begin to put it to beneficial use. KAN. STAT. ANN. § 82a-712 (1984). However, an appropriation right is not completely perfected until the Chief Engineer inspects the works and issues a certificate of appropriation. *Id.* § 82a-714. Certificates are issued only for the amount of water "actually applied" to a beneficial use, even if the initial permit allowed the diversion of a greater quantity. KAN. ADMIN. REGS. § 5-3-8 (1983). Beneficial use is thus the key to quantification. It follows that water no longer applied to a beneficial use or applied in excess quantity ceases to fall within the definition of an appropriation right.

only for beneficial use.[337] The Chief Engineer is authorized to grant permits only for those uses that are consistent with the public interest "heart"[338] of the Act. Moreover, the rights constantly "remain subject to the principle of beneficial use";[339] as explained in the discussion of the privilege doctrine, uses once considered appropriate may lose their beneficial status as water supplies decrease.[340] In short, the doctrine of beneficial use, like the doctrine of usufruct, inherently circumscribes the scope of appropriation rights.

In summary, appropriation rights have never been absolute. Notwithstanding the protection granted specific quantities of water by the definitional sections, I believe appropriation rights remain usufructuary in nature and qualified by the doctrine of beneficial use from the time they are granted. The authority to adjust appropriation rights given to the Chief Engineer by the IGUCAA reflects the limited nature of those rights. Extension of the Act to permit the Chief Engineer to initiate control proceedings within GMDs would likewise be consistent with the limited scope of those rights.

b. *The Takings Cases*

That a property right is limited in nature does not, of course, necessarily mean that a modification of the right will be constitutional; determining the scope of a right is only the first step in the takings analysis set out in *United States v. Willow River*.[341] However, in the case of appropriation rights, I believe it is a relatively short step from the determination that they are limited by the doctrines of usufruct and beneficial use to the conclusion that a reduction in their quantity, based on the need to conserve the Ogallala Aquifer, does not constitute a taking. The Kansas Supreme Court has relied upon the limited nature of water rights in upholding the constitutionality of the WAA and GMA; it should therefore uphold the IGUCAA on similar grounds. This conclusion derives primarily from two landmark Kansas cases, *Williams v. City of Wichita*,[342] and *F. Arthur Stone & Sons v. Gibson*.[343]

In *Williams*, the Kansas Supreme Court upheld the constitutionality of the WAA as it pertains to groundwater.[344] The court concluded the Act did not illegally deprive the landowner of the water underlying his property when it awarded first priority to those receiving a permit from

337. KAN. STAT. ANN. § 82a-703 (1984).
338. *See supra* text accompanying note 303.
339. KAN. STAT. ANN. § 707(a) (1984).
340. *See supra* text accompanying notes 309-14.
341. 324 U.S. 499 (1945); *see supra* text accompanying note 328.
342. 190 Kan. 317, 374 P.2d 578 (1962).
343. 230 Kan. 224, 630 P.2d 1164 (1981).
344. As to riparian rights, the Act's constitutionality was upheld in State *ex rel.*, Emery v. Knapp, 167 Kan. 546, 207 P.2d 440 (1949).

the Chief Engineer. The court reasoned that the English doctrine of "absolute ownership," which Kansas purportedly followed, was in reality a fiction.[345] Under the absolute ownership theory, landowners hold title to the water underlying their property; as long as they act without malice, landowners have the right to withdraw an unlimited quantity of water from beneath their land. In reality, however, a landowner could drain water from beneath neighboring land because there is no hydrological way to confine withdrawals to the particular tract on which a well is sunk. Accordingly, the court reasoned that since the landowners could lose water to neighbors who pumped before they did, landowners had no property interest in the corpus of the water beneath their land. "There is a right of use as it passes but there is no ownership in the absolute sense."[346]

In other words, water belonged to landowners only in the limited usufructuary sense that they had control over access to it; they had an unqualified right to sink a well and thus to capture water and apply it to a beneficial use. According to the court, it was this right and not ownership which the WAA affected. The Act transferred control over access to water from the individual to the state; whereas the irrigator previously perfected a water right by using the resource, under the WAA the irrigator can only perfect a water right by obtaining a permit and a

---

345. *Williams*, 190 Kan. at 325-31, 374 P.2d at 585-89 (1962).

346. *Id.* at 330, 374 P.2d at 588; *accord* Town of Chino Valley v. City of Prescott, 131 Ariz. 78, 82-84, 638 P.2d 1324, 1328-30 (1981); Village of Tequesta v. Jupiter Inlet Corp., 371 So. 2d 663, 667-68 (Fla. 1979); Baeth v. Hoisveen, 157 N.W.2d 728, 732 (N.D. 1968); Knight v. Grimes, 80 S.D. 517, 523-27, 127 N.W.2d 708, 711 (1964).

The Florida Supreme Court states the principle as follows:

> Ancient law gave no special consideration to ground water, treating all water like the air, the sea, and wild animals, as the property of no one or the property of everyone. . . . Technological ignorance about the existence, origin, movement and course of percolating ground waters resulted in the so-called "English rule" which essentially allowed a land owner to take or interfere with percolating waters underlying his land, irrespective of any effects his use might have on ground water underlying his neighbors' lands . . . . With the growth of hydrological capabilities in pumping technology, the English rule was repudiated in most American jurisdictions . . . .
>
> The common-law concept of absolute ownership of percolating water while it is in one's land gave him the right to abstract from his land all the water he could find there. On the other hand, it afforded him no protection against the acts of his neighbors who, by pumping on their own land, managed to draw out of his land all the water it contained. Thus the term "ownership" as applied to percolating water never meant that the overlying owner had a property or proprietary interest in the corpus of the water itself.
>
> This necessarily follows from the physical characteristic of percolating water. It is migratory in nature and is a part of the land only so long as it is in it. There is a right of use as it passes, but there is no ownership in the absolute sense. It belongs to the overlying owner in a limited sense, that is, he has the unqualified right to capture and control it in a reasonable way with an immunity from liability to his neighbors for doing so . . . .
>
> The right of the owner to ground water underlying his land is to the usufruct of the water and not to the water itself. The ownership of the land does not carry with it any ownership of vested rights to underlying ground water not actually diverted and applied to beneficial use.

Village of Tequesta, 371 So. 2d at 666-67 (citations omitted).

certificate.[347]

The court then rejected the argument that the transfer of control constituted a taking:

> It is evident that the legislature, in placing into effect the committee's recommendations, exercised the police power of the state in determining its policy that "all water within the state of Kansas is hereby dedicated to the use of the people of the state, subject to the control and regulation of the state in the manner herein provided" . . . and in providing that . . . "all waters within the state may be appropriated for beneficial use . . . ."[348]
>
> . . . .
>
> . . . "The change is an appropriate one for the legislature to make. Individuals do not live alone in isolated areas where they, at their will, can assert all of their individual rights without regard to the effect upon others."[349]
>
> . . . .
>
> . . . *We hold that it was within the competency of the legislature* to define the "vested rights" of common-law water users, or *to establish a rule as to when and under what conditions and to what extent a vested right should be deemed to be created in such a water user.* . . . The effect of the common-law doctrine in Kansas under the Act is little more than legal fiction. *The right of the plaintiff to ground water underlying his land is to the usufruct of the water and not to the water itself.* Legislation limiting the right to its use is in itself no more objectionable than legislation forbidding the use of property for certain purposes (*Euclid v. Ambler Co.*; *Mugler v. Kansas*).[350]
>
> . . . .
>
> . . . The suggestion that [Williams] has such rights in ground water underlying his land as must be acquired by eminent domain is untenable . . . .[351]

In short, *Williams* accords the legislature broad-sweeping powers with which to regulate the waters of the state. The decision's rationale alone, however, is not broad enough to encompass the power to enact the IGUCAA. Although Williams could not perfect a statutory water right by sinking a well after the passage of the WAA, the court was careful to emphasize that he could obtain a common-law water right in that man-

---

347. For discussion of the difference between common-law water rights and appropriation rights under the WAA, see *supra* note 331.

348. *Williams*, 190 Kan. at 333-34, 374 P.2d at 591.

349. *Id.* at 336, 374 P.2d at 592 (quoting State, *ex rel.* v. Knapp, 167 Kan. 546, 555, 207 P. 2d 440, 447 (1949)).

350. *Id.* at 339, 374 P.2d at 594-95 (citations omitted)(emphasis added).

351. *Id.* at 341, 374 P.2d at 595; *accord* Town of Chino Valley v. City of Prescott, 131 Ariz. 78, 82-84, 638 P.2d 1324, 1328-30 (1981); Village of Tequesta v. Jupiter Inlet Corp., 371 So. 2d 663, 669-72 (Fla. 1979); Crookston Cattle v. Minnesota Dep't of Natural Resources, 300 N.W.2d 769, 774-75 (Minn. 1980); Baeth v. Hoisveen, 157 N.W.2d 728, 732-34 (N.D. 1968); Knight v. Grimes, 80 S.D. 517, 523-27, 127 N.W.2d 708, 711-14 (1964).

In upholding Arizona's complex new water regulation act, the Arizona Supreme Court stated: "Legislatures of various states have from time to time abolished the prevailing uses of groundwater and substituted other plans for its use. State courts have uniformly rejected the idea that groundwater penetrating through the soil may not be limited and regulation must be acquired by eminent domain. . . . *Williams v. City of Wichita*." *Town of Chino Valley*, 131 Ariz. at 83, 638 P. 2d at 1329 (other citations omitted).

ner even though it would be subordinate to rights obtained through the permit process.[352]

Compliance with the WAA is no longer voluntary. The qualified right of access contained in the original Act was eliminated in 1977 by the passage of section 728, which makes it a crime to utilize water, other than for domestic purposes, without a permit.[353] This provision was upheld by the Kansas Supreme Court in *F. Arthur Stone & Sons v. Gibson*.[354] In *Stone*, the plaintiffs' applications for permits were denied because the proposed appropriation exceeded the depletion formula of GMD No. 3.[355] When the plaintiffs sank two wells, the Chief Engineer issued a cease and desist order pursuant to the criminal provision. In challenging the constitutionality of the provision, the plaintiffs relied in part on *Williams*, which emphasized the noncompulsory nature of the WAA.

The *Stone* court rejected the argument, however, stating that *Williams* merely explained the WAA as it then existed; it did not hold that a mandatory permit procedure would be unconstitutional.[356] After setting out decisions from other states upholding mandatory permit requirements,[357] the court held that section 728 is an extension of the original WAA.

> K.S.A. 82A-728 does not launch the Division of Water Resources or its Chief Engineer into a new area of regulation. The original act declared all the water within the state to be dedicated to the use of the people subject to the State's control and regulation. The requirement that an appropriator must have a permit before appropriating is merely an extension of the regulations originally promulgated. The Chief Engineer was authorized in K.S.A. 82a-706 to enforce the laws pertaining to the beneficial use of water and to "control, conserve, regulate, allot and aid in the distribution of water resources of the state . . . ." Those general legislative grants of authority are a part of the original act which was declared constitutional in . . . *Williams*. Nothing has changed to cause this court to contemplate reversal.[358]

To support its conclusion that reversal is inappropriate, the court took cognizance of the reality that water is in even shorter supply today. Although it did not use the term, the court pointed out that there is a crisis on the Ogallala Aquifer.

---

352. *Williams*, 190 Kan. at 338, 374 P.2d at 594.

353. KAN. STAT. ANN. § 82a-728 (1984).

354. 230 Kan. 224, 630 P.2d 1164 (1981).

355. For discussion of depletion formulas, see *supra* text accompanying notes 201-03.

356. *Stone*, 230 Kan. at 234, 630 P. 2d at 1172.

357. Mandatory permit laws have been upheld by courts. *See* Crookston Cattle v. Minnesota Dep't of Natural Resources, 300 N.W.2d 769, 774-75 (Minn. 1980); Griffin v. Westergard, 96 Nev. 627, 631, 615 P. 2d 235, 237 (1980); Laramie Rivers Co. v. Le Vasseur, 65 Wyo. 414, 431, 202 P.2d 680, 686 (1949); Wyoming Hereford Ranch v. Hammond Packing Co., 33 Wyo. 14, 27-36, 236 P. 764, 767-70 (1925). The court cites a number of other cases from Western States that uphold a variety of other mandatory features of water appropriation acts.

358. *Stone*, 230 Kan. at 236, 630 P.2d at 1173-74.

> Water has become more scarce. Its use has multiplied dramatically with the growth of intensified agriculture in western Kansas. The rate of diversion is approximately ten times the rate of recharge. Irrigation is mining water from the Ogallala aquifer. The consequences of increased irrigation are drastic. The legislature recognized the threat by passage of the Act, the State Water Plan . . . and the authorization of Groundwater Management Districts. . . . According to a management program booklet prepared by District No. 3 in 1978, and filed with this case, 1,600,000 acres were irrigated from about 7800 large capacity wells ranging from 100 to over 3,000 gallons per minute, withdrawing 3,000,000 acre feet of water per year. The increased demand for water in recent years has placed a heavy demand on the groundwater supplies. . . . The major waterbearing formation is the Ogallala aquifer underlying most of the district.[359]

Finally, in upholding the legislative response to the crisis the court returned to the principle it has stated repeatedly: because water rights are qualified in nature, their restriction does not constitute a taking.

> In *Williams . . . we held the landowner has no absolute right to the water under his land, only a right to the use of it.* We held water use regulation is an appropriate exercise of the state's police power. The provisions of K.S.A. 82a-728 comport with that exercise of authority. The statute does not effect an unconstitutional taking of property.[360]

I believe *Williams* and *Stone*, taken together, conclusively establish that the Chief Engineer's authority to adjust existing rights under the IGUCAA is constitutional. In those cases, the conclusion that no taking had occurred was explicitly based on the usufructuary nature of water rights; the legislature can regulate the rights because they are limited in scope. In addition, the court described section 728 as an extension of the WAA, and characterized it as a conservation measure—passed in response to the same threat of water scarcity that earlier led to the enact-

---

359. *Id.* at 236, 630 P.2d at 1174.

360. *Id.* at 237, 630 P.2d at 1174. Although the IGUCAA was not at issue in *Stone*, I believe the case effectively establishes the constitutionality of that Act's grant of authority to the Chief Engineer to close an area to future development. Factually, *Stone* arose in a fully appropriated area (measured by the GMD depletion formula). Therefore it is clear that the Chief Engineer has the authority to prohibit individual wells in that context, even without reference to the IGUCAA. By contrast, since the Chief Engineer cannot rely on a depletion formula to restrict development in an area not fully appropriated, the open question is whether such action can be taken pursuant to the IGUCAA. The answer depends on a statutory analysis. Since the constitutional question raised by shutting off development in a control area is no different than the one raised by denying an individual permit, *Stone* indirectly makes clear that the legislature could authorize the Chief Engineer to issue such an area-wide order; the question is whether the legislature has done so.

I believe the IGUCAA grants that power. In fact, prior to the Act's passage, the Chief Engineer was authorized by the WAA to deny individual permits when an area outside a GMD was fully appropriated (as measured by appraisal of its carrying capacity, rather than a GMD depletion formula). *See* KAN. STAT. ANN. § 82a-711 (1984). Since the Chief Engineer's authority could be used on an area-wide basis (if full appropriation was widespread), the intent behind the IGUCAA must have been to do something more than grant area-wide powers. The most logical explanation is that the legislature, invoking the "public interest," intended to empower the Chief Engineer to conserve water in problem areas before they were fully appropriated. That conclusion is supported by the broad language of § 1036, which permits use control areas anywhere "[g]roundwater levels are declining or have declined excessively." *Id.* § 82a-1036. It follows that since the IGUCAA is an amendment to the GMA, the power to issue such an order extends to use control areas within GMDs.

ment of the Groundwater Management and Water Resource Planning Acts. Appropriation rights under the WAA, like the common-law rights at issue in *Williams* and *Stone*, are usufructuary in nature; and clearly, the IGUCAA, an amendment to the GMA, is a further recognition of the deepening crisis and the need to conserve water. Thus, as a conservation measure that extends the GMA by authorizing the modification of usufructuary rights, the IGUCAA also represents a valid exercise of the police power.[361]

To be certain, *Williams* and *Stone* adjudicated control over access to unused water. Thus, it might be argued the two cases do not support the proposition that existing rights may be adjusted downward.[362] The argument, however, miscomprehends the true nature of the cases. Prior to 1945 landowners may not have owned the water beneath their land, but did have an absolute right to sink a well, and capture and use water. This common-law right of access was partially restricted by the passage of the WAA, upheld in *Williams*, and completely abrogated by the enactment of section 728, upheld in *Stone*. Yet, in neither case did the court hold there was a taking; it was self-evident to the court that both enactments were valid exercises of the police power. It necessarily follows that a mere partial adjustment in the quantity of water that can be pumped under an existing permit is not a taking.

Unlike the landowners affected in Williams and Stone, irrigators whose quantities are modified would not lose their right of access, which today takes the form of permit. They retain their property right—the right to use water; only the amount is affected.[363] The reduction in quantity they would experience translates, at worst, into a diminution in the value of their land and in the size of their crops. Yet, economic impact alone

361. The conclusion is supported by Basgall v. State of Kansas, No. 85C-220 (Ellis County, Kan., Feb. 10, 1987). For discussion of *Basgall*, see *supra* note 324.

362. *See* Kelly, *Management of Groundwater Through Mandatory Conservation*, 61 DENVER L.J. 1, 15-16 (1983).

363. For discussion of the difference between common-law water rights and appropriation rights under the WAA, see *supra* note 331. Implicit in this analysis is the conclusion that in adjusting quantities the Chief Engineer is not bound rigidly by the prior appropriation rule of "first in time, first in right," under which senior appropriators are entitled to their full allotments before junior appropriators receive any water. *See supra* text accompanying notes 151-53. The IGUAA so provides. The Act authorizes reductions prorated, so far as possible, in accordance with priority; it also authorizes reductions in individual cases as well as other actions necessary to protect the public interest. KAN. STAT. ANN. § 82a-1038 (1984); *see supra* text accompanying note 317. When the Chief Engineer issues a permit, its specified quantity is determined in part by the amount of water that is available after the quantities of earlier appropriators are accounted for. KAN. STAT. ANN. § 82a-701(f) (1984). For the text of the provision, see *supra* note 325. It follows that since quantity is a function of prior appropriations, the power to adjust quantity on conservation grounds carries with it the power to *pro tanto* adjust prior allotments. In other words, the Chief Engineer can reduce numerous appropriation rights without having to completely terminate the most junior rights in reverse order of priority. This conclusion is consistent with the nature of appropriation rights; each and every allotment "remain[s] subject to the [public interest elements of the] doctrine of beneficial use." KAN. STAT. ANN. § 82a-707(a) (1984). The same qualification provides the basis for the Chief Engineer's statutory authority to reduce individual allotments and to take other action required to protect the public interest.

does not necessarily establish a taking. As Justice Oliver Wendell Holmes recognized, "[G]overnment hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law."[364] Relying on that principle, state and lower federal courts have approved regulations, analogous to IGUCAA orders, that limit the exploitation of natural resources.[365] More importantly, the United States Supreme Court, primarily in land use cases,[366] has upheld regulatory actions having negative economic consequences far greater than those that would accompany a mandatory reduction in water use.[367] In light of such overwhelming authority, there

364. Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 413 (1922), *quoted in* Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978).

365. In *State v. Dexter*, the Washington Supreme Court held that a statute requiring lumber companies to provide for reforestation by leaving trees uncut or by restocking did not effect a taking. 32 Wash. 2d 551, 202 P.2d 906 (1949). Describing the measure as a "reasonable means to safeguard the economic structure upon which the good of all depends," *id.* at 555, 202 P. 2d at 908, the court emphasized that "not only adjoining landowners, but the public at large, have an interest in the preservation of the natural resources of the country sufficient to justify appropriate legislation to prevent exploitation or waste of such resources by the owners of the land on which they are found." *Id.* at 557, 202 P.2d at 909. *See also* Keystone Bituminous Coal Ass'n v. Duncan, 771 F.2d 707 (3d Cir. 1985), *aff'd sub nom.* Keystone Bituminous Coal Ass'n v. De Benedictis, 107 S. Ct. 1232 (1987). *Keystone* holds that a Pennsylvania statute requiring coal mining companies to leave certain amounts of coal in the ground to protect the surface from subsidence is not a taking. The court distinguishes a similar act declared invalid in Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922), stating that the new measure, passed to implement the federal Surface Mining Control and Reclamation Act of 1979, 30 U.S.C. § 1201-1328 (1982), was enacted with the public interest in mind. *Keystone*, 771 F.2d at 716. By contrast, the earlier act had protected the rights of a small group of private parties at the expense of other private parties. *Id.* at 714. For discussion of the United States Supreme Court's affirmance of *Keystone*, see *infra* note 367. *See also* Woodbury County Soil Conservation Dist. v. Ortner, 279 N.W.2d 276 (Iowa 1979). *Woodbury* holds a conservation district's order, issued pursuant to a statute requiring landowner compliance with soil loss limits, was not a taking. Examining whether the benefits to the public outweighed the specific restraints imposed on the farmers, the court found the Act reasonably related to the state's vital interest in protecting its greatest natural resource—its soil. *Id.* at 278. The court further held that the order was not rendered unconstitutional because it would require two farmers to expend $12,000 and $1500, respectively, on conservation activity that would remove some land from active production. *Id.* at 279.

366. Cases in the oil and gas area also support the conclusion. See *Walls v. Midland Carbon Co.*, in which the Court upheld a statute prohibiting use of natural gas to produce carbon black because of inefficiency and waste. 254 U.S. 300 (1920). The Act effectively destroyed a business, since the plant in question could not be used for any other purpose. For further discussion of *Walls*, see *supra* note 314. *See also* Champlin Refining Co. v. Corporation Comm'n of Oklahoma, 286 U.S. 210 (1932). A proration order permitting an oil company to pump at only six percent of capacity was upheld as a valid exercise of the state's power to regulate natural resources. The order was intended, *inter alia*, to prevent waste that would occur when crude oil, unmarketable because of oversupply, was stored in earthen reservoirs. *See also* Ohio Oil Co. v. Indiana, 177 U.S. 190 (1900). A statute prohibiting oil companies from allowing natural gas to escape into the air was upheld as a valid natural resource protection measure. The fact that at that time there was no known way to confine the gas went "not to the power to make the regulations, but to their wisdom." *Id.* at 211.

367. Although the United States Supreme Court often focuses on diminution in value, commentators suggest that rather than being an independent "takings" test, it represents only one prong of a larger "degree of interference" test. Note, *Regulation Without Just Compensation: A Political Process-Based Taking Analysis of the Surface Mining Act*, 69 GEO. L.J. 1083, 1086, 1104-05 (1981); *cf.* Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165, 1191 (1967)(diminution test applied primarily against regulations restricting "innocent" property uses and nontrespassory devaluations caused by public development). Thus, the Court has stated: "The economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment backed expectations are, of course, relevant considerations [in determining whether a taking has occurred]." Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978).

In *Penn Central*, the Court upheld New York City's landmark preservation act against the

seems little doubt that the IGUCAA is a valid exercise of the police

railroad's challenge that restrictions on its ability to build an office tower atop Grand Central Station effected a taking of air rights. In holding that the city could restrict the *contemplated* use of the property without paying compensation, the Court drew support from cases in which regulations affecting property's *existing* use had been upheld. In particular, it relied on Goldblatt v. Hempstead, 369 U.S. 590 (1962), in which an ordinance banning excavation below the water table effectively prohibited the continued operation of a sand and gravel mining business that was over 30 years old. Because the ordinance served a "substantial public purpose" and did not prevent the owner from using the property for some other purpose, it was a valid exercise of the police power and did not constitute a taking. *Penn Cent.*, 438 U.S. at 126-27. The Court contrasted the famous case, Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922), in which a statute forbade mining coal that would cause subsidence of houses. Because that act made mining commercially impracticable, it completely destroyed the property rights of the mineral owner and was thus a taking. *Penn Cent.*, 438 U.S. at 127-28.

If an ordinance that completely destroys an existing business is not a taking, Goldblatt v. Hempstead, 369 U.S. 590, 593 (1962); Walls v. Midland Carbon Co., 254 U.S. 300, 325 (1920), neither is an order that merely modifies the amount of water an appropriator can pump. The farmer will still be allowed to irrigate, just not as heavily; water rights, like the land in *Goldblatt*, and unlike the mineral right in *Pennsylvania Coal*, will still have value. Like the regulation in *Goldblatt*, the IGUCAA is valid as "reasonably related to the implementation of a policy . . . expected to produce a widespread public benefit and applicable to all similarly situated property," *Penn Cent.*, 438 U.S. at 134 n.30, even though the Act might be used to restrict "the present and presumably most beneficial use of . . . property." *Id.* at 127.

The Court has reiterated its position in succeeding takings cases. In a zoning case, *Agins v. City of Tiburon*, it upheld the California Supreme Court's decision that property had not been taken by an ordinance limiting development to one acre lots, even though that use was not the most profitable. 447 U.S. 255, 262 (1980). Arguably, *Agins* adds little to our takings understanding, since it may only illustrate the general principle that one is not entitled to the highest and best use of property.

By contrast, *Andrus v. Allard*, 444 U.S. 51 (1979), analyzes restrictions placed on a generally undisputed property attribute: the right to sell. Thus, the case is more analogous to the issue at hand. In *Andrus*, the Court upheld regulations forbidding the sale of artifacts from eagles and migratory birds lawfully killed before being protected by federal statute. Emphasizing the rights that artifact holders retained, for example, to possess, transport, donate and devise, the Court held that eliminating their right to sell did not constitute a taking. *Id.* at 66. Citing Goldblatt v. Hempstead, 369 U.S. 590 (1962), the *Andrus* Court also declared that a taking was not proven by the owners' contention that they were deprived of the artifacts' most profitable use. They were still able to gain some economic benefit, for example, exhibiting the artifacts for an admission charge. *See Andrus*, 445 U.S. at 66. In addition, the Court found the loss of future profits, unaccompanied by a physical restriction, to be a "slender reed upon which to rest a takings claim." *Id.*

The Court reiterated its *Andrus* holding in Keystone Bituminous Coal Ass'n v. DeBenedictis, 107 S. Ct. 1232 (1987). The plaintiff coal companies alleged a Pennsylvania statute that required them to leave a certain amount of coal unmined constituted a taking, arguing that the case was indistinguishable from Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922). In rejecting the argument, the Court distinguished the earlier case in two essential ways. First, whereas the statute at issue in *Pennsylvania Coal* was intended to protect private interests, the statute at issue in *Keystone* was enacted to protect public health, safety and welfare. *See Keystone*, 107 S. Ct. at 1240-46. Second, the earlier statute had constituted a taking because it made mining commercially impracticable; the statute at issue in *Keystone* required the companies to leave less than two percent of their coal in the ground. *Id.* at 1247-50. In discussing the second distinction, the Court quoted *Andrus*: "[w]here an owner possesses a full 'bundle' of property rights, the destruction of one 'strand' of the bundle is not a taking because the aggregate must be viewed in its entirety." *Id.* at 1248. Effectively treating the two percent of coal that the companies could not mine as but one "strand" in the "bundle," the Court held it did not constitute a separate segment of property for takings law purposes. *Id.* at 1249.

Applied to IGUCAA adjustment orders, *Andrus* establishes that neither a diminution in value of the existing water right nor a reduction in predicted profits would amount to a taking. Unlike artifact owners, the nature of whose property rights were substantially altered in *Andrus*, irrigators would still be able to reap economic benefit from utilizing their water right in the same manner as before, just not to the same extent. They would be in virtually the same position as the coal companies in *Keystone*: able to earn a profit from their water rights as a whole, the "bundle," and unable to argue that unusable portions of their water rights constitute separate property segments.

Given the *Keystone* Court's reliance on *Andrus*, the above analysis is seemingly unaffected by the intracourt debate over the current status of *Andrus*. Compare the concurrences of Justice Brennan (*Andrus* not limited to its facts) and Justice Scalia (*Andrus* limited to its facts) in Hodel v.

power.[368]

This conclusion is critical to the water debate since legislative discussion of regulatory alternatives will no doubt focus on traditional takings analysis. But I believe it is also important for Kansas policymakers to understand that by enacting the WAA and its progeny, the state has transformed its water policy in such a way that a traditional analysis is no longer the most appropriate one. Having long ago recognized the public interest in water, Kansas should adopt a takings jurisprudence that focuses on public rights. Specifically, I urge the adoption of the analysis formulated for use in the natural resource realm by Professor Joseph Sax.

2. *The Public Rights Analysis*

Sax challenges traditional takings analysis. He opines that this framework is tied to an assumption that just compensation can be determined only by examining economic effects that occur within the physical boundaries of regulated property. Yet it is naive to suppose that those who profit from a piece of property use only those resources within their boundaries; and it is equally naive to think the consequences of property owners' activities are confined to their property. Property does not exist in isolation. Particular parcels are tied to one another in complex ways, and the concept of property exists within an inextricable network of relationships neither limited to nor usefully defined by customary boundaries. Frequently, the use of a given parcel of land is also a use or demand upon property beyond the border of the user.[369]

Sax illustrates the principle by positing a regulation that would bar upland landowners from strip mining minerals from their land.[370] A traditional takings analysis focuses on the impact on the regulated land. In reality, however, the problem is more complex. In challenging the regulation, the would-be strip miners in effect demand the right to inflict erosion on lower lands. Thus, in fairness, lower landowners should be permitted to argue the *absence* of regulation effects a taking of their property.

Sax points out that the legal system has responded to this dichotomy by limiting its attention to regulated landowners, "unrealistically assum-

---

Irving, 107 S. Ct. 2076, 2084 (1987). In *Hodel*, the Court held an act prohibiting certain interests in Indian lands from passing by devise or intestacy to be a taking.

368. The IGUCAA should pass constitutional muster even if it is viewed as a new regulatory measure rather than as an extension of the WAA and GMA. It would still be police power regulation enacted to conserve a critical natural resource. And because an IGUCCA order reducing the amount of water that can be pumped effects only a diminution in value, it would not constitute a taking. For discussion of cases establishing that a diminution in value does not rise to the level of a taking, see *supra* note 367.

369. Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 152 (1971).

370. *Id.* at 152-55.

ing that the government's action affects only [their] property."[371] Sax argues the need for an alternative analysis. Borrowing from the doctrine of nuisance, under which the strip miner might be required to yield to a single, lower landowner, he asserts that those who would impose burdens on others may be required to yield to the widespread interests of individual citizens in matters of public concern such as clean air and water, freedom from flooding and erosion, or the continuation of a viable economic structure.[372] Yet individual interests are small and difficult to evaluate compared to the cumulative societal interest. Accordingly, Sax proposes they be treated as public rights.[373]

Traditional takings analysis is oriented toward private rather than public rights. The burden of failing to regulate activities that adversely impact public rights is borne by society at large which is subjected to, but not compensated for, the detrimental external costs of activities such as water and air pollution. The traditional framework, according to Professor Sax, "discriminates against public rights"; it "[r]equir[es] compensation when a conflict among competing users is resolved in favor of diffuse interest-holders, and not when it is resolved against them."[374] Sax proposes that bias be eliminated by placing all resource users in an equal position. In other words, among landowners whose activity, or desire to be free from activity, imposes spillover effects on others,[375] there is no *a priori* right to prevail.[376] Accordingly, in those situations the government is free to balance interests and values, to regulate, or to refrain from regulating, without incurring liability for compensation. Only when it is clear that the police power has been used in an abusive manner, that is, when the public interest has been subordinated to the advancement of private gain,[377] should a court overturn the legislative or regulatory

371. *Id.* at 154.

372. *Id.* at 160.

373. *Id.*

374. *Id.*

375. Sax describes three such scenarios. First, land uses that cause physical restrictions on other land obviously have spillover effects. An example is strip mining that results in drainage onto lower lying lands. Second, certain uses of common resources adversely affect others with an equal right to use the resource. Polluting a stream or the air burdens society at large; likewise, land uses that demand the absence of smoke or noise place limits on the common resource. Finally, land uses that affect the health and well-being of others can be characterized as having spillover effects. Examples include applying a toxic substance so as to cause the death of wildlife, or engaging in an activity that would necessitate the furnishing of police protection. *Id.* at 161-62.

376. *Id.*

377. *Id.* at 176. Sax relies on the famous case Illinois Cent. R.R. v. Illinois, 146 U.S. 387 (1892), as an example of abusive legislative action. For discussion of the public trust facet of the case, see *supra* note 132. In that case, the Illinois Legislature granted virtually the entire Chicago waterfront to the railroad company but later repealed the grant. The United States Supreme Court upheld the repeal, explaining 1) that public trust lands can only be disposed of when there is no substantial impairment of the public interest and 2) that the "abdication of the general control of the state over lands under navigable waters of an entire harbor or bay, or of a sea or lake . . . is not consistent with the exercise of the [public trust]." *Illinois Cent. R.R.*, 146 U.S. at 452-53. (The opinion is ambiguous as to whether the legislature lacked the power to make the grant or was simply free to revoke it. *See* Dunning, *supra* note 123, at 15.) Sax generally believes that the original intent of the takings

choice.

The adoption of Sax's analysis is appropriate for two reasons. First, although apparently not considered by Sax, his proposed framework permits the needs of future generations to play a policy-making role.[378] Not only has traditional takings law generally failed to recognize spillover effects on existing neighbors, it has also totally ignored the impact on those who will follow. Yet, the large-scale depletion of the Ogallala Aquifer undeniably constitutes an activity that adversely impacts the ecological and economic well-being of all generations, present and future. Thus, in order to treat all resource-users equally, future generations must be included within the category of public rights holders that Sax seeks to protect. Strengthened in this way, the Sax analysis facilitates implementation of the values of stewardship and intergenerational justice embodied in a conservation ethic.

A second and perhaps more important reason for the adoption of the Sax analysis is that our legislature and courts have previously set the stage for this reformulation by affirming the existence of public rights in water. By decreeing all water is dedicated to the people of the state,[379] the WAA implicitly anticipated Sax's thesis that all property rights are inextricably linked. And in upholding the Act, especially referring to the dedication provision as the "heart of the statute,"[380] the Kansas Supreme Court has explicitly acknowledged the validity of the same axiom. "The [passage of the WAA] is an appropriate [change] for the legislature to make. Individuals do not live alone in isolated areas where they, at their will, can assert all of their individual rights without regard to the effect upon others."[381] Having recognized the public's rights in water resources, we are obligated to protect these rights. Sax's public rights jurisprudence, which accords them equal weight, permits us to do that. Adoption of the Sax analysis is therefore warranted.

Measured by the Sax standard, those portions of the IGUCAA that authorize the downward adjustment of existing water rights pass constitutional muster. Pumping water from the aquifer constitutes use of a common resource, one of the situations that Sax describes as generating spillover effects.[382] Irrigators individually lower the water table of their neighbors[383] and collectively impair the supply available to future generations. Conversely, the desires of future generations, which presumably

---

clause of the fifth amendment was to protect citizens against arbitrary governmental action. Sax, *Takings And The Police Power*, 74 YALE L.J. 36, 54-60 (1964).

378. Another commentator has had this same insight. *See* Gjerdingen, *supra* note 72, at 438.

379. KAN. STAT. ANN. § 82a-703 (1984).

380. Williams v. City of Wichita, 190 Kan. 317, 336, 374 P.2d 578, 592 (1962)(quoting State, *ex rel.*, v. Knapp, 167 Kan. 546, 555, 207 P.2d 440, 447 (1949)).

381. *Williams*, 190 Kan. at 336, 374 P.2d at 592.

382. *See supra* note 375.

383. The WAA provides that allowance for reasonable raising and lowering of the static water table is a condition of each water appropriation right. KAN. STAT. ANN. § 82a-711a (1984).

prefer to see the water left in the ground, impact on current appropriators. Accordingly, the legislature or its delegated agency may regulate conflicts between current or future users in any nonabusive way without being required to pay compensation.

Clearly, no abuse occurred in the enactment of the IGUCAA. By attaching it to the GMA, the legislature implicitly adopted the GMA's objectives, which include the conservation of groundwater resources and the prevention of economic deterioration.[384] Thus, the authority of the Chief Engineer to adjust water rights in locations where groundwater supplies are actually threatened is substantially related to the achievement of statutory objectives and should not be second-guessed by the courts.

In summation, I believe it is clear that adjustment orders issued under the IGUCAA to conserve the Ogallala Aquifer do not effect unconstitutional takings. Appropriation rights are not absolute. They are from their inception usufructuary, and because they also remain subject to the doctrine of beneficial use, may be modified now that the level of use is no longer beneficial and in the public interest. The Kansas Supreme Court has ruled that a "taking" does not occur when water rights are restricted, or even abrogated, because they are limited in scope. Thus, downward adjustments, which amount to at most diminutions in value, are permissible under current law. Viewed alternatively from Sax's public rights perspective, downward adjustment orders are lawful because they resolve conflicts between current users, and between current and potential users, in a situation in which the interests of all groups have spillover effects.

To reiterate, I believe fears that the IGUCAA is unconstitutional are misplaced; there exists no legal impediment to extending the power of the Chief Engineer to initiate control areas within GMDs.[385] Doing so, however, would not itself solve the crisis on the Ogallala. The IGUCAA is envisioned as a measure to be used only in especially troublesome locations, yet the groundwater problem in western Kansas is so widespread that we must find a way to conserve water in the entire region.

C. *Other Conservation Techniques*

1. *Across-the-Board Cuts*

One way to accomplish widespread conservation is to require all Ogallala irrigators to decrease their usage by a certain percentage. Such

384. *See supra* text accompanying note 187.

385. Such an extension would in one sense be at odds with the GMA, one purpose of which is to permit local self-determination. *See* KAN. STAT. ANN. § 82a-1020 (1984). On the other hand, another of the GMA's purposes is to conserve water, and the Act certainly makes clear that state policy is the final authority. *Id.* Accordingly, it is ultimately up to the legislature to set conservation policy consistent not only with the interests of local areas but with that of the public at large.

an order would be consistent with, although an extension of, the privilege thesis. It would also be constitutional under the analysis set out above, since the legal issues raised would be no different from those presented by IGUCAA adjustment orders. On the other hand, it might be argued that because the IGUCAA provides the only explicit authority for mandated reductions, the Chief Engineer, in establishing another method, would be usurping legislative power. In addition, while in the collective sense this scheme would be the most equitable, it might be unfair to those irrigators who have taken steps to conserve water.[386]

The legislature could certainly empower the Chief Engineer to order such cutbacks; indeed, given that some highly efficient irrigators still pump tremendous amounts of water,[387] this step may be advisable. Absent such legislation, however, the question remains whether there currently exists the authority to require water conservation on a regional basis.

2. *Conservation Planning*

Conservation planning, as proposed in the Shupe article,[388] can accomplish large-scale conservation; moreover, this type of program would not suffer from the disadvantages associated with across-the-board cuts. Those who have already taken conservation measures would not be penalized, and more importantly, the authority for such a program currently exists within the WAA.

We have already considered Shupe's account of the evolution of restrictions on the waste of water: as advances in irrigation technology made greater use efficiency possible, courts held older, wasteful practices to be mere privileges.[389] We now turn to his description of the doctrine of beneficial use in the modern or administrative era. As we already know, Western States now regulate water through codes implemented by administrative agencies; most if not all of these acts contain provisions that allow those agencies to initiate forfeiture or abandonment proceedings.[390] Shupe reports that these provisions, which have traditionally been relied on to terminate rights in the case of nonuse, are now utilized to adjust rights in cases of inefficient use.[391] For example, in 1981, the

386. In the one intensive use control area where existing appropriations have been reduced, the Chief Engineer chose not to order equalized across-the-board cuts because they would be unfair to those who had been attempting to conserve water. For discussion of existing control areas, see *supra* note 324. Instead, a complicated formula that took previous conservation effects into account was used. Rolfes Conversation I, *supra* note 182.

387. One of the largest operations in southwest Kansas, run by the Gigot family, is also one of the most efficient, utilizing among other things computers and helicopters. M. FUND & E. CLEMENT, *supra* note 19, at 33. For discussion on the Gigot operation, see *supra* note 72.

388. Shupe, *supra* note 173.

389. *See supra* text accompanying notes 308-11.

390. *See, e.g.*, KAN. STAT. ANN. § 82a-718 (1984). For a discussion of the Kansas provision, see *supra* text accompanying notes 155-56.

391. Shupe, *supra* note 173, at 499-501.

Oregon Supreme Court held that an appropriation of forty cubic feet per second, vested since 1872 and certified by the state since 1949, could be decreased to 24.4 cubic feet per second because the smaller volume was "an adequate flow of water to be passed through the turbine to meet the maximum power needs of the system as installed."[392] The Oregon termination provision specifically states that all water appropriations are subject to the doctrine of beneficial use;[393] thus, the court implicitly held that inefficient uses are not beneficial ones.

Building on that historical progression, Shupe takes the next logical step and would require irrigators to increase the efficiency of their operations. Although he does not explicitly call for mandated irrigation planning, this requirement is implicit in the discussion. In contrasting the technology now used with that currently available,[394] he sets out various factors to be used in determining what irrigation technique is appropriate for a given tract of land.[395] He explains, for example, that irrigators should consider questions such as what quantity of water is necessary for the applicable soil, climate and crop, and whether climatic conditions will cause excessive evaporation from sprinkler systems.[396]

In Kansas, the forfeiture provision has been applied differently. The Chief Engineer has promulgated a regulation which provides that saving water through conservation techniques does not trigger the partial termination of a water right.[397] While the regulation helps break the "use it or lose it cycle,"[398] and may well encourage some irrigators to engage in conservation planning, it does so indirectly and on an ad hoc basis. There is clearly no policy aimed at bringing forfeiture actions against those who use water inefficiently. Thus, existing conservation policy as to current water users is no more hard-hitting than the legislative policy toward new applicants; the latter permits, but does not mandate, the Chief Engineer to require conservation plans of those seeking new appropriations and changes in use.[399] Obviously, if we are to use conservation planning to save water on a large scale, a program comparable to Shupe's is necessary.

---

392. Crandall v. Water Resources Dep't, 209 Or. 771, 775, 626 P.2d 877, 878 (1981). The water right was not in fact adjusted; because streamflow had at times been less than 24.4 cubic feet per second, the state was unable to show nonuse for the required five-year period. *Id.* at 778, 775 P.2d at 880; *cf.* State v. McLean, 62 N.M. 264, 308 P.2d 983 (1957)(letting artesian well flow 24 hours a day constituted waste, not the irrigation of native grasses; water right could be terminated); State v. Hernandez, 50 Or. App. 121, 622 P.2d 333 (1981)(using water to "wet" land was not irrigation; water right could be terminated).

393. OR. REV. STAT. § 537.120 (1985).

394. For discussion of currently available technology, see *supra* text accompanying notes 174-75.

395. Shupe, *supra* note 173, at 502-10.

396. In windy and arid regions, such as western Kansas, up to 30% of water from sprinklers may evaporate without hitting the ground. *See supra* text accompanying note 175.

397. KAN. ADMIN. REGS. § 5-7-1 (1983). For discussion of the regulation, see *supra* text accompanying note 156.

398. *See supra* text accompanying notes 155-56.

399. For discussion of the Act, see *supra* text accompanying notes 249-56.

a. *The Individual Aspects of the Beneficial Use Doctrine*

I believe the authority for a comprehensive conservation planning program is already contained in other forgotten provisions of the WAA that predate but coincide with Shupe's privilege thesis. The provisions spell out the individual oriented aspects (as opposed to those directed at the public interest) of the doctrine of beneficial use. By declaring that "[a]ppropriation rights in excess of the reasonable needs of the appropriators shall not be allowed,"[400] the WAA establishes: 1) that the waste[401] of water is not a beneficial use, and 2) that irrigators are accountable for the amount of water they use and the ways in which they use it.[402] Although the provision seems directed only to the permit granting process, it must be read along with the caveat, previously discussed in the public interest context, that appropriations "remain subject to the principle of beneficial use."[403] Together these two code sections make it clear that irrigators have an ongoing responsibility to maintain a degree of efficiency. That conclusion is bolstered by the fact the authorization for metering—a mechanism that can be used continuously to detect waste—also permits periodic water waste and quality checks.[404]

Thus, the WAA appears to define beneficial use as efficient use. More importantly, it attaches to appropriation rights from their inception, a continuing obligation to maintain efficiency of use. Accordingly, the Chief Engineer can legitimately establish efficiency criteria[405] and require all irrigators to engage in conservation planning to meet those standards. Such a program would be constitutional; moreover, there currently exists a model on which it could be patterned.

b. *The Constitutionality of Planning*

A conservation planning scheme would be constitutional for the same reasons spelled out with respect to IGUCAA adjustment orders and across-the-board cutbacks.[406] Irrigators are not forever entitled to the specific quantity of water set out in an appropriation right. As the

400. KAN. STAT. ANN. § 82a-707(d) (1984).

401. The WAA does not define waste, and its regulatory definition, an act or omission causing water to be applied in excess of the needs of a beneficial use, KAN. ADMIN. REGS. 5-1-1(z) (1983), lacks precision because of the open-ended way in which "beneficial use" is defined. *See supra* note 169 and accompanying text. However, waste is normally thought to include inefficient use. *See* Weiss, *supra* note 72, at 515.

402. The common-law doctrines of reasonable use and beneficial use that the WAA incorporates, *supra* text accompanying 295-96, both concerned themselves with the efficiency with which water was used. Maloney, Capehart & Hoofman, *supra* note 295, at 253-74.

403. KAN. STAT. ANN. § 82a-707(a) (1984).

404. *Id.* § 82a-706c.

405. The 1986 conservation act lists criteria to be used by the water office in establishing guidelines for the conservation plans of new applicants. *See supra* note 253. Although one criterion explicitly permits the implementation of use efficiency guidelines, the plethora of other factors to be considered offers little direction in how to arrive at such a standard.

406. *See supra* text accompanying notes 288-368. Conservation planning is not precluded by the "first in time, first in right" principle. Because *all* appropriation rights are qualified by the beneficial

previous discussion demonstrates, appropriation rights under the WAA are usufructuary in nature and taken subject to the public aspects of the doctrine of beneficial use; they are therefore not absolute. Appropriation rights are also subject to the individual aspects of the beneficial use doctrine, which are more definitive than the public interest features. Those individual requirements likewise establish that water rights are not absolute, but in Shupe's terminology, are privileges that may be restricted in cases of overuse. In short, by establishing a conservation planning program based on the individual-oriented restrictions of the WAA, the Chief Engineer would be enforcing obligations spelled out when a permit was granted.

Relying upon the limited scope of water rights, the Kansas Supreme Court upheld their restriction in *Williams*, and in *Stone* sanctioned even their abrogation as a means of conserving water on the Ogallala Aquifer; the *Stone* court viewed depletion formulas established pursuant to the GMA as merely an extension of the WAA and thus a valid exercise of the police power.[407] Applied to a planning-dictated modification of appropriation rights, the *Stone* analysis should render the same result. Appropriation rights are limited in scope, as were the common-law water rights at issue in *Stone*. Furthermore, their modification, which is also required to conserve the aquifer, would be based not on an extension of the WAA but on the language of the Act itself; *a fortiori* such adjustments would be valid exercises of the police power. Irrigators required by conservation plans to use less water would experience at worst a diminution in value, far less than the loss suffered by landowners affected in *Stone*; in that case property was not "taken" even though rights of access were completely destroyed. It follows that adjustment of appropriation rights pursuant to a conservation planning program would not trigger the right to compensation.[408] Alternatively, from Sax's public rights perspective, a conservation planning program would withstand constitutional scrutiny as an adjustment between groups whose interests spill over onto each other.

c. *A Model Planning Program*

A planning program already in place in GMD No. 4 could serve as a conceptual model for a state-wide scheme.[409] As of May 1, 1985,

---

use doctrine, we are not required to terminate completely the rights of junior appropriators in order to conserve water. For further discussion, see *supra* note 363.

407. For discussion of the cases, see *supra* text accompanying notes 344-68.

408. A conservation planning program should pass constitutional muster even if it is seen as a new regulatory measure rather than as an interpretive extension of the WAA. It would still be police power regulation enacted to conserve a critical natural resource. And because the reduction in use required to comply with a conservation plan would affect only a diminution in value, it would not constitute a taking. For discussion of cases establishing that a diminution in value does not rise to the level of a taking, see *supra* note 367.

409. The conservation planning program is only one of a number of innovative programs em-

GMD No. 4 broadened its definition of waste to include "the application of water in a manner which is below efficiency standards considered technologically and economically feasible."[410] This regulation requires applicants for new appropriations to prepare "resource development plans."[411] These plans consist of a description of the proposed irrigation system, including its design, or a listing and description of several possible systems the applicant considers as viable options. The plans also contain information about tailwater control methods, well yield(s), cropping patterns and other pertinent information. An applicant may obtain assistance in preparing the plan from any private or governmental entity. Before passing on the plan, the GMD will submit it to the appropriate conservation district[412] for comments and suggestions. A GMD-approved plan, which will accompany an application to the Chief Engineer, must be fully implemented before an irrigation system can be put into operation. The GMD's disapproval of a plan triggers a recommendation to the Chief Engineer that the requested permit be denied.

The new planning rule would not have significant impact if it applied only to new applications, since their current number is quite low.[413] However, it also applies to existing appropriators who violate other district policies. For example, irrigators who are ordered to install pits to keep tailwater from leaving their land will now be required to prepare resource development plans.[414] In addition, irrigators who pump more than their allotments may be required to file plans. Under another new policy, tied closely to the one requiring resource planning, irrigators are required to file a yearly water use report. This information will help the GMD upgrade its water use data base and will also identify irrigators who exceed their appropriations.[415] Once identified, these irrigators will be issued a district order requiring that they familiarize themselves with their obligations and that future water reports comply with district and state conditions. A violation of a district order may result in the imposi-

---

ployed in GMD No. 4. First, even though both GMD No. 3 and No. 4 have regulations captioned "Tailwater control and waste," which prohibit water from leaving the land on which it is used, only GMD No. 4 has aggressively enforced the policy. Four times the district has obtained injunctions requiring irrigators to construct and use tailwater pits. Bossert Conversation, *supra* note 203. Next, since May 1, 1980, GMD No. 4 has required all new nondomestic wells, and all wells redrilled because of a change in the point of diversion, to be equipped with meters; approximately 180 wells are now so equipped. *Id.* The district is also attempting to educate irrigators on conservation issues; it has established a library and hired a public relations expert. *Id.* Finally, the district has formulated and considered a buy-back program to retire water rights. For discussion of the program, see *supra* note 286.

410. KAN. ADMIN. REGS. § 5-24-1(g)(6) (Supp. 1986).

411. NORTHWEST KANSAS GROUNDWATER MANAGEMENT DISTRICT, *supra* note 197, at 27-29.

412. For discussion of conservation districts, see *supra* note 266.

413. For discussion of state-wide data, see *supra* note 254.

414. Bossert Conversation, *supra* note 203.

415. NORTHWEST KANSAS GROUNDWATER MANAGEMENT DISTRICT, *supra* note 197, at 26-27.

tion of a mandated plan, of metering, or other appropriate remedies.[416]

Obviously, a state-wide program requiring plans from all irrigators would be more inclusive and more involved than the scheme in GMD No. 4; such a formulation is beyond the scope of this Article.[417] Systemic elements aside, however, the Chief Engineer might want to borrow various features from GMD No. 4. Once efficiency standards are established, the actual formulation of plans could easily follow the process used to devise resource development plans. Irrigators could receive assistance from groups such as the United States Soil Conservation Service or local conservation districts. Before approving a plan, the GMD,[418] or some other oversight agency, could submit it to a conservation district for comment. In order to ensure that irrigators comply with their conservation plans, the Chief Engineer could adopt the GMD No. 4 policy of making follow-up inquiries of irrigators whose annual reports show their water use has exceeded their allocation.[419] The Chief Engineer could also utilize existing authority to require metering.

Since the state in promulgating this program would be enforcing existing obligations, it would not be required to assist irrigators with expenses they might incur. Nevertheless, the "technologically and economically feasible" limitation on the term "efficiency standards" in the GMD No. 4 definition of waste, reminds us that we cannot ignore the financial difficulty many farmers are now experiencing.[420] Perhaps we should be hesitant in requiring the most advanced technology in every instance, though we must not forget that conservation, not economics, is the overriding principle. Possibly, we should include within such a program an element of financial assistance for those who need it. We might establish a state loan fund, provide subsidies or tax incentives for modernization,[421] or make it an activity eligible for the state conservation commission's cost-share program.[422] The same options might be made available to those who need financial assistance in order to install me-

416. Since an appropriator must violate a series of regulations and a specific order before being required to prepare a plan, one wonders about the effectiveness of this part of the program. In particular, it seems difficult to imagine that an irrigator would ever turn in a report which admitted to using too much water. But Wayne Bossert, District Manager of GMD No. 4, states that in 1980, over 600 water users, about one-sixth of the total number, reported excess pumpage. Such persons now receive notice of the overpumping along with an admonition to stay within the limit of their allocation in the future. Bossert projects that in three years all irrigators will bring their reports into compliance; but he acknowledges that so long as Kansas uses an honor system for reporting that does not require metering, "fudging" will occur. Bossert Conversation, *supra* note 203.

417. For discussion of some of the problems involved, see *supra* text accompanying notes 246-47.

418. *See supra* text accompanying notes 246-47 (proposal for implementation of conservation planning under State Water Plan).

419. *See supra* note 415.

420. For discussion of the financial difficulties currently experienced by farmers, see *supra* text accompanying notes 42, 61, 263.

421. Shupe, *supra* note 173, at 510.

422. For discussion of the cost-share program, see *supra* note 266.

ters.[423] It is important to note that, unlike the benefits offered in the incentive/control programs previously distinguished,[424] the purpose of this aid would not be to encourage irrigators to conserve water; rather it would be to assist them in complying with a mandatory program aimed at enforcing existing obligations. Recognizing that financial assistance may be a practical necessity would not make the duty to conserve any less real.

To reiterate, by establishing a program of conservation planning for all irrigators on the Ogallala, the Chief Engineer would be enforcing the continuing obligation not to use water in excess of reasonable needs that the WAA places on all water users. Accordingly, the Chief Engineer would be acting consistently with powers already granted by the WAA. The authority with respect to planning thus differs from the authority to establish use control areas. For the Chief Engineer to independently establish control areas inside GMDs, the legislature will have to amend the IGUCAA.[425] By contrast, the Chief Engineer can institute a program of conservation planning at any time.

Realistically, however, we can expect the Chief Engineer to be reluctant to take that step, since doing so would require a shift in regulatory emphasis. I believe the Chief Engineer will understandingly find it difficult to cut through the forty-year-old prodevelopment web surrounding the Act's declaration that all water may be appropriated.[426] In addition, the Chief Engineer may be deterred by the GMA's stated preference for local policy determination.[427] Consequently, it is desirable, indeed perhaps necessary,[428] for the legislature to mandate that all irrigators engage in conservation planning.[429] This enactment would clarify the powers of the Chief Engineer and the obligations of irrigators. But more importantly, planning legislation would give meaning to the term "beneficial use"—by defining it as "efficient use." Even if the legislation did not completely transform the WAA's current development-oriented focus, it would nonetheless inject a definite conservation-oriented counter-

423. Such a proposal has already been made in the State Water Plan. *See supra* text accompanying note 257.

424. *See supra* note 286 and text accompanying notes 273-86.

425. *See supra* text accompanying notes 318, 322.

426. KAN. STAT. ANN. § 82a-703 (1984).

427. *Id.* § 82a-1020.

428. Legislation may be necessary to harmonize the WAA with an 1891 act that recognizes water rights that allow for reasonable losses from "waste, seepage and evaporation." KAN. STAT. ANN. § 42-302 (1986). The Kansas Supreme Court has ruled that the earlier statute was not implicitly repealed by the WAA and that water rights under the former, which are now "vested rights" under the WAA, include the amount of reasonable losses. Frontier Ditch Co. v. Chief Engineer of Div. of Water Resources, 237 Kan. 857, 865, 704 P.2d 12, 18 (1985). Arguably, the earlier act is irrelevant to irrigation on the Ogallala Aquifer, since water rights obtained under it are likely to come from surface rather than groundwater; nonetheless, the possibility of overlapping coverage should be investigated.

429. Such an act would not infringe on local autonomy to the same degree that an extension of the IGUCAA would. *See supra* note 385. Because GMD No. 4 already has a limited scheme in place, it can be argued that local ingenuity was the genesis for a state-wide program.

balance.[430]

Accordingly, it is my strong belief that, while the feasibility of other measures that might conserve more water should also be explored,[431] a program of required conservation planning for all irrigators represents the minimum acceptable response to the crisis on the Ogallala. Earlier sections of this Article make abundantly clear that while we can no longer tolerate the all-out development policies of the past, merely restricting future development will do little to alleviate the rapid rate of depletion that is the legacy of those policies. We must, therefore, ask existing irrigators to conserve water, and the most logical way to do this is by enforcing their existing obligations to use water efficiently. These obligations have been an integral part of appropriation rights since the day they were granted; moreover, from a public interest perspective, it is inexcusable when faced with a deepening groundwater crisis that we permit irrigation from a nonrechargeable aquifer without making certain it is accomplished efficiently. Because a conservation planning program would enable us to ensure a level of efficiency, it seems a crucial first step toward incorporating long-term conservation values into Kansas water policy.

Establishing a conservation planning program would constitute major progress toward management of the Ogallala Aquifer aimed at sustaining dependable western Kansas agriculture into the future. This progress will come about as a result of "consciously exercising rational control" over our environment[432] by replacing a developmental ethic with one based upon conservation.

---

430. The legislature could also replace the WAA's dictate "that all water in the State may be appropriated" with a statement establishing long-range conservation and management as the state's primary water policies. Such an amendment would be similar to the existing conservation-oriented exception contained in the minimum streamflow legislation enacted in 1980, but it would also differ substantially.

The effect of the 1980 provision is to add minimum streamflow as an element that the Chief Engineer must consider in deciding whether to issue a permit. Thus it is self-executing, but affects only future appropriations; moreover, it does not alter the § 703 prodevelopment bias. By contrast, a conservation policy statement powerful enough to serve as the basis for adjusting existing rights would have to do more than add conservation to a list of factors; it would need to replace the basic developmental thrust of § 703 with an overarching conservation principle. Even then, however, such an amendment would not be self-executing; adjustments would have to occur pursuant to specific programs, such as the IGUCAA or an across-the-board cut-back scheme, or a conservation planning program. Thus, although future revision of § 703 may be an appropriate way to protect conserved water from reappropriation, it is not an essential first step. For discussion of the problem presented by conserved water, see *infra* text accompanying notes 433-39.

On the other hand, because all other policies are required to be consistent with the WAA, altering its basic thrust from development to conservation would have the effect of changing the basic orientation of the state's water code. A conservation policy statement thus would reinforce the Chief Engineer's existing authority to implement and enforce conservation measures. It would likewise give real meaning to the conservation provisions of the GMA by causing GMDs to transform planned depletion policies into ones directed toward long-term conservation. Most importantly, a reorientation could profoundly impact the State Water Plan, and its preparers would finally be forced to treat conservation seriously.

431. *See supra* note 387 and accompanying text.

432. *See supra* text accompanying note 69.

D. *The Final Frontier*

The implementation of a conservation planning program would leave unanswered questions about the long-term management of conserved water, questions that Wayne Bossert, manager of GMD No. 4, has characterized as the "final frontier."[433] Because their resolution is unnecessary until we actually begin to achieve large-scale conservation, these issues are generally beyond the scope of this Article. Yet the issues cannot be completely avoided; saving water by emphasizing conservation-oriented elements in the water code does not alter the code's developmental elements. For example, the declaration in section 703 that all water may be appropriated paradoxically may permit conserved water to be reallocated. Because this result would effectively nullify the conservation program, we must initiate steps to prevent it from occurring.

Presently, there are two mechanisms in place that should eliminate, or can be adjusted to eliminate, the possibility of reappropriation. First, the regulations that implement the forfeiture section of the WAA provide that portions of water rights that go unused due to improved management and conservation practices will be exempt from termination.[434] Since conservation achieved through planning falls within that definition, allocations would not be adjusted and new water would not be available for appropriation. Irrigators would retain control of the full water right, its useful life extended.

Second, as defined by GMD depletion formulas, much of western Kansas is already fully or overappropriated. Therefore, even if water is conserved, it will not be available for reappropriation. Because the formulas were established after most of the Ogallala's development had already occurred,[435] and because they govern only new wells, depletion in many areas exceeds the allowable level.[436] Accordingly, it is entirely possible that even with reduced usage, much of western Kansas would still be ineligible for new wells. And even if more accurate data would cause that assessment to change,[437] the depletion formulas could be adjusted downward in order to ensure that reappropriation does not occur.[438]

---

433. Conversation with Wayne Bossert, Manager of GMD No. 4, (Sept. 16, 1986)[hereinafter Conversation].

434. KAN. ADMIN. REGS. § 5-7-1 (1983).

435. *Id.* §§ 5-23-4, 5-24-2. For discussion of depletion formulas, see *supra* text accompanying notes 201-03.

436. For example, under the GMD No. 4 formula, 11 wells, on the average, are permitted within a circle having a radius of two miles and centered on any given well. And while he is not sure that they are a representative sample, the district manager states that approximately 70% of applications for new wells are denied because the site is in a fully or overappropriated area, that is, one that contains at least 11 wells. Conversation, *supra* note 433.

437. Because of the great overlap among the two-mile circles used to determine whether an area is fully appropriated, a complete profile, which can be generated only through the use of a computer, is not yet available. *Id.*

438. For example, GMD No. 4 as part of its proposed buy-back program, would have reduced the saturated thickness component of its formula from two percent to one percent. Conversation

Although we may wish to evaluate them further, it appears that either of the existing mechanisms can be used to ensure that conserving water actually extends the life of the aquifer. And if necessary, perhaps for areas that are not yet fully appropriated, we may consider additional alternatives that would modify the WAA's prodevelopment philosophy.[439] Yet, even though the reappropriation issue may need further study, it must not divert us from the task at hand—conserving water. Permitting ourselves to be distracted by such questions would, in effect, allow an unsound developmental ethic to continue to dictate the water policy agenda on the Ogallala. If we are to accomplish the goal of sustaining long-term, dependable western Kansas agriculture, we must turn aside that philosophy in favor of one based on conservation.

VI. CONCLUSION

The movement to preserve United States farmland has focused entirely on the protection of the most visible agricultural resource—land. Preservationists correctly assume that our ability to produce food and fiber at needed levels depends on the continued existence of large quantities of prime farmland. Yet the availability of land alone will not ensure the desired result, for viable agriculture also requires other natural resources such as water and high quality soils. The truth of that proposition is nowhere more obvious than on the High Plains. Dependable cultivation in that region, which would not exist but for large-scale irrigation from the Ogallala Aquifer, is now threatened by the depletion of the aquifer. Sustaining stable High Plains agriculture thus requires conservation of the Ogallala.

To accomplish this goal, it will be necessary to replace the current development-oriented water philosophy with a long-term conservation ethic based on stewardship and intergenerational justice. From an ecological perspective, this reorientation is ultimately inescapable, because only a stewardship philosophy takes into account the natural limits of the resources on which agriculture depends. And from a jurisprudential perspective, it is difficult to justify preserving national parks and wildernesses for the enjoyment of future generations without also conserving water which is necessary to both agriculture and life itself.

In Kansas, implementing a conservation ethic will mean altering the overall direction of water policy and deemphasizing the more developmental elements of the state's water acts. However, this reorientation will not require substantial revision of the water code. Long neglected provisions of the Water Appropriations Act emphasize the usufructuary

with Mari Peterson, Executive Director of the Kansas Natural Resource Council (Sept., 1986). For discussion of the GMD No. 4 proposal, see *supra* note 286.

439. For discussion of a conservation policy statement, see *supra* note 430.

nature of water rights. The Act dedicates all water to the use of the people of the state, and permits appropriation to private parties only for uses that benefit the public at large. These public rights are underscored by other provisions declaring that appropriations shall at all times be limited to the reasonable needs of individual water users.

Taken together, these limitations establish that in order to combat the depletion crisis, the state can place conservation-oriented restrictions on new allocations and may prohibit them altogether in certain areas. More importantly, the provisions also confirm that the current level of irrigation development, which has generated the crisis and is no longer in the public interest, can be constitutionally curtailed. Orders reducing the quantity of water an irrigator can pump would not amount to the taking of property; individual appropriation rights are usufructuary in nature and have always remained subject to the interest of the public at large. We must not, therefore, be afraid to restrict existing water rights. We must find the courage to fulfill our water-related stewardship obligations to future generations—before it is too late.