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The description by George Radosevich of western water management tools and his recommendations for their improvement and better use are all quite appropriate. I find no fault with any of them. Hence, I will elaborate on his discussion by running it through a different mind, using a different set of analytical ideas and a different vocabulary. By so doing, I hope that understanding of the issues and the rationale for their resolution will be enhanced.

Earlier papers in this symposium, notably those by Trelease and Bromley, discussed the need for and the desirable content of broad policy reforms surrounding water in the West. For my presentation, I will assume that broad policy decisions covering water, whatever they are, have been made; I will discuss, as does Radosevich, the water management tools available to realize established policy and how they may be made more effective toward realization of that policy.

It is instructive to begin this discussion by recalling that "management tools" related to *land* resources in this country are predominantly in the hands of the land's private owners and users, whereas those related to *water* resources are predominantly held by the public in spite of the strongly held preference for private ownership and management of resources. The federal government held all property rights in land outside the thirteen original states and Texas (and in Texas the *state* public, the government, held them). Both publics (the federal and that of Texas) alienated land management rights to private owners as broadly and as rapidly as possible.

But the ownership of water was never alienated to individual owners though the federal public alienated the management rights to water to the several states (with certain exceptions such as reserved rights and interstate commerce). The states, in turn, have never alienated ownership rights to water to private and individual users but have allotted use rights to water users. True, these allotments of use rights were mostly for perpetual terms (if certain conditions of use were adhered to), but the public always held a reserved interest and allotting and transferring these rights and the water they covered has been generally a public administrative act rather than an impersonal market bargaining act.

Why this difference between property rights in land and water? Land as a resource unit is more clearly definable, more constant, more certain in content and location; water is transient in flows that are variable both in nature and when created by man. Even stored quantities of water are more variable in quantity and quality in nature and as the result of the actions of man than is land.

The publics have recognized these "peculiarities" of water relative to property and have retained public ownership, granting only use-privileges to individuals. When a private owner of land grants use-privileges to another, it is called a landlord-tenant relation. Even when a public land owner grants use-privileges to private users (as between federal public lands and graziers), it is easily, though not universally, recognizable as also a landlord-tenant relationship.

But the relation between the public owner and the individual user of water has never been recognized to be tenancy between a public landlord (or should one say "waterlord") and a private (or individual) user. It's high time we did because we know a considerable amount about what an efficient and equitable system the landlord-tenant relationship is. If we applied this knowledge to property relations between public owner and individual user of water, we could make more rapid progress toward improved use of water management tools. In fact, the central issue in such a quest is improved performance of the public as a landlord. During a recent discussion concerning federal government–private grazier use of public grazing lands, a friend in Montana said, "It's time that the federal government behaved in its management of public grazing lands in the

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same way it's urged for decades that private landlords should behave toward their tenants." It is the same with regard to water except that we first have to recognize that the problem is a landlord-tenant problem. All of Radosevich's recommendations for better use of water management tools can be cast in terms of improved (public) landlord-individual (user) tenant relationships and in improved performance of the public as a landlord. Let us turn, then, to a brief review of some of the elements of an improved landlord-tenant relationship in the management and use of water.

First, the landlord (the public) should and would have the right to protect his asset (water) against unreasonable damage (waste, degradation, or loss) by its users.

- He would define "minimal good management" (which Radosevich points out is the real meaning of "beneficial use") with regard to the use of his water by his tenants.
- He would set maximum limits on permitted degrees of depletion and degradation of his water.
- He would establish the rules and machinery to prevent, mediate, or adjudicate any adverse effects on some of his water user tenants stemming from actions by others of his tenants, at least insofar as these adverse effects are transmitted through his water.

Secondly, the individual water user must have security of tenure in whatever quantity and quality of water his tenancy contract (his "water right") specifies. Security of tenure in relation to water does not mean certainty as to quantity and quality of water received at every point in time because water is so intimately affected by natural fluctuations. What it does give the user (tenant) is security against unilateral, capricious acts by either the public (landlord), any other party, or the individual user himself to alter terms and conditions of his water lease contract. Such security means that if the contract is altered it will be done only with quid pro quos for damages to all affected parties determined by negotiation (bargaining) or in a court (reasonable compensation)—except insofar as the police power of government to protect the public health, safety, morals, and

welfare may be legislatively invoked.

Tenure security also requires that the term (length in time) of the water lease contract (the water "right") must be of sufficient minimum length as to make it possible for the tenant user to make reasonable use of the water conveyed, to realize reasonable return from its use, and to exhaust to a reasonable degree any long-run fixed investments he must make for efficient management and use of the water over the term of his right.

If the term of the water user's tenure is less than perpetual (as it should be in the interest of equity and fairness and long-run security on the part of the landlord, the public), the existing tenant-user should always have first right of refusal to any extension of the water lease contract upon its expiration. This should be subject to any changes that may be made in the terms of the lease contract at that time by the public landlord unless he (the tenant user) is evicted for unreasonable violation of terms of his lease (water right). If the extended lease contract (water right) is transferred to a different tenant, the new tenant should be required to reimburse the prior tenant for any remaining unexhausted (undepreciated) value of immovable investments he made that were necessary for the efficient use of the water. The public landlord may serve as referee as to the reasonable remaining value of such transferred investments.

Security of tenure for both landlord and tenant requires that there be no open end or undefined or indefinite terms in the contractual relationship as to the length of the arrangement or as to the quantity and quality of water covered (except insofar as they are nature-related). In other words, it must be clearly defined and specified who has what right to do what to whom relative to what water and what defenses.

Third, concern for security of tenure above all other considerations will convert security into a strait jacket—a trap—in which change is impossible to the detriment of the public landlord or the tenant user or both. What may have been efficient and equitable can become inefficient and inequitable for all. The system of water property relations (water rights) must provide means to secure flexibility in the use of the water (and related resources), in the location and in the conditions of its use, and in the identity of its user. Traditionally, our

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water management tools have emphasized security of tenure and have down-played flexibility. A considerable degree of inefficiency and inequity has resulted. The best way to break through this rigidity will be for the public landlord to establish or further the establishment of a market for water lease rights or for water itself by offering a "brokerage" service or by "licensing" brokerage services by private, cooperative, quasipublic, or other public firms or organizations.

The public landlord must, however, due to the ubiquity of externalities stemming from water use and management practices, always retain the right to be a party to (1) every exchange transaction in water leases or water that may change the terms of the water lease contract, or (2) the manner and location of use of the water in order to minimize detrimental externalities that may arise therefrom. It is for this reason primarily that the public owner-private user (public landlord-individual usertenant) relationship in water management has universally arisen in our society despite our preference for private ownership as well as use.

In addition, of course, further flexibility in the landlordtenant user relationship relative to water can and may arise through the use of eminent domain and the police power by the public.

Fourth, although reference throughout this discussion is to the public acting as landlord in the water lease contract relationship, it is evident that the public as such cannot perform this function directly. It will be necessary that it establish an agency to serve as its agent to carry out its landlordship role. Such an agency will likely be a bureau of water resources; management or something similar.

- Such an agency must know how much water and of what: quality categories (including return flows to the system) it has for which to issue lease rights. In other words, an inventory of what it has to work with by locations is essential.
- The agency should contract out withdrawal or degrada tion rights for each reasonably separable tributary and aquifer to no more than the reasonably probable quantity

of water by quality classes available with reasonable certainty from year to year in each such area, which, after all, is all the water the landlord has to offer.

- The agency should be made responsible to keep the volume of authorized depletions and degradations and the volumes of available water qualities in reasonable balance for each reasonably separable tributary and aquifer.
- Short term fluctuations in quantity or quality due to natural 'causes should be shared proportionately by all water lessees in an affected supply area (except where previously established prior rights exist). Market-mediated transfers of rights or of water, if an exchange market as described above has been created, will provide for desirable deviations from the rigid proportionalities the above actions by the public landlord agency will generate.
- Actions to increase the supply of water to an area by storage, import, transwatershed diversion, etc. should be a public function or a licensed private function. Hereafter, lease rights to any increase in long-run supply beyond that quantity needed to fill outstanding lease contracts should be allocated to users by market sale methods with the possible exception of that portion allotted to public uses (like recreation).
- The water landlord agency must maintain a continuous and current record of who has what lease rights to what water of what quantity and quality under what restraints and obligations.
- Changes in terms of water leases made by the landlord agency other than at the time of lease expiration should be made by the agency only by negotiation (bargaining) with a quid pro quo for the tenant or the landlord agency depending on which one is harmed or benefitted by the change. The only exception to the above restraint on the landlord agency will relate to legislated police power actions.
- A water management, public landlord-private tenant user system as described above can function well with suitable efficiency and equity relative to its short run—for example, season to season—consequences. But for funda-

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mental resources like water that are necessary for a viable, ongoing society, the long-run consequences of the management system are crucial and must be dealt with and resolved. The competitive market doesn't rationalize these long-run consequences at all well as demands grow relative to supplies, especially as supplies are depleted or degraded, or both.

Thus, the public as the landlord responsible for society's water for its long-run welfare has a role of increasing importance to play, a role not referred to by Radosevich among his water management tools but implied by several papers at this symposium. That role has to do with finding an answer to the question, How fast—i.e., at what annual rate—should we use up a non-reproducible, nonsubstitutable, depletable or degradable resource such as water? And how far ahead must such a decision look to be suitably "long-run"? Well, put it this way. The "long-run" is how far ahead the current decision-making public is willing by its decisions to designate which generation is going to be the last one to have a particular depletable-degradable supply of water available to it.

When such a decision is made by the public, then its water landlord agency should grant water right leases to no more than that annual volume of consumptive uses that will insure this life expectancy of that resource. If and when the annual depletion can be increased, rights to the increased volume should be sold to prospective users. If the depletion rate later must be reduced, the public landlord agency should buy back the curtailment by market bargaining or by eminent domain.

The point is that some *public agency* must have and must exercise *the responsibility* to determine or to recommend (to the legislature, for instance) how fast to use up *an irreplaceable, depletable-degradable resource such as water.* An important water management tool all too generally ignored is long-range planning. We've got to do much, much better in our use of this tool!

Last, the above discussion implies that the water management tools we have aren't all that they should be and that even those we have are not and have not been used as fully and effectively

as they could be. But we do have sets of such tools in the several states and in the federal government and property right commitments have been made under them. The need, then, is not simply to decide to build something new but to figure out how to reform and improve what we have. That raises another set of problems because changing institutions that already exist is a different matter than building new ones to ill voids. But time and space doesn't permit getting into that problem here.

We must realize, however, that in the mundane world of practical action, this problem of transforming the existing water management system can well be a tougher and more intractable problem than agreeing on what sort of a target system will be preferable as a goal or ideal to be striven for. Interim small decisions taken to reform the existing system toward something conceived to be better will certainly turn out to be a mixture of negotiated or adjudicated quid pro quo compensation payments and uncompensated police power actions. The former will run into public and political restraints on expenditures; the latter will run into political opposition on questions of justice and issues of "taking" property without due process of law. Either of these restraints on change will be ample reason to expect sufficient conflict to keep life from becoming boring!