The Colorado River, flowing through 1,300 miles of Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, and California, is a primary source of water for the arid Western United States. As the lifeblood for so many, the Colorado River has long been at the heart of controversies over water rights. Rapid population growth and a recent drought have both increased demand for and decreased supply of the water resources of the Colorado River, resulting in heightened conflict over water rights on the river. The interest groups competing for these water rights include irrigation water districts (groups that sell water to farmers for agricultural uses), municipal water districts (groups that sell water to city dwellers for household uses and to companies for industrial uses), and the federal government (which uses water for environmental purposes, such as protecting endangered species, and other public purposes).

† B.A. 1999, University of Notre Dame; J.D. Candidate 2005, The University of Chicago.
2 See id at 1 (“The [Colorado River and its tributaries are] the only significant source of surface water in an area bounded by the Rocky Mountains on the east and the Sierras on the west.”).
4 In 2002, rainfall in the Colorado Basin was the lowest in recorded history. See id at 8. See also Kirk Johnson and Dean E. Murphy, Drought Settles In, Lake Shrinks and West’s Worries Grow, NY Times § 1 at 1 (May 2, 2004) (noting that, according to the United States Geological Survey, “[t]he period since 1999 is now officially the driest in the 98 years of recorded history of the Colorado River”).

The ESA requires all officials who grant federal permits or approvals to assure that the proposed actions do not jeopardize the continued existence of any species listed by the US Fish and Wildlife Service as threatened or endangered. Because the construction, alteration, or operation of virtually every major water facility, whether public or private, requires some kind of federal permit, and much of the undeveloped water in the West affects sensitive habitat, the ESA is often implicated.

6 See Getches, 20 Stan Envir L J at 58 (cited in note 5) (discussing the role of the federal government in “protecting species and habitats under federal law, protecting navigable waters,
Historically, water rights in the Colorado River were established by first possession and included limited transfer rights. As a result of these historical rules, the vast majority of water rights vested in traditional farming communities. With Western urban population growth, the demand for urban uses of water has rapidly grown.

The voluntary transfer of water rights from the agricultural industry to urban water districts has been stymied by legal rules that place severe restraints on the transfer of water rights. These restraints successfully addressed the greatest problem involved in water transfers—third-party effects. Indeed, restraints on transfers were an efficient solution when the external third-party costs of transfers were greater than the benefits gained by two-party transfers. Today, however, with increased urban water demands, the value of transfers has increased and, with technological advances, the third-party costs of water transfers have decreased. Hence, restraints on alienation are no longer the

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asserting Indian water rights and water rights for public lands, and dealing with international and interstate water allocation.

7 For a discussion of the legal rules governing the Colorado River, see Part I.

8 See Getches, 20 Stan Envir L J at 62 (cited in note 5) (“Historically, most water in the West was allocated to inefficient agricultural uses and some states adopted apparently irrational barriers to transferring water to more efficient uses.”). See also Leslie Linthicum, Farming Out Water, Albuquerque Journal (June 8, 2003), online at http://www.abqjournal.com/water/48023news06-08-03.htm (visited July 14, 2004) (“Agriculture consumes roughly 80 percent of the water in the West, but that is expected to change as municipal needs grow.”).

9 See Getches, 20 Stan Envir L J at 61 (discussing the expected population growth in the West and the resulting need for water transfers from agricultural uses to urban uses).

10 See Richard A. Epstein, Why Restrain Alienation?, 85 Colum L Rev 970, 981–82 (1985): [T]he English natural flow system allowed the alienation of water rights but only when tied to the sale of the riparian lands... The same uneasiness carries over to the present day, but now the prohibition against the use of water on nonriparian land tends not to be absolute, at least in the United States.


12 See Guido Calabresi and A. Douglas Melamed, Property Rules, Liability Rules, and Inalienability: One View of the Cathedral, 85 Harv L Rev 1089, 1111 (1972) (noting that entitlement inalienability is efficient when no party would purchase the entitlement if he were required to pay all the costs incurred by third parties that result from the transfer); Epstein, 85 Colum L Rev at 981–82 (cited in note 10) (noting that restraints on alienation might help preserve the value of the common pool of water resources); Mark Kanazawa, Origins of Common-Law Restrictions on Water Transfers: Groundwater Law in Nineteenth-Century California, 32 J Legal Stud 153, 154 (2003) (“Restrictions on the ability of private parties to freely transfer water can, but do not necessarily, serve to promote efficiency when the local costs inflicted on others are significant.”).

13 Barry Nelson, a senior policy analyst for the Natural Resources Defense Council, describes the gap between the low price paid by the agricultural industry and that paid by the urban water districts as “an arbitrage opportunity.” See Jim Carlton, Is Water Too Cheap?, Wall St J B1, B6 (Mar 17, 2004).

14 See Statement of Assistant Secretary Bennett Raley, Department of the Interior, before the Senate Energy and Natural Resources Committee Oversight Hearing on Water in the West (Mar 9, 2004), online at http://www.doi.gov/water2025/news.html (visited July 14, 2004) (“The in-
most efficient approach to the third-party costs that result from water transfers.

However, the restraints still serve a distributional goal. Combined with the implicit subsidies granted to farmers in the form of long-term government contracts for "cheap water" (water at prices much lower than those paid by urban water districts), the restraints serve to enrich the agricultural communities. These distributional goals, however, could be better achieved, at less cost to urban water users, through direct subsidies to agriculture rather than legal protections and below-market pricing. With additional resources, agriculture might purchase needed water at market prices, but would have incentives to use the water it purchases efficiently, promoting environmental ends, and would be able to engage in voluntary transactions, promoting efficiency.

As the efficiency justifications for restraints on water right transfers have given way to distributional justifications, the movement for reform in order to facilitate water transfers from the agricultural industry to urban water districts has gained momentum. There are two competing views about who should control water right transfers in order to minimize transaction costs. One view is that the state should be given the right to oversee water transfers in trust for the public. If increased use of simple tools like water measurement structures, automated control structures, and computer-based system monitoring can allow water users to either stretch their water supplies further or make part of their supplies available on a willing seller-willing buyer basis for otherwise unmet demands.

15 See Calabresi and Melamed, 85 Harv L Rev at 1114 (cited in note 12) ("[J]ust as efficiency goals sometimes dictate the use of rules of inalienability, so, of course, do distributional goals. Whether an entitlement may be sold or not often affects directly who is richer and who is poorer.").

16 See Carlton, Is Water Too Cheap?, Wall St J at B1 (cited in note 13) (noting that "farmers' rates have been increased recently" but are "still nowhere near many of the urban rates").

17 See Calabresi and Melamed, 85 Harv L Rev at 1114–15 (noting that distributional grounds are not necessarily undesirable).

18 See Carlton, Is Water Too Cheap?, Wall St J at B6 (noting that environmentalists argue that higher water rates could change the crops grown in California to higher-value crops).

19 See Ronald H. Coase, The Problem of Social Cost, 3 J L & Econ 1, 15 (1960) (noting that, in the absence of transaction costs, voluntary transfers will always take place if they lead to an increase in value).

20 Calabresi and Melamed define economic efficiency as Pareto optimality—"that allocation of resources which could not be improved in the sense that a further change would not so improve the condition of those who gained by it that they could compensate those who lost from it and still be better off than before." Calabresi and Melamed, 85 Harv L Rev at 1094.

21 See Statement of Assistant Secretary Bennett Raley (cited in note 14) ("Market-based tools that rely on willing buyer-willing seller transactions are far more likely to provide stability and avoid conflict than are regulatory or litigation-based alternatives for meeting unmet and emerging needs for water.").

22 See generally Barton H. Thompson, Jr., Institutional Perspectives on Water Policy and Markets, 81 Cal L Rev 671 (1993) (discussing the role of local administrative agencies in meeting new water demands).
new use served the public interest better than an old use, the government would transfer the permit from the old use to the new use. The other view is that transfer rights should be given to vested right holders who would voluntarily transfer rights through mutually beneficial arrangements, in much the same manner that transfers of other private property are made.\(^2\)

The transaction costs involved in water transfers are numerous. They include the information costs involved in quantifying the amount of water available for transfer\(^24\) and assessing the likely effects of the transfer on third parties; the administrative costs of surmounting the legal requirements for water right transfers, including resolving third-party injury claims;\(^25\) and the actual transfer costs involved in transferring water from one use to another, including the external costs borne by third parties.

Minimizing these transaction costs serves efficiency by allowing the scarce water of the West to move from lower-value agricultural uses to higher-value urban uses. In this Comment, I argue that placing transfer rights in the hands of right holders best serves to minimize transaction costs, as the transferring parties have the best information about the marginal benefits of a particular water transfer. I then consider the primary argument against this choice: that the administrative regime is better suited to minimize the third-party costs of water right transfers. In response, I propose liability rules to force transferring parties to internalize the third-party costs of their transactions. A liability rule eliminates holdout problems\(^26\) and forces transferring parties to internalize the full costs of the transfer.\(^27\) Finally, I describe


\(^{24}\) See Gould, 23 Land & Water L Rev at 20 (cited in note 11) (describing the complicated procedures involved in quantifying water rights). See also Getches, 20 Stan Envir L J at 63 (cited in note 5) (“There are three distinct kinds of climate variability that can affect water supply: cyclical variations, severe drought, and long-term climate change.”).

\(^{25}\) See Gould, 23 Land & Water L Rev at 20–22.

\(^{26}\) See Calabresi and Melamed, 85 Harv L Rev at 1106–07 (cited in note 12) (discussing the need for liability rules when holdout problems prevent transfers that would be beneficial for all parties).

\(^{27}\) As noted by Calabresi and Melamed, liability rules are no guarantee of the economic efficiency of a transfer. See id at 1125 (“Liability rules represent only an approximation of the value of the object to its original owner and willingness to pay such an approximate value is no indication that it is worth more to the [party that took the entitlement] than to the [original] owner.”). However, there is no reason to assume that the administrative regime would be any better at approximating the value of water rights to the original owner than liability rules.
Part I describes the current state of the law of water rights on the Colorado River. In particular, I discuss the "no injury" rule, adopted to deal with the external effects that result from a water right transfer, which acts as a legal restraint on alienation. In Part II, I note that the current regime endows neither governmental entities nor private parties with sufficient rights to effect water right transfers. I discuss the two parties who might control water right transfers—either administrative agencies or private parties—and argue for private party control of water transfers. Part III responds to the argument that private party control cannot adequately account for the third-party effects of water transfers by proposing a liability rule for injured third parties.

I. THE CURRENT REGIME: RESTRAINTS ON ALIENATION

According to state law, Western states nominally "own" water rights which they hold in trust for water right holders. However, this trusteeship operates in practice to provide a role for state control to indirectly regulate water to promote its environmentally sound and efficient use. In practice, Colorado River water rights are largely privatized. Private parties hold property rights, albeit imperfect ones, in water. They hold "use" rights to a certain volume of water, subject to forfeiture if the water use is not "reasonable and beneficial." They also

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28 See, for example, NM Stat Ann § 72-5-23 (2000) (allowing for changes in ownership of water rights "if such changes can be made without detriment to existing water rights").
29 See, for example, National Audubon Society v Superior Court of Alpine County, 33 Cal 3d 419, 189 Cal Rptr 346, 364–65 (1983) ("The state has an affirmative duty to take the public trust into account in the planning and allocation of water resources").
30 See Frank J. Trelease, Government Ownership and Trusteeship of Water, 45 Cal L Rev 638, 653–54 (1957) (arguing that the notion that water ownership is held by the state "in trust" for the people expresses little more than the government's interest in the conservation and efficient use of water).
31 See David J. Hayes, Privatization and Control of U.S. Water Supplies, 18 Natural Resources & Envir 19, 19 (2003) (noting that water rights are characterized as property rights and the government's influence over rights is limited to indirect regulatory requirements).
32 See id.
33 For a description of a "water right," see Gould, 23 Land & Water L Rev at 5 (cited in note 11):
An appropriation gives the appropriator the right to divert a specified quantity (e.g. 2 cubic feet per second) of the flow of a stream, at a particular place, provided the water is not needed to satisfy appropriations acquired at an earlier date. Thus, the parameters defining an appropriative right are its (1) diversionary entitlement, (2) point of diversion, (3) purpose of use, (4) place of use, and (5) priority date.
34 See Hayes, 18 Natural Resources & Envir at 22 (cited in note 31) ("[W]ater rights typically are defined with reference to the amount of water that is being reasonably and beneficially applied . . . . Water that is 'wasted'—that is, not reasonably and beneficially used—is not within
hold "exclusion" rights, the right to enjoin any other water right users' activity that infringes on their right. However, water right holders hold very limited "transfer" rights, and this acts as a serious restraint on alienation. Because water rights are interdependent, the protection of "exclusion" rights comes at a cost to the "transfer" rights, as the act of transferring water rights often inflicts harm on the water rights of third-party water right holders.

As the state holds only indirect regulatory power and private parties hold limited transfer rights, neither party has the power to redirect water to its highest-value uses. Simply granting transfer rights, either to the government or to private parties, is not adequate to solve the current resource allocation problem. The limitations on transfer rights were developed for good reason—to address the interdependency of water rights. Because water rights are so interdependent, a transfer between two parties is likely to affect many other third-party water users.

To promote efficient transactions, transfer rights, either in the hands of government or private parties, must be fashioned so as to internalize the full costs of their transfers, not only to the transferring parties, but also to third-party right holders. The internalization of third-party effects, however, adds substantial transaction costs to water right transfers: information costs about who will be affected, negotiation costs incurred in making an arrangement with those who will be affected, and holdout problems when many third parties are involved. In the presence of such transaction costs, we consider which

the scope of the water right.

35 See Richard A. Posner, Economic Analysis of Law § 3.1 at 32 (Aspen 6th ed 2003) (discussing the importance of exclusion rights in order to provide incentives for efficient use of resources).

36 The right to enjoin infringing activity—the "no injury" rule—is discussed in detail in Part I.B.

37 See Posner, Economic Analysis of Law § 3.1 at 33 (cited in note 35) (discussing the necessity of transfer rights for the efficient use of land).


39 See Hayes, 18 Natural Resources & Envir at 19 (cited in note 31) (noting that the government does not have the power to redirect water resources).

40 See Epstein, 85 Colum L Rev at 982 ("Partial restrictions on alienation may help preserve the value of common pool resources.").

41 See, for example, Farmers' High Line Canal & Reservoir Co v Wolff, 23 Colo App 570, 131 P 291, 294 (1913) (discussing the interdependency of water rights: an upstream water user diverts water which he uses for irrigation; some of the water seeps into the ground and returns to the stream as return flows; these return flows are then diverted for irrigation by a downstream user).

42 See Harold Demsetz, Toward a Theory of Property Rights, 57 Am Econ Rev Papers & Proceedings 347, 350 (May 1967) ("[P]roperty rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization.").

43 See Gould, 23 Land & Water L Rev at 23 (cited in note 11) (discussing the high transaction costs involved in water right transfers).
set of entitlements among government and private parties "favors knowledgeable choices between social benefits and the social costs of obtaining them, and between social costs and the social costs of avoiding them." 44

A. The "Law of the River"

A brief overview of the body of law governing the Colorado River, called the "Law of the River," cannot do justice to a system of such vast complexity. However, it serves to illuminate the problems associated with implementing an efficient regime for water rights and to identify some of the historical solutions to those problems.

The Law of the River allocates water rights through a multi-layered system that includes an interstate compact, 45 federal law, 46 federal administrative agency decisions, 47 state law, 48 state administrative agency decisions, 49 agreements with Indian tribes, 50 and a treaty with Mexico. 51

During the late nineteenth and early twentieth centuries, the West underwent a period of rapid development, increasing the demand for Colorado River resources. Two important results followed from this increased demand: a scheme providing a water allotment, measured in acre-feet, 52 to each state on the Colorado River, 53 and the

44 Calabresi and Melamed, 85 Harv L. Rev at 1096 (cited in note 12).
45 See Colorado River Compact of 1922, codified at Colo Rev Stat § 37-61-101 et seq (2000) (apportioning the Colorado River between the Upper Basin (Wyoming, Colorado, Utah, and New Mexico) and the Lower Basin (Arizona, California, and Nevada)).
47 Specifically, those made by the Bureau of Reclamation, a part of the Department of the Interior.
48 See, for example, Cal Water Code (2003), Ann Cal Codes § 1 et seq (West 1971 & Supp 2004); Coffin v Left Hand Ditch Co, 6 Colo 443, 449–50 (1882) (repudiating common law rights of riparian owners in favor of a first-appropriator-for-beneficial-use principle).
49 See, for example, Digest of Selected Water Rights Decisions of the California State Water Resources Control Board and Its Predecessors, online at http://www.waterrights.ca.gov/hearings/decisions/DecisionDigest.pdf (visited July 14, 2004).
50 See, for example, Arizona v California, 373 US 546, 595–97 (1963) (noting that when Congress created Indian reservations in the Colorado River Basin, it "reserved not only the land but also the use of enough water from the Colorado to irrigate the irrigable portions of the reserved lands").
52 An acre-foot is equivalent to about 326,000 gallons See Brent Israelsen, California Will Cut Back Its Big Gulp; Colorado River Rights: Neighbors Relieved As the State Plans to Live within Its Allotment and Conserve Water; Water Deal Reached with California Users, Salt Lake Trib B1 (Dec 13, 2003).
53 The allocation scheme is a product of the combination of the Compact of 1922 (cited in note 45), allocating water among the Upper and Lower Basin; subsequent Upper Basin and
construction of the Hoover Dam, which transformed "the erratic and often destructive flow of the Colorado River into a controlled and dependable water supply."

Initially, most Western states through which the Colorado River runs adopted the "prior appropriation" doctrine. A user obtains water rights under this doctrine when he diverts water, applies it to a beneficial use, and posts or records some notice of the appropriation. Priority among competing appropriators is governed by the "first in time, first in right" principle. Under the prior appropriation regime, the precise nature of the property right that attaches to the water right has been a matter of debate.

Today, the appropriative right, in many jurisdictions, requires an administrative permit. Whereas at common law a right holder held an appropriative right good against the government and against all, today the right holder holds a permit granted by an administrative agency on behalf of the government, which claims to control ownership over all waters in its jurisdiction. In addition, the Reclamation Act of 1902 and the federal funding of the Hoover Dam construction brought water in the Lower Basin (California, Arizona, and Nevada) to previous appropriators.


Arizona, 373 US at 554. See also Hayes, 18 Natural Resources & Envir at 20 (cited in note 31) (describing the unreliability of the Colorado River as a water source before construction of the Hoover Dam).

For example, Colorado is a pure appropriation system. The Colorado Constitution reads: "The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied. Priority of appropriation shall give the better right as between those using the water for the same purpose." Colo Const Art 16, § 6. See also Coffin, 6 Colo at 447 (holding that the first appropriator of water from a natural stream for a beneficial use has a right to that water, and that the common law doctrine giving the riparian owner a right to the flow of water in its natural channel over his lands is inapplicable in Colorado). California is a mixed system of riparian and appropriative rights. See Lux v Haggin, 69 Cal 255, 4 P 919, 924–25 (1884) (holding that an individual who acquired title to governmental land also received riparian rights, subject only to previous appropriators).

Examples of beneficial uses include irrigation, domestic, mining, and recreational uses.

See Morriss, 80 Or L Rev at 880 (cited in note 23) (concluding that at common law, three elements—diversion, beneficial application, and notice—roughly constituted a valid appropriation in every jurisdiction, when done within a reasonable time of one another).


See, for example, State v Superior Court of Riverside County, 78 Cal App 4th 1019, 93 Cal Rptr 2d 276, 281–86 (2000) (discussing the extent to which water can be owned).

See Scott and Coustalin, 35 Natural Resources J at 915 (cited in note 58) ("In the twentieth century, in many American jurisdictions, the original appropriative right has become an administrative permit.")

See id.

under the control of the Department of the Interior, a federal agency. The Department makes contracts with various private entities throughout the Lower Basin for delivery of water from government-controlled reservoirs. Those who obtain permits or contracts with the Department of the Interior hold rights to use.

B. The "No Injury" Rule

As mentioned above, water rights are interdependent. An increase or decrease in water use by one right holder will affect the amount of water available to other right holders. A water right transfer often results in a significant change in use, one that might affect and perhaps injure third parties. For example, a transfer might result in increased consumption by the transferee. Water usage often results in return flows—water that returns back to the stream after percolating into the ground. Such return flows are difficult to quantify; direct measurement of the amount of water a given user had been diverting might fail to account for unrecognized return flows. Thus, the user transfers more water than he had previously been using (direct diversion less return flows). If the new user uses all of the water transfer, the result might be a decrease in downstream flows and injury to downstream right holders.

The no injury rule reduces the risk of such injury to third parties. Primarily, it protects them by making the right to change a water right secondary to the right to preserve currently vested rights. If injury to a vested right is "substantial," the transfer does not proceed unless the

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63 See Hayes, 18 Natural Resources & Envir at 20 (noting that the federal government acquired water rights under state law, so as not to override preexisting rights, and, following the federal investment in infrastructure, the government became "the largest water wholesaler in the world"); 43 USC § 617 (2000) (authorizing the Department of the Interior to contract for the storage and use of water for irrigation).

64 Contracts for federally controlled water resources are administered by the Bureau of Reclamation, an agency that operates under the Secretary of the Interior. See Carlton, Is Water Too Cheap?, Wall St J at B1 (cited in note 13) (discussing the likely renewal of U.S. Bureau of Reclamation contracts with farmers at subsidized rates).

65 For a technical discussion of the types of third-party effects that result from transfers, see Gould, 23 Land & Water L Rev at 13-19 (cited in note 11).


67 See Gould, 23 Land & Water L Rev at 20:

Much of the writing on transfers and water marketing reads as if there were two metered pipes, one for diversions and one for return flows, leading from the stream to the place of use. Of course, such is not the case... Often return flows seep back over a broad stretch of the stream or percolate into groundwater which is tributary to the stream, making direct measurement impossible.

68 See Wolff, 131 P at 294 (holding that the injury claimed must be substantial, but that it need not be in proportion to the right sought to be changed).
transferring parties are able to reach a contractual arrangement with the objecting parties.

The no injury rule operates as follows: parties seeking transfers must obtain permission from the relevant authority, a state administrative agency\textsuperscript{69} or a special water court.\textsuperscript{70} They file an application for transfer, and notice of the proposal is published.\textsuperscript{71} Opponents of the transfers, such as downstream users or those objecting on grounds of environmental harm, are offered an opportunity to protest the transfer.\textsuperscript{72} These opponents claim injury in that the transfer will result in the transferee consuming more water than the transferor consumed; changes in stream flow; changes in the time, frequency, or length of diversion; or changes in water quality.\textsuperscript{73} In addition, some states grant standing to parties protesting a transfer on environmental or public interest grounds.\textsuperscript{74} These claims are resolved through informal negotiations or formal hearings, lasting anywhere from a few hours to a few weeks.\textsuperscript{75} The proceedings add significant transaction costs to any attempt to transfer rights. Because of the uncertainty of the outcome of the proceedings and high cost of generating the needed information for the hearings,\textsuperscript{76} many right holders are deterred from even attempting to transfer water rights.\textsuperscript{77}

\textsuperscript{69} For example, the California State Water Resources Control Board. See Cal Water Code, Ann Cal Codes § 1252 (stating that permits for unappropriated water must be requested from the State Water Resources Control Board).

\textsuperscript{70} See Colo Rev Stat § 37-92-302(1)(a) (2000) ("Any person who desires a determination of a water right . . . shall file with the water clerk in quadruplicate a verified application setting forth facts supporting the ruling sought.").

\textsuperscript{71} See, for example, Colo Rev Stat § 37-92-302(3)(b) ("[T]he water clerk shall cause such publication to be made of each resume or portion thereof in a newspaper or newspapers as is necessary to obtain general circulation once in every county affected, as determined by the water judge.").

\textsuperscript{72} In many states, any interested party may file a protest, whether or not the party is a water user. See, for example, Bonham v Morgan, 788 P2d 497 (Utah 1989) (holding that the state engineer was required to entertain the objections of landowners who did not use the water in question). For an overview of the application process, see Sax, et al, Legal Control of Water Resources at 229 (cited in note 66).


\textsuperscript{74} See, for example, National Audubon Society, 189 Cal Rptr at 353 n 11 (concluding that the National Audubon Society, a third-party environmental group, had "standing to sue to protect the public trust").

\textsuperscript{75} See Gould, Recent Developments in the Transfer of Water Rights at 94 (cited in note 73) ("[V]irtually all appropriation states provide for proposed appropriations receiving some form of public interest review by water officials.").

\textsuperscript{76} A survey of Colorado and New Mexico suggests that the cost of statutory transfer proceedings typically adds 20 percent or more to the cost of small purchases. See Thompson, 81 Cal L Rev at 705 (cited in note 22) ("[S]tatutory transfer procedures impose costs of at least $300 per acre foot on transfers of twenty acre feet or less.").

\textsuperscript{77} See Gould, 23 Land & Water L Rev at 23 (cited in note 11):
The burden of proof in these cases rests on the parties seeking to transfer rights. A third party need only claim that a proposed transfer will cause injury. The parties proposing the transfer then must prove that the transfer will not cause injury. This proof is both costly and difficult to obtain; evidence of no injury is at best speculative prior to the actual transfer. Even a ruling in favor of the transfer might be qualified by terms and conditions to limit the potential for third-party injury, reducing the economic benefit of the transfer.

The no injury rule serves the important function of protecting third parties from the deleterious effects of water transfers. However, it also places serious restraints on alienation, preventing parties from transferring water to its highest-value uses. These restraints may have been efficient when water resources were not as scarce and the costs incurred by third parties as a result of transfers most likely regularly exceeded the benefits of the transfers. Today, however, the benefits of the transfers are considered “arbitrage” opportunities, and such restraints on alienation serve distributive rather than efficiency goals—they operate as an agricultural subsidy. These distributive goals, achieved through a direct subsidy, would provide assistance to the agricultural industry, but do so in a way that would allow for beneficial water transfers and a more efficient exploitation of Colorado River water.

The effort and expense required to effectuate a transfer—the “transaction costs” in the jargon of economists—is perhaps the greatest impediment to markets.... Collecting data, hiring experts such as agronomists, engineers, and lawyers, and the protracted and dispute-prone procedures associated with the identification, quantification, and mitigation of third party effects makes for high transactions costs.

See, for example, Southeastern Colorado Water Conservancy District v Fort Lyon Canal Co, 720 P2d 133, 146 (Colo 1986) (“The applicant for a change of water rights has the burden of showing the absence of injurious effect.”).

See note 77.

See, for example, Colo Rev Stat § 37-92-305(4):

Terms and conditions to prevent injury ... may include:

(a) A limitation on the use of the water which is subject to the change, taking into consideration the historic use and the flexibility required by annual climatic differences;
(b) The relinquishment of part of the decree for which the change is sought ... if necessary to prevent an enlargement upon the historic use or diminution of return flow to the detriment of other appropriators;
(c) A time limitation on the diversion of water for which the change is sought in terms of month per year;
(d) Such other conditions as may be necessary to protect the vested rights of others.

See Posner, Economic Analysis of Law § 3.1 at 33 (cited in note 35) (discussing how transfer rights induce parties to transfer resources to the party who can use them most productively).

See note 12.

See note 13.
II. A REGIME IN TRANSITION

The restraints on alienation imposed by the Law of the River are becoming increasingly unworkable for the following reasons. First, as a result of the prior appropriation doctrine and the long-term low-priced contracts granted by the Bureau of Reclamation to the agricultural industry, the majority of Western water rights are vested in the agricultural industry. Irrigation alone utilizes 80 to 90 percent of the water of the West. Second, due to the high third-party costs of transfers, the legal regime developed restraints on alienation because, in the absence of water scarcity, the costs to third parties of water transfer often exceeded the benefits to the transferring parties, resulting in a net social loss. Third, today, the rapidly increasing urban water demands due to a population boom and an extended drought have increased the value of urban water uses to the point that the current restraints on alienation no longer serve an efficient purpose. Rather, the restraints now deter transfers where the benefits of the transfers exceed the costs to third parties (and the benefits gained by the transferring parties are sufficient to compensate injured third parties). The restraints deter the transfer of water resources to their most valuable uses.

As a result, there is increasing pressure to both transfer and accept transfer of water rights. These transfer rights might be given to either state administrative regimes, which control water right transfers in an attempt to maximize the efficient exploitation of a scarce resource while minimizing third-party costs, or water right holders who engage in voluntary transfer arrangements when they make both parties better off. The strengths and weaknesses of these two regime forms are discussed below.

A. Evidence of Change: The California Water Deal

The Colorado River Water Delivery Agreement, signed in October of 2003 by the Department of the Interior and the State of California, suggests a shift in values—away from restraints on alienation

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84 See Hayes, 18 Natural Resources & Envir at 22 (cited in note 31).
85 See note 3. For a discussion of urban water demands, see David S. Brookshire, et al, Western Urban Water Demand, 42 Nat Resources J 873 (2002).
86 See note 4.
88 See note 22.
89 See generally Morriss, 80 Or L Rev 861 (cited in note 23) (advocating for a common law and market-based approach to water rights rather than an administrative approach); O'Brien, 19 Pac L. J 1165 (cited in note 23) (advocating for legislative enactments to facilitate the adoption of water markets).
90 See U.S. Department of the Interior, Issues of Interest: Colorado River Water Agreement,
and toward transfers of water rights—that sets a precedent for future change.

California, for many years, had been using more than its allocated share of Colorado River water. Negotiations to reduce the overuse had been ongoing for many years. Parties to the negotiations included the Department of the Interior, the City of San Diego, the Metropolitan Water District, the Imperial Irrigation District, the Coachella Valley Irrigation District, and the State of California. The Metropolitan Water District, which imports Colorado River water to supplement local supplies, is a "cooperative of 26 cities and water agencies serving 18 million people in six counties." The Imperial Irrigation District and Coachella Valley Irrigation District contract with the federal government through the secretary of the interior for water delivery, which they subcontract to individual farmers.

These parties came close to resolution in 2002, but the deal collapsed as the result of disagreement over the environmental ramifications of the transfer. At issue was the future of the Salton Sea, a body of water fed entirely by agricultural runoff. As a result of the transfer, the water level of the sea would drop, increasing its salinity and adversely affecting wildlife. An agreement was not reached until Secre-

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91 Several recent California enactments demonstrate a policy shift in favor of transfers. However, they do not reduce barriers to transfer and are thus mere beginnings to change. See, for example, Cal Water Code, Ann Cal Codes § 109(a):

The Legislature hereby finds and declares that the growing water needs of the state require the use of water in an efficient manner and that the efficient use of water requires certainty in the definition of property rights to the use of water and transferability of such rights. It is hereby declared to be the established policy of this state to facilitate the voluntary transfer of water and water rights where consistent with the public welfare of the place of export and the place of import.

See also id § 1011 (creating an appropriative right to conserved water, which can be sold or transferred).

92 Tony Perry, The State; No Shortages Are Expected, MWD Says; Officials’ Prediction Counters a Warning That Drought May Halt the Allocation of Surplus Colorado River Water, LA Times B6 (Dec 13, 2003) (“In recent years California has received as much as 800,000 acre-feet of surplus water each year above its entitlement of 4.4 million acre-feet.”).

93 See Bruce Babbitt, Western Water Policy—From Reclamation to Restoration, Remarks of Interior Secretary at the University of Colorado, Boulder (June 8, 1999), online at http://www.doi.gov/news/archives/speeches&articles/uni.htm (visited July 14, 2004) (listing various government districts the department has worked with to reach an agreement for transferring up to 200,000 acre-feet of water to San Diego, “the largest water transfer in western history”).


95 See Mark van de Kamp, Historic Water Pacts Fill Attorney’s Resume, Santa Barbara News-Press (Nov 9, 2003) (discussing the negotiations of the agreement).

96 See John Fleming, Developers Offer Plans to Revive Salton Sea, Chi Trib C16 (Mar 5, 2004) (discussing the divergent interests in the future of the Salton Sea). The Salton Sea is a product of the collapse of an irrigation canal from the Colorado River in 1905, pointing to an-
tary of the Interior Gale Norton, a Colorado native, cut off California’s access to surplus water on December 31, 2002. Negotiations were expedited, centering on a deal to transfer 65 million gallons per year from agricultural uses in the Imperial Valley to urban uses in San Diego. An agreement finally was reached in October 2003 when the agricultural interests agreed to sell Colorado River water at below-market prices to the State of California, which would then resell the water to urban users at market prices. California agreed to spend $300 million from the resale to mitigate the environmental impact of the transfer on the Salton Sea. In exchange for the agreement, Norton granted California access to surplus Colorado River water for an interim period and instituted a gradual phase-out plan for California’s use of the surplus water.

The Colorado River Water Delivery Agreement is an illustrative example of the water conflicts of use that arise among agricultural users, urban dwellers, and environmental concerns. The agreement is a political compromise, born out of a crisis created when the Department of the Interior cut off surplus water supplies to California. Although Norton’s ultimatum led to results in this instance, the tactic does not offer a roadmap for other negotiations or provide hope that these deals will be made with any more ease in the future.

The agreement provides a precedent, though, indicating that the no injury rule might become a weakening prohibition. While the agreement provides for a transfer of Colorado River water to where it is most needed (that is, urban uses in Southern California), it also takes water away from Imperial Valley farmers whose farmland will be idled in the wake of the transfer. According to the Imperial Group, the agreement will result in reductions in agricultural production, loss of jobs in agriculture, and a reduction in the value of land. The Imperial Irrigation District had little choice. It had to either accept the deal or face the prospect of the water being taken by political

97 See Susan Greene, Interior Tightens the Spigot on California; Colorado River Overuse Leads to Big Cutback, Denver Post A-01 (Jan 1, 2003) (noting that the assistant interior secretary lamented that his department was poised to impose “the most punitive measure[] in the history of Colorado River politics” on California).

98 See Water: First Shipment in Colorado River Deal Ready, Greenwire (Dec 19, 2003) (discussing water transfer agreements between California water districts from agricultural to urban users).

99 See van de Kamp, Historic Water Pacts, Santa Barbara News-Press (cited in note 95) (discussing the impact environmental concerns had on the deal).

100 See Harry Cline, Peace Elusive along Colorado River, Western Farm Press (Dec 6, 2003).

101 See id.
The agreement appears to violate the no injury rule in that the farmers are in fact injured by the end result.

B. The Debate: Administrative Control of Transfer Rights or Private Party Transfer Rights?

There are strong arguments for both administrative and private party control of transfer rights.103 As Ronald Coase notes in *The Problem of Social Cost* about third-party externalities:

All solutions have costs and there is no reason to suppose that government regulation is called for simply because the problem is not well handled by the market or the firm. Satisfactory views on policy can only come from a patient study of how, in practice, the market, firms and governments handle the problem of harmful effects.104

To the extent that we lack a “patient study” of how the various institutions handle third-party externalities in water right transfers, a final conclusion on the appropriate system is not warranted. However, the strengths of regulatory solutions are often overestimated.105 Unless costly regulatory regimes do a significantly better job of reducing externalities, the added costs are not worth the countervailing reductions in externalities.106 With these considerations in mind, I discuss the argument for administrative control, but then attempt to define a workable solution that places transfer rights in the hands of private parties, rather than administrative agencies.

1. The arguments for and against administrative control.

The argument for administrative control proceeds as follows: water rights are interdependent. A change in use by one party necessarily affects many other parties. Thus, private party water transfers are likely to inflict negative external costs on third parties. Because of high transaction costs,107 third parties cannot protect themselves from

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102 See id.
104 Coase, 3 J L & Econ at 18 (cited in note 19).
105 See id (“It is my belief that economists, and policy-makers generally, have tended to over-estimate the advantages which come from government regulation.”).
106 See id:

[O]ften that the costs involved in solving the problem by regulations issued by government administrative machine will often be heavy . . . , it will no doubt be commonly the case that the gain which would come from regulating the actions which give rise to the harmful effects will be less than the costs involved in Government regulation.

107 See id at 15 (noting that, in the absence of transaction costs, voluntary transfers will al-
injury. These transaction costs include high information costs and freeloader problems. High information costs result from the fact that water right transfers have unpredictable outcomes. Thus, parties may not know in advance whether the transaction or transfer will cause them injury. The only way to understand the likely effect of the transfer is to hire expensive experts. A freeloader problem results because if there will be many injured parties as a result of the transfer, some parties may try to freeload and assert that the value of the impending injury is worth less to them than it actually is or nothing to them in hopes that enough others will provide sufficient funds to make it worth the while of the transferring parties to either forgo or alter their transfer arrangement. The argument for administrative control of transfer rights asserts that high information costs and freeloader costs can best be overcome by a collective valuation of a transfer by an administrative agency. The agency would develop expertise at assessing the likely third-party effects of transfers, reducing information costs. It then would weigh the social benefits of the transfer against the social harms and approve or deny the transfer based on those considerations. Levels of compensation could be used to further distributional goals. For example, the administrative agency might use compensation for water transfers as a means to transfer wealth to the agricultural industry.

As mentioned above, administrative control of transfer rights is costly. First, there are large administrative costs involved in running an administrative agency. Second, whatever might be gained in lower information costs through agency expertise and repeated decisions may be lost as a result of the increased information costs in becoming familiar with the costs and benefits of every proposed transfer. Third, the objective standard by which an administrative agency measures costs and benefits might not actually map onto the subjective value that parties attach to the water right. Such objective valuations offer no guarantee that a transfer is efficient. Finally, administrative agen-
cies offer a target for rent-seeking activities, which might result in distributional outcomes that are less desirable than the idealized picture presented above of compensation being used to transfer wealth to the agricultural industry in line with some broader public policy goal.

2. The arguments for and against private party control.

The argument for private party control proceeds as follows: voluntary transfers are the most efficient mechanism to move water rights from low-value uses to high-value uses. In the absence of third-party costs, because transfers will occur only if they are mutually beneficial, they will occur only when they are efficient (that is, both parties are made better off). In addition, information costs about costs and benefits of various water uses are lower than under administrative control as private parties are able to rely on market prices for information on the relative values of water uses. Thus, given lower administrative, information, and rent-seeking costs, and the benefit of subjective, rather than objective, valuations, there is a strong argument that the best arrangement should provide private party control of transfer rights.

The biggest drawback to the market-based model is third-party effects. There are two important economic reasons why third-party effects must be taken into account in water rights transfers. Third-party protections are necessary to protect “exclusion” rights. Such

only an approximation of the value of the object to its original owner and willingness to pay such an approximate value is no indication that it is worth more to the [buyer] than the owner.”). 114 See Saul Levmore, Property’s Uneasy Path and Expanding Future, 70 U Chi L Rev 181, 183 (2003):

When property rights are assigned because of political maneuvering . . . , there is the danger that the development of these rights promotes inefficient behavior either on the part of those who seek to obtain wealth as the recipients of these assignments or by those who hope to gain indirectly by redistributing rights to inefficient users from whom the lawmaker can more easily collect taxes.

However, the shift to private party control does not necessarily eliminate rent-seeking activity. Rather, it might just shift lobbying activity to subsidies or taxes on specific uses of water.

115 See Coase, 3 J L & Econ at 2 (cited in note 19).

116 See Morriss, Yandle, and Anderson, 15 Tulane Envir L J at 358 (cited in note 23) (noting that information requirements for relative values are lower under private party control because of the ability to rely on price signals).

117 This statement is subject to the caveat that rent-seeking activities might merely shift under privately controlled transfer rights rather than dissipate. See id.


119 See id at 24 (“First, the protection of third parties promotes more complete utilization of water resources by providing security to water development by junior appropriators. . . . Second, the protection of third parties promotes economic efficiency.”).

120 See Posner, Economic Analysis of Law § 3.1 at 32 (cited in note 35).
"exclusion" rights ensure secure rights and promote efficient exploitation of water rights. Secure right holders have incentives to invest in improvements to maximize the value of their water rights. In the absence of such security, the right holders have less incentive to make these investments given the increased probability of the loss of some or all of their water rights. The second reason is that forcing transferring parties to internalize the external costs of the transfer ensures that transfers are economically efficient, that the social value of the transfer exceeds the social cost. If the transferring parties have to compensate all the injured third parties, they will proceed only if the benefit of the transfer exceeds the third-party costs.

Administrative control, by developing expertise at assessing the likely third-party effects of a given transfer and operating by administrative fiat, which avoids the transaction costs associated with holdout and freeloader problems, addresses third-party effects. For private party control to function more efficiently than administrative control, then, we must put in place a mechanism to account for the external third-party effects of water right transfers. Absent such a mechanism, property rights in water would become too uncertain, reducing incentives to exploit water efficiently. Thus, there must be legal rules that protect third-party interests in voluntary transfers.

III. PROPOSED TRANSFER RULES

In this Part, I consider the best arrangement to protect third parties from these negative externalities under private party control of transfer rights. There are two alternative arrangements that would protect third-party property rights. One is to leave third parties to protect themselves through contractual arrangements with the transferring parties. The other is to create legal rules to protect the property rights of the third parties.

As Demsetz notes, "[P]roperty rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization." This Part will consider the costs of externalities to third parties if there are no third-party protections. I will then consider the benefits of internalization if we develop a liability rule to protect third-party rights. Finally, I will attempt to weigh these costs and benefits and assess whether the gains of internalization outweigh the costs.

121 See id.
A. No Third-Party Protections

As Coase notes:

The problem which we face in dealing with actions which have harmful [third-party] effects is not simply one of restraining those responsible for them. What has to be decided is whether the gain from preventing the harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm.\(^{124}\)

Thus, third-party protections from harm are needed only if the benefits of protections exceed the costs, including enforcement costs.\(^{125}\)

In the absence of transaction costs, there would be no need for third-party protections.\(^ {126}\) Rather, if the cost of the injury to a third party exceeded the benefits of the transfer to the transferring party, the third party would pay the transferring parties to forgo the transaction. If the cost of the injury to the third party was less than the gain to the transferring parties, the transfer would proceed as the transfer would still be efficient. Thus, in the absence of transaction costs, no third-party protections are necessary to maximize efficiency.

B. Third-Party Protections

In the presence of transaction costs—information costs, negotiation costs, freeloader problems—otherwise inefficient transfers might proceed because the costs of overcoming the transaction costs to the injured third parties exceed the benefits they would gain by stopping the transfer. Hence, given transaction costs, the best solution might be to force transferring parties to internalize the full costs of their transfer by making them pay for the third-party effects of their transfer.\(^ {127}\)

In addition, third-party protections are an efficient means of strengthening the “property right” held by each right holder. Eliminating protection dissolves the “exclusion” rights which provide incentives to invest in maximizing the value of a water right.\(^ {128}\) For example, a farmer might not make the costly investment of lining his irrigation

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124 Coase, 3 J L & Econ at 27 (cited in note 19).
125 See Richard A. Epstein, The Allocation of the Commons: Parking and Stopping on the Commons, John M. Olin Law & Economics Working Paper No 134, at 7 (Chicago 2001), online at http://www.law.uchicago.edu/Lawecon/index.html (visited July 14, 2004) (“The total elimination of these externalities is always an impossibility: externalities occur in too many forms and styles. The hard question is what rule would minimize them, relative to the costs of their control.”).
126 See id at 6.
128 See note 35 and accompanying text.
canals because he is uncertain that his investment will pay off given the risk that his water right might be taken.

Protection of exclusion rights, along with transfer rights, also encourages efficient allocation of river water rights as a whole. Under the appropriation regime, which makes water rights available to anyone able to appropriate, the Colorado River has become over-allocated. Each additional appropriator increased the number of competing demands on the river, inflicting external costs on prior appropriators. So, today, right holders must deal with expensive conflicts over use rights.

However, the rights to exclude and transfer create incentives to reduce these conflicts of use. A right holder who is allowed to exclude and resell his right has incentives to invest in a mechanism for minimizing such conflict, which will lower the cost of holding and protecting his right and increase its value. He might purchase the rights that conflict with his right or enter contract agreements that avoid conflicts of use.

Water storage facilities, such as the Kern Water Bank in Southern California, are an example of how private property rights help optimize the allocation of water rights. These banks are repositories in which right holders accumulate substantial amounts of water and then act as distributors, reselling water to farmers, cities, and other consumers. Because the water bank will sell only water when the benefits of the sale exceed the costs of resolving any conflicts of use, these distributors will set resale prices at the optimal price—that is, the price at which the marginal benefit of selling water exceeds the costs of resolving conflicts of use.

Under the current no injury rule, third parties relatively easily, without establishing the likely costs of the transfer to them relative to the benefit of the transfer as a whole, can enjoin a transfer. Too much

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129 See Kanazawa, 32 J Legal Stud at 156 (cited in note 12).
130 The term "water bank" is used in two different senses in different states on the Colorado River. Some states have "on-paper water savings accounts" where a water rights holder forgoes his use for a period of time and allows someone else to use the water. This process allows for temporary transfers during shortages without going through the lengthy legal process of water transfers. See Leslie Linthicum, New Mexico's Water Plan, Albuquerque Journal A4 (Nov 11, 2003). The other type of water bank, and the type considered by this Comment, is an underground water aquifer which acts as a sort of distribution center from which parties withdraw their water use allotment. See Mark Arax, Massive Farm Owned by L.A. Man Uses Water Bank Conceived for State Needs, LA Times B1 (Dec 19, 2003).

The Kern Water Bank is an underground water aquifer—a "massive underground pool"—that stores 730,000 acre-feet of water. It was conceived of in the mid-1980s by the California Department of Water Resources. The state began building the bank, but never finished. It eventually sold the bank to Stewart Resnick, a large corporate farmer, who developed the bank into a viable means to store water in wet years for use in dry years. See id.
131 See Part I.B.
protection for third parties allows third-party holdouts to block efficient transfers. In order to overcome an injunction, transferring parties must either incur large legal costs in an effort to establish no injury\textsuperscript{132} or negotiate to pay third parties to allow the transfer to proceed. The costs of the legal proceedings or the costs of negotiating with third parties, including the information costs required to figure out who would be injured and the amount of their injuries, are so great that even though a transfer might benefit all parties (that is, the gain from the transfer is enough to compensate all parties for their injuries), the transfer does not occur.\textsuperscript{133}

For the successful operation of water markets, we need to find a middle ground; we need a regime that will both facilitate transfers and protect a right holder's right to exclusion by mitigating the negative third-party effects of market transfers without imposing high administrative costs. We need to strike a new balance between transfer rights and third-party rights. We need to look for a set of legal rules that would reduce transaction costs and provide incentives for efficient water use.\textsuperscript{134}

C. Transfer Rules

The current rule allows third parties to obtain injunctions against transfers at relatively low costs. These injunctions can only be overcome at great expense to the transferring parties and, hence, sometimes deter efficient transfers. A modified no injury rule might strike a better balance by allowing transfers to proceed when they are efficient and enjoining transfers when they cause obvious third-party harms. If injunctions were only issued when we were certain that the transfer would cause third-party harm, transferring parties would be forced to internalize the full costs of their transfers. In those cases where there was uncertainty that the transfer would cause injury, we would let the transfer proceed, but allow a third-party action for damages after the transfer if the transfer in fact proved to cause harm. This after-the-fact liability rule for third-party effects cures the problem that prior to the transfer a market valuation of probabilistic injury is either unavailable or too costly to determine.\textsuperscript{135}

\textsuperscript{132} See generally Gould, 23 Land & Water L Rev at 35–37 (cited in note 11) (discussing the difficulties of ascertaining third-party effects and proving them in court).
\textsuperscript{133} See Calabresi and Melamed, 85 Harv L Rev at 1106 (cited in note 12) ("Often the cost of establishing the value of an initial entitlement by negotiation is so great that even though a transfer of the entitlement would benefit all concerned, such a transfer will not occur.").
\textsuperscript{134} See Posner, Economic Analysis of Law § 8.1 at 251 (cited in note 35) ("Although the most dramatic economic function of the common law is to correct externalities... it also has an important function to perform in reducing transaction costs—notably by creating property rights—and thus in enabling or facilitating, as distinct from simulating, market processes.").
\textsuperscript{135} See Calabresi and Melamed, 85 Harv L Rev at 1110 ("[A] very common reason, perhaps
1. Modified no injury rule.

First, we consider a modified no injury rule that limits the injunctive power of third-party claimants. This rule would require that transferring parties give notice of their transfers (reducing third-party information costs) and permit third-party objections, but would only allow third parties to enjoin transfers when they have demonstrable evidence that the transfer will cause them tangible harm.

Under the current no injury rule, a protestor can prevent a proposed transfer merely by filing a claim that "substantial" injury will result from the transfer. He need not have evidence that the injury will actually occur. Rather, the applicants seeking transfer, for example, a water district and a farmer, bear the burden of establishing "absence of injurious results" from the proposed change. Absence of evidence that the change will cause injury is not sufficient. Rather, the applicant needs to introduce positive evidence that the change will not cause injury. Given uncertainties that are often present in water transfers, such proof is difficult and expensive to produce.

Because many third parties might claim injury and seek injunctions, contractual solutions also might prove difficult due to holdout problems.

Thus, in a case where it is impossible to determine whether the injury will happen prior to the actual transfer, the transfer will be denied. For example, a Colorado court found that a water court could not grant a transfer application if it was unable to assess what the effect of the transfer would be until after the water rights had been in fact changed. Therefore, although the transfer might not have caused any injury, because the applicant was unable to prove that it would not cause injury, the applicant was not approved for the transfer.
This high evidentiary burden creates high transaction costs which deter beneficial transactions. It is subject to too many false positives—finding harm where none exists. However, on the flip side, a low evidentiary burden is subject to false negatives—failure to find harm where harm exists. Hence, inefficient transfers might proceed. Thus, in the abstract, it is difficult to assess which burden might be more efficient.

Put in context, however, placing the burden on third parties (which operates basically as a presumption in favor of the transferring parties) makes sense on both efficiency and policy grounds. First, we consider the tension in the current allocation of water rights. The majority of the rights are vested in the agricultural industry, which employs water in low-value uses relative to higher-value urban uses. Hence, the current value of transfers should be efficient, creating large enough gains to compensate all parties who are injured by the transfer. Yet, these apparently efficient transfers are not occurring under the current regime. Thus, transaction costs at present must be sufficiently high to deter otherwise efficient transfers. While these transaction costs to a large extent might be the product of the costs of actually moving water from one use to another, the rigidity of the current legal framework seems at least to be contributing to these high transaction costs.

Thus, there are grounds for a presumption in favor of the transfer, a presumption that assumes that the value of the transfers is sufficient to compensate any unforeseen injury after the fact. In a world with no transaction costs, the third parties would simply ask for a cut of the gains of this efficient transaction and not enjoin the transaction. However, high information and negotiation costs seem to be deterring such transactions. Thus, we shift the “transfer right” entitlement from third parties into the hands of the transferring parties, so that they do not need to incur the transaction costs required to “buy” the transfer entitlement from third parties claiming injury. Second, as noted in the discussion of the recent California Water Deal, there is growing support for increased transfer rights as a matter of policy. There is a growing recognition that the status quo allocation of water rights is not sustainable and that a legal rule allowing for greater transfer rights, even at the cost of some failures to enjoin inefficient transfers, is warranted. This policy makes economic sense. The shift in transfer rights would do much to enhance the efficiency of the allocation scheme as a whole. Thus, even if a shift in transfer rights leads to some inefficient transfers, as a whole the benefits of transfer should outweigh the costs.

142 See Part II.A.
Also, shifting the burden of proof should reduce the costs of the injunction hearings. Under the current regime, parties seeking to make a transfer must develop evidence regarding a speculative injury that someone else might suffer. The shift in burden to the objector reduces information costs not only because proving likely injury is less costly than proving absence of injury, but also because the third party is in a better position than the transferring parties to have evidence about the harms that the transfer will cause to his water right. The proof will still be technical and costly to develop, but at least the burden would rest on the party with the best access to information. In addition, this burden squares with our usual approach to injunctions: there is no legal intervention unless the plaintiff has proof that the actions of third parties will cause substantial harm.

Although the modified no injury rule tips the balance in favor of transferring parties, as now the objector is faced with incurring significant costs in order to block the transfer, the objector can recover damages should the transfer inflict real injury on the objector. In addition, we might leave open the possibility of a later injunctive remedy for the objector if he is able to prove incompensable harm after the transfer has been initiated. This shift in the burden of proof, coupled with a liability rule if the transfer does in fact result in injury, should reduce the current bias toward vested rights, allow for more transfers between the agricultural industry and urban buyers, and ultimately allow water to be put to its most efficient uses.

Water transfers can also have negative environmental externalities. We can continue to allow a third-party objection right to transfers on behalf of the environment under the modified no injury rule, but we might also consider alternative solutions to the environmental tradeoffs inherent in water transfers. For example, the implementation of an environmental tax on water transfers might function to protect the environment from such injuries. Water banks can maintain “environmental water accounts” from which water is diverted to environmental purposes. By requiring the maintenance of such water accounts or by imposing a per-gallon tax, the government could generate sufficient revenues to purchase water to provide for environmental purposes or, in case of emergency, offset the cost of compensation for a governmental taking of water rights. Thus, we can avoid instances like the recent conflict between farmers and the federal government,

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which had reduced farmers’ water supply through application of the Endangered Species Act.\textsuperscript{144}

2. A liability rule for third-party damages.

The second rule, a liability rule for third-party damages that result from transfers, provides protections for water rights, but allows transfers to proceed that are efficient but might have been otherwise deterred by negotiation costs and holdout problems under the current no injury rule.\textsuperscript{145} This rule also provides incentives for transferring parties to take due care as they are likely the parties best able to mitigate third-party damages.\textsuperscript{146} It encourages them to take care in their transfers to properly quantify the water rights being transferred.

Justice Shenk of the California Supreme Court argued for a similar approach in his dissent in \textit{Herminghaus v Southern California Edison Company}:\textsuperscript{147} if a proposed change in water use will create a net societal gain, as the reservoir would have, the proper legal remedy is damages for injured third parties, not injunctions.\textsuperscript{148} The costs and benefits should be weighed. The farmers should have received damages equal to the cost of irrigation facilities that would be needed in the wake of the change in water flows.\textsuperscript{149}

This proposed regime, as mentioned above, shifts the “transfer right” entitlement from third parties (from whom transferring parties could buy the entitlement) to the transferring parties themselves. Under this regime, a third party only loses one important right—the right to bargain for the subjective cost of the injury that results from a transfer. Under the liability rule, the third party can get no more than the court’s objective value of the injury. The shift in burden of proof, with the introduction of a liability rule, is not an argument that water rights should shift from a property rights regime to a liability regime. Rather, given the interdependency of water rights, this solution merely tries to balance two competing ends. It weights the fact that water rights will be exploited most efficiently when they are protected as property rights against the fact that increased transfer rights are nec-

\begin{itemize}
\item \textsuperscript{144} See \textit{Tulare Lake Basin Water Storage District v United States}, 59 Fed Cl 246 (2003) (holding the government liable for a taking for imposing water restrictions to protect salmon).
\item \textsuperscript{145} Such a tort action is analogous to a taking with deferred compensation. See Calabresi and Melamed, 85 Harv L Rev at 1108–09 (cited in note 12).
\item \textsuperscript{146} Posner, \textit{Economic Analysis of Law} § 6.1 at 167 (cited in note 35) (discussing incentives to take due care).
\item \textsuperscript{147} 200 Cal 81, 252 P 607 (1926), superseded on other grounds by \textit{State v Superior Court of Riverside County}, 78 Cal App 4th 1019, 93 Cal Rptr 2d 276 (2000).
\item \textsuperscript{148} See \textit{Superior Court}, 252 P at 627 (Shenk dissenting) (arguing that because the court can determine money damages that will adequately compensate the plaintiff for the loss sustained by the change in water use, an injunction should not be granted).
\item \textsuperscript{149} See id.
\end{itemize}
necessary in order to allow water rights to move to their highest-value uses.

D. Agriculture as a Cultural Resource

A likely outcome of increased transfer rights is the economic dislocation of agricultural communities losing water rights. Land will be fallowed, farmers will seek work elsewhere, and the agricultural community that exists today will either diminish or disappear. As long as water transfers are efficient, those who sell their water rights should be made better off by the transfers.

However, as a general matter, Westerners, even those completely unrelated to water right transfers, value the agricultural community as a cultural resource. The introduction of transfer rights might thus inflict third-party costs on those who value agricultural communities as a cultural resource as agricultural communities start to disappear. In addition, there seems to be some support for the view that water is a cultural resource, and when treated like a commodity that can be bought and sold it loses its cultural value.

However, these losses are unlikely sufficient to warrant a change in the proposed regime suggested above. First, if we assigned a hard value to these cultural values and then “taxed” water transfers to force transferring parties to internalize the costs of the transfer to these cultural resources, the gains are still likely to outweigh the costs. Second, water transfers will likely increase the value of cities as a cultural resource. The loss of cultural resources of agricultural communities and water as a noncommodity might be offset by the gain to cities.

Finally, agricultural communities could be protected through direct subsidies. The introduction of greater transfer rights need not result in any change in overall Western distributorial goals. The protection of agricultural communities can still remain a high priority. The means of the protection, however, must shift from restraints on alienation to some other form of subsidy.

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150 For a discussion of contingent valuation of cultural resources (for example, the existence of traditional farming communities), see generally Richard A. Epstein, The Regrettable Necessity of Contingent Valuation, 27 J Cultural Econ 259 (2003).

151 See, for example, Joseph L. Sax, Understanding Transfers: Community Rights and the Privatization of Water, 1 W-Nw J Envir Law-Policy-Thought 13, 14 (1994).

152 See, for example, Dorothy Green, State’s Water Cannot Be Privately Owned, LA Times B12 (Jan 1, 2004):

In California, water is owned by the people. A water right is the right to use the water. It is not a property right. . . . I, for one, would not want to live where such an important life necessity becomes market-driven—to increase corporate profits—and is available only to those who can afford to pay.

153 See text accompanying note 83.
CONCLUSION

The current regime of the Colorado River is under pressure to change. New demands require water right transfers. The current no-injury rule, however, makes such transfers difficult and costly. The recent California River Water Delivery Agreement illustrates the importance of this need for greater transfer rights. The agreement inflicts injury on farmers of the Imperial Valley. It indicates that as transfers become a growing necessity, the no injury rule is becoming a weakening prohibition.

Transfer rights, once introduced, can either be controlled by the state, as they were in the California Water Delivery System, or held by vested right holders. While there are important arguments for both the state and markets, given the strengths of the market mechanisms, when checked by legal rules to protect third parties, the market mechanism seems a better choice.

Water markets provide hope for a more optimal use of the scarce resources of the Colorado River. Through the price mechanism, water rights will be put to their most efficient uses. Serious third-party effects can be mitigated through the adoption of a modified no injury rule, which allows third parties to enjoin transfers where clear injury will result from the transfer, and a liability rule that provides for damages if an injury results from the transfer itself. This regime should reduce transaction costs and provide for a more efficient and, in the long run, beneficial use of the scarce water resources of the American West.