

COMMENTS

REFORMING A WESTERN INSTITUTION: HOW EXPANDING THE PRODUCTIVITY OF WATER RIGHTS COULD LESSEN OUR WATER WOES

BY

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Western states are facing ever-increasing demand for limited water resources. Because much of the water in Western states is used for irrigated agriculture, improving irrigation efficiency can be a significant means to expand the productivity of water rights. This Comment examines four states, Oregon, Washington, California, and Montana, whose legislatures have enacted conserved water legislation in order to promote irrigation efficiency and conserve water for additional uses. Conserved water legislation modifies the prior appropriation system of water rights by allowing a water rights holder who implements efficiency improvements to obtain a right in conserved water. This Comment argues that the Colorado legislature should enact similar legislation. By creating a viable incentive to improve irrigation efficiency, Colorado, like the four other Western states, could expand the productivity of water rights. Conserved water legislation helps states meet modern diverse demands for water, including balancing growing communities' needs for water while also maintaining irrigated

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agriculture and instream flows for fishing, recreation, wildlife, and pollution dilution.

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I. INTRODUCTION

Water is a finite resource, especially in the Western United States. Water scarcity has been at the forefront of Western water law ever since its emergence.¹ The historical underpinnings of Western water law, however,

¹ See George W. Pring & Karen A. Tomb, *License to Waste: Legal Barriers to Conservation and Efficient Use of Water in the West*, 25 ROCKY MTN. MIN. L. INST. 25-1, 25-1 to 25-2, 25-8 to 25-9 (1979) (noting that pressures on Western water supplies that began to emerge in the 1970s have highlighted the weaknesses in Western water law); see also Craig Bell, *Promoting Conservation by Law: Water Conservation and Western State Initiatives*, 10 U. DENV. WATER L. REV. 313, 313 (2007) (describing how the combination of the region's climate and booming

were premised on harnessing water for development, encouraging out-of-stream use, and diligently protecting vested rights²—principles that often conflict with conservation. As Westerners face the growing reality of even scarcer water supplies, the relatively recent onset of conclusive data on climate change, and rapidly growing populations, many states are confronted with tough choices to determine how to ensure an adequate supply of water.

Although the majority of the land area of the Western states is arid or semi-arid,³ ninety percent of the consumptive use of fresh water in the West supports agriculture.⁴ Whether Western states should continue to irrigate in areas that receive less than average rainfall is a legitimate question; however, that issue is beyond the scope of this Comment. The fact remains that agriculture exists in the West, and although there have been numerous agriculture-to-urban water transfers,⁵ the institution of American agriculture in the West is not going anywhere fast. With the continuance of agriculture in the West, there is potential for tremendous water savings through conservation. Studies have shown that efficiency improvements to irrigated agriculture have the potential to create the greatest conservation of water compared to improved efficiencies in other water uses.⁶ Techniques to improve agricultural efficiency include using drip irrigation, laser leveling fields, water delivery scheduling, mixing crops and planting patterns, and reducing seepage and evaporation through ditch lining and pipes.⁷ Thus, with the implementation of irrigation efficiency improvements, agriculture can

population create an important need for conservation of limited water supplies); Janet C. Neuman, *Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use*, 28 ENVTL. L. 919, 921 (1998) (highlighting that the scarce water supply that existed when Western water law was formed still exists, but that this scarcity is now pressured by rapidly growing population).

² See CHARLES F. WILKINSON, *CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST* 231–35 (Island Press, 1992) (describing the emergence of the prior appropriation doctrine from mining customs during the expansion of Western settlement).

³ See WORLD AGRIC. OUTLOOK BD., U.S. DEP'T OF AGRIC., AGRIC. HANDBOOK NO. 664, MAJOR WORLD CROP AREAS AND CLIMATE PROFILES 19 (1994).

⁴ Glenn Schaible & Marcel Aillery, *Irrigation Water Management*, in ECON. RESEARCH SERV., U.S. DEP'T OF AGRIC., AGRICULTURAL RESOURCES AND ENVIRONMENTAL INDICATORS 134, 134 (2006), available at <http://www.ers.usda.gov/publications/arei/eib16/eib16.pdf>.

⁵ TERESA A. RICE & LAWRENCE J. MACDONNELL, COLO. WATER RES. RESEARCH INST., AGRICULTURAL TO URBAN WATER TRANSFERS IN COLORADO: AN ASSESSMENT OF THE ISSUES AND OPTIONS 1–3 (1993), available at <http://www.cde.state.co.us/artemis/ucsu6/UCSU61410177INTERNET.pdf> (noting a general trend in the West where municipalities purchase agricultural rights and transfer the rights for use in the urban area, and describing several examples of such transfers in Colorado).

⁶ See Mark Honhart, Comment, *Carrots for Conservation: Oregon's Water Conservation Statute Offers Incentives to Invest in Efficiency*, 66 U. COLO. L. REV. 827, 828 (1995) (noting that one study suggests that a seven percent increase in agricultural water use efficiency could support a doubling of all other uses of water, whereas conservation measures in other sectors would not have nearly the same impact).

⁷ Michael A. Gheleta, Casenote, *Water Use Efficiency and Appropriation in Colorado: Salvaging Incentives for Maximum Beneficial Use*, 58 U. COLO. L. REV. 657, 658 (1988).

remain an important institution in the West, but it can also be a means to free up water for additional uses.

Improving irrigation efficiency to release water for other uses is not as simple as it may seem. In the West, rights to use water are based on the system of prior appropriation.⁸ Prior appropriation, like irrigated agriculture, is a Western institution, and its complex laws may hinder water conservation.⁹ For example, under prior appropriation, an appropriator obtains a water right from the state for a fixed amount of water necessary to accomplish a beneficial use.¹⁰ Any surplus water above the amount needed to accomplish the beneficial use is technically not part of the water right; thus the state may reduce the amount of the water right to conform to the amount of water actually necessary to accomplish the beneficial use.¹¹ Thus, if a farmer improves irrigation efficiency, meaning he or she accomplishes the same beneficial use with less water, he or she is not entitled to use the conserved water because the water right only extends to the amount of water necessary to accomplish the beneficial use. As a result, prior appropriation laws create a disincentive to improve efficiency because the appropriator is not legally entitled to the conserved water.¹²

Some Western states have adapted their prior appropriation laws to avoid the harsh consequences under traditional prior appropriation law by enacting conserved water statutes.¹³ Conserved water statutes modify prior appropriation law to allow an appropriator to implement efficiency measures that conserve water and grant the appropriator a separate water right in the conserved water to use, sell, lease, or otherwise transfer.¹⁴ In some states, a percentage of the conserved water must go to the state for protection as instream flows or to supply other public purposes.¹⁵ By rewarding efficiency by creating a new water right, appropriators have an incentive to become more efficient. However, because efficiency improvements may impact other users on the stream, the state must evaluate a conservation plan to ensure that the conservation measures will not adversely affect other appropriators on the stream.¹⁶ The result is a

⁸ A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 5:1 (2010); see Honhart, *supra* note 6, at 828 (explaining that the prior appropriations doctrine has become an obstacle to tackling the problem of inefficient water use in the West).

⁹ Pring & Tomb, *supra* note 1, at 25-1.

¹⁰ TARLOCK, *supra* note 8, § 5:30 ("The basic principle of prior appropriation is that a person may acquire an exclusive right to use a specific quantity of water by applying it to a beneficial use . . ."). The doctrine of beneficial use is a murky judicial concept historically characterized by three basic functions. First, the beneficial use emphasized that continued use of the water was the basis of a water right. *Id.* § 5:66. Next, it implied that the water use was limited to productive purposes. *Id.* Finally, it allowed courts to curtail wasteful uses of water. *Id.*

¹¹ See *id.* § 5:87.

¹² See, e.g., *Se. Colo. Water Conservancy Dist. v. Shelton Farms, Inc.*, 529 P.2d 1321, 1325, 1327 (Colo. 1974).

¹³ See *infra* Part III.

¹⁴ See *infra* Part III.

¹⁵ See *infra* Part III.C.

¹⁶ See *infra* Part III.C.3.

system that rewards efficient use of water, frees water up for additional uses, and helps states meet increasing water demand—all without harming other water users.

Nonetheless, some states, including Colorado, have rejected measures to reward conservation despite the continuing need for water.¹⁷ Population statistics indicate that Colorado is the third fastest growing state in the nation.¹⁸ Between 1990 and 2000, Colorado's population grew over thirty percent.¹⁹ The growth has slowed down somewhat, but between 2000 and 2009, the population still grew by nearly seventeen percent.²⁰ By 2050, Colorado's population is estimated to more than double from its current 4.8 million to 10 million people.²¹ Colorado uses eighty-five percent of its water for irrigation.²² Improving irrigation efficiency could be a significant means of freeing up water for under-watered crops, other consumptive uses, and improving instream flows.²³ Although Colorado legislators have considered legislation several times that would allow an appropriator to

¹⁷ See *infra* Part IV.C.

¹⁸ U.S. CENSUS BUREAU, 2000 CENSUS, FIGURE 1: PERCENT CHANGE IN RESIDENT POPULATION FOR THE 50 STATES, THE DISTRICT OF COLUMBIA, AND PUERTO RICO: 1990 TO 2000, *available at* <http://www.census.gov/population/www/cen2000/maps/files/map01.pdf>. The figures are based on population growth between 1990 and 2000, which are somewhat outdated; however the census has not published another long-term assessment of population since 2000. It will likely publish an assessment of population change from 2000 to 2010 in 2011. Other sources indicate that Colorado's population has continued to grow. See, e.g., News Release, U.S. Census Bureau, Utah Is Fastest-Growing State (Dec. 22, 2008), *available at* <http://www.census.gov/newsroom/releases/archives/population/cb08-187.html> (reporting population growth between July 1, 2007 and July 1, 2008).

¹⁹ U.S. CENSUS BUREAU, *supra* note 18.

²⁰ U.S. Census Bureau, State & County Quick Facts: Colorado, <http://quickfacts.census.gov/qfd/states/08000.html> (last visited Feb. 13, 2011).

²¹ Todd Doherty, *CWCB's Alternative Agricultural Water Transfer Methods (ATM) Grant Program*, COLO. WATER Jan.–Feb. 2010, at 2, *available at* http://www.cwi.colostate.edu/newsletters/2010/ColoradoWater_27_1.pdf.

²² Memorandum from Rick Brown & Todd Doherty, Intrastate Water Mgmt. & Dev., to Colo. Water Conservation Bd. Members (Mar. 10, 2008), *available at* <http://cwcbweblink.state.co.us/WebLink/DocView.aspx?id=121783&page=1&dbid=0> [hereinafter Brown & Doherty] (introducing a draft report entitled Meeting Colorado's Future Water Supply Needs: Opportunities and Challenges Associated with Potential Agriculture Water Conservation Measures prepared by the Colorado Water Conservation Board).

²³ COLO. AGRIC. WATER ALLIANCE, MEETING COLORADO'S FUTURE WATER SUPPLY NEEDS 2-2 (2008), *available at* http://www.agwaterconservation.colostate.edu/Ag_water_conservation_paper_draftSept11.pdf. The Colorado Water Conservation Board has implemented some conservation plans and has goals to continue to work to increase irrigation efficiencies. See generally COLO. WATER CONSERVATION BD., COLORADO REVIEW: WATER MANAGEMENT AND LAND USE PLANNING INTEGRATION (2010), *available at* <http://cwcbweblink.state.co.us/weblink/0/doc/139880/Electronic.aspx?searchid=c5b7f207-ff18-4096-9a70-035a47b9cb1b> (describing the role of the Colorado Conservation Board, explaining the requirement under the Colorado Water Conservation Act of 1991 that water providers develop Water Conservation Plans approved by the Colorado Water Conservation Board, and providing some examples of specific conservation plans).

obtain a right in conserved water,²⁴ they have rejected every bill.²⁵ However, it has been over fifteen years since the Colorado House of Representatives rejected the last attempt at conserved water legislation,²⁶ and Colorado's water woes have not lessened. In fact, water scarcity has only become more imminent in the state.²⁷

This Comment examines how conserved water statutes reward appropriators for becoming more efficient and argues that Colorado should enact similar legislation in order to further its policy of maximum utilization of water resources. Part II provides a brief description of the prior appropriation system that governs water rights in the West. Part III examines the conserved water statutes that four Western states have implemented, and reviews the successes and failures of the most comprehensive and widely used program in Oregon. Part IV provides a brief overview of the basic principles of Colorado water law, the failed conserved water legislation, and arguments against reconsidering such legislation. Part V argues that conserved water legislation could integrate with Colorado's prior appropriation system and provides basic guidelines on how legislation could work in Colorado. This Comment concludes that the most comprehensive, efficient, and effective way to conserve water in Colorado to help meet its growing needs is through conserved water legislation that promotes and rewards efficient water use.

II. THE DOCTRINE OF PRIOR APPROPRIATION: A WESTERN INSTITUTION

The doctrine of prior appropriation originated in the Western United States out of necessity to protect water rights for miners in the mid-nineteenth century.²⁸ To this day, most states west of the one-hundredth meridian use prior appropriation to allocate water rights.²⁹ The doctrine of prior appropriation is premised on three main concepts: 1) first in time,

²⁴ See Gheleta, *supra* note 7, at 674–75, 675 n.85 (noting that bills were introduced in the Colorado General Assembly during various sessions including S. 126, 55th Gen. Assemb., 2d Sess. (Colo. 1986), S. 95, 55th Gen. Assemb., 1st Sess. (Colo. 1985), and S. 161, 54th Gen. Assemb., 2d Sess. (Colo. 1984)). The latest attempt was Representative Tim Foster's bill to the House Committee on Agriculture, Livestock, and Natural Resources on Jan. 15, 1993. See H.R. 1158, 59th Gen. Assemb., 1st Sess. (Colo. 1993). It was postponed indefinitely on Feb. 4, 1993. Honhart, *supra* note 6 at 836–37, 836 n.63.

²⁵ Honhart, *supra* note 6, at 836 ("The Colorado legislature has rejected several proposals to grant rights in salvaged water.").

²⁶ See Gheleta, *supra* note 7, at 675 n.85. In this time period, the Colorado legislature has considered bills containing incentives, such as grant programs, for the creation of conserved water in agriculture. See, e.g., H.R. 1111, 63d Gen. Assemb., 1st Sess. (Colo. 2010) (proposing tax credits for conserving agricultural water); S. 125, 67th Gen. Assemb., 1st Sess. (Colo. 2009) (continuing appropriations for agricultural water sustainability).

²⁷ Colo. Water Conservation Bd., *Water Supply Planning*, <http://cwcb.state.co.us/water-management/water-supply-planning/Pages/main.aspx> (last visited Nov. 14, 2010).

²⁸ TARLOCK, *supra* note 8, § 5:1.

²⁹ *Id.* ("Prior appropriation has been adopted in whole or in part in the arid and semi-arid regions of the United States . . .").

first in right;³⁰ 2) beneficial use without waste;³¹ and 3) use it or lose it.³² Although the doctrine in practice may seem like an unchanging institution of Western water law, it is not entirely immune to modification.³³ For example, many states have modified the doctrine within the last twenty years in order to integrate principles of conservation and changing needs for water, such as preserving instream flows for recreation, fishing, wildlife, and pollution dilution.³⁴

First in time, first in right refers to the priority system of the doctrine of prior appropriation.³⁵ Appropriators are organized based on the date of their appropriation; the senior water rights holder has the earliest priority date and is first in line to receive his or her entire water right depending on water availability.³⁶ Thus, the priority system manages water in times of shortage.³⁷

Second, the water rights holder must put the water to beneficial use without waste.³⁸ Beneficial use is a murky concept. Although some state legislatures have attempted to define it, courts have been the primary entities to construe the scope of the term.³⁹ Essentially, beneficial use means the non-wasteful use of water for productive purposes.⁴⁰ Courts or agencies have the ability to cut back a water right by the amount of water an appropriator is wasting.⁴¹ Consequently, an appropriator has no right to waste water,⁴² nor to use water for a different use without prior state approval.⁴³

³⁰ *Id.* § 5:30 (“Water rights are ranked in the order that the right was acquired, and this priority schedule is used to distribute available water in times of shortage.”).

³¹ *Id.* § 5:66 (“Water can only be appropriated for a beneficial use, and beneficial use is necessary to hold an appropriative right.” (footnote omitted)).

³² *Id.* § 5:88 (“Statutes in several western states provide that if water is not to be put to a beneficial use for a prescribed period of time, the right is lost and the water again becomes public subject to appropriation by others.”).

³³ *Id.* § 5:1 (“[A] number of modern developments . . . are changing the foundations of prior appropriation.”).

³⁴ See generally Charles F. Wilkinson, *Western Water Law in Transition*, 56 U. COLO. L. REV. 317 (1985) (providing an overview of some states’ early changes to prior appropriation); Charlton H. Bonham, *Perspectives from the Field: A Review of Western Instream Flow Issues and Recommendations for a New Water Future*, 36 ENVTL. L. 1205, 1208, 1210–11, 1214–15 (2006) (explaining Western states’ current approaches to instream flow rights against the backdrop of prior appropriation).

³⁵ See TARLOCK, *supra* note 8, § 5:30.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.* § 5:66.

³⁹ *Id.* (“Although legislatures have occasionally attempted definitions of beneficial use or classified uses beneficial or non-beneficial, the determination of beneficial use is primarily a judicial function.”).

⁴⁰ *Id.* The state manages water rights. A water right decree will specify a particular beneficial use for the water. See, e.g., Wash. Dep’t of Ecology, Water Rights, <http://www.ecy.wa.gov/programs/wr/rights/water-right-home.html> (last visited Feb. 13, 2011).

⁴¹ TARLOCK, *supra* note 8, § 5:66.

⁴² *Id.* § 5:68 (“The principal function of the beneficial use doctrine is to prevent waste.”).

⁴³ *Id.* § 5:30 (“The basic principle of prior appropriation is that a person may acquire an exclusive right to use a specific quantity of water by applying it to a *beneficial use*” (emphasis added)). Using water for a different purpose than the beneficial use of the water

Third, the use it or lose it component requires appropriators to put their water to continuing beneficial use.⁴⁴ A state can reduce or eliminate a water right based on the amount that has not been put to use.⁴⁵ In other words, a water right is a defeasible usufructuary right; the right is only valid if put to continuing beneficial use. States differ somewhat in their approaches to these three concepts, yet these basic underpinnings are principal components of prior appropriation.

Since the mid-nineteenth century, the doctrine of prior appropriation has led to a working system that provides notice and certainty to water rights holders and interested parties.⁴⁶ When originally adopted, the primary purpose of the doctrine was to provide assurance for appropriators who invested in means to consumptively use water for out-of-stream purposes.⁴⁷ However, states have modified the doctrine to meet modern needs, such as *in-situ*—or instream—purposes.⁴⁸ The beneficial use requirement provides a prime example. In the late nineteenth century, some states enumerated specific beneficial uses in their statutes or constitutions to include domestic uses, some industrial uses, and agriculture.⁴⁹ Recently, states have supplemented their lists to include modern uses such as instream flows for recreation, fishing, wildlife, and pollution dilution.⁵⁰ Although prior appropriation provides a basic structure for ordering rights and creating certainty, states can and have shaped the doctrine to adapt to changing needs.⁵¹

The extent, however, to which a state has narrowly construed aspects of the doctrine through legislation or case law may limit its flexibility to encompass new water uses. Therefore, conserved water legislation must not

right requires state approval. *See, e.g.*, OR. REV. STAT. § 540.510 (2009) (“[A]ll water used in this state for any purpose shall remain appurtenant to the premises upon which it is used and no change in use or place of use of any water for any purpose may be made without compliance with [state procedures].”).

⁴⁴ TARLOCK, *supra* note 8, § 5:87 (“Rights may be lost by either abandonment or forfeiture, depending on the statute in a jurisdiction.”); *id.* § 5:88 (“Forfeiture is the involuntary relinquishment of a property right due to the failure to comply with a statutorily imposed condition.”).

⁴⁵ *Id.* § 5:87.

⁴⁶ *See id.* § 5:30.

⁴⁷ *See generally* ROBERT G. DUNBAR, FORGING NEW RIGHTS IN WESTERN WATERS 59–72 (1983) (explaining how many early water diversions were for out-of-stream uses such as agriculture, mining, and stock-watering). Physical diversions have long been an integral part of prior appropriation and originally served as valid notice of appropriation to other water users. TARLOCK, *supra* note 8, § 5:65.

⁴⁸ TARLOCK, *supra* note 8, § 5:65 (“Instream flow appropriations are authorized in Arizona, Colorado, Idaho, Nevada and Wyoming.” (footnotes omitted)).

⁴⁹ Neuman, *supra* note 1, at 924.

⁵⁰ *Id.*; *see, e.g.*, MONT. CODE ANN. § 85-2-102(4)(a) (2009) (defining “beneficial use” as “a use of water for the benefit of the appropriator, other persons, or the public, including but not limited to agricultural, stock water, domestic, fish and wildlife, industrial, irrigation, mining, municipal, power, and recreational uses”).

⁵¹ *See* TARLOCK, *supra* note 8, § 5:1 (“[A] number of modern developments . . . are changing the foundations of prior appropriation.”).

only conform to the general principles of prior appropriation, but more specifically, it must comport with how that doctrine has been codified and interpreted by the legislature and judiciary of a particular state. Thus, drafters of conserved water legislation may need to tailor their legislation to fit within a particular state's legal framework.

III. CONSERVED WATER STATUTES: INCENTIVES TO MEET INCREASING DEMAND

Recognizing that conservation and efficient use of water resources is essential to the continuous supply of water to meet increasing demand, four states have enacted legislation that rewards appropriators who conserve water. The existence of conserved water legislation in prior appropriation states demonstrates that conservation can align with the principles of priority and beneficial use. This Part begins with an explanation of how conserved water statutes integrate with state prior appropriation laws. Next, it examines three states—California, Montana, and Washington—that have enacted some form of conserved water legislation. Finally, it offers an in-depth analysis of a fourth state—Oregon—whose conserved water program has been hailed as a particularly effective means to augment instream flows and spread conserved water to other uses.⁵²

A. How Conserved Water Statutes Integrate with Principles of Prior Appropriation

This Part examines two ways that conserved water legislation simultaneously expands yet works within the bounds of prior appropriation principles. First, conserved water statutes help alleviate one of the greatest, and perhaps unintended consequences, of prior appropriation—the disincentive to conserve water. Second, because prior appropriation protects vested rights, a conservation plan must not injure existing rights, or if so, the conserver must modify the plan to mitigate injury to other appropriators.

1. Addressing the Disincentive to Conserve

As explained above, the doctrine of prior appropriation creates a disincentive to conserve because any surplus water that remains after applying water to a beneficial use is not part of an appropriator's water right.⁵³ Therefore, not surprisingly, prior appropriation principles actually create incentives to use as much water as possible to ensure continuance of

⁵² BRUCE AYLWARD, RESTORING WATER CONSERVATION SAVINGS TO OREGON RIVERS: A REVIEW OF OREGON'S CONSERVED WATER STATUTE 33 (2008).

⁵³ See *supra* Part II.

the amount of water in the right.⁵⁴ Furthermore, the least costly methods of irrigation require the most amount of water and are very inefficient.⁵⁵ Implementing efficiency measures such as drip irrigation and laser leveling of fields is very costly in comparison.⁵⁶ Faced with a choice of continuing older, less efficient irrigation systems that use more water or paying to install efficient irrigation systems that may result in cutbacks by the state to the amount of a water right, it becomes clear why the status quo continues despite scarcer water resources.

By enacting conserved water statutes, legislatures have addressed this inherent disincentive. The statutes allow the appropriator to obtain a right in the water conserved—with the same priority date as the original right, subject to review and possible reduction based on injury to existing rights.⁵⁷ Most states require the water user to obtain the water resources department's approval of the conservation measures in order to verify the water savings and review for injury to other water users.⁵⁸ Although conserved water legislation expands the doctrine of prior appropriation, the legislation ultimately must fit within the bounds of state codified prior appropriation laws. Return flow is one example of how prior appropriation principles limit the amount of water a water rights holder may lawfully conserve.⁵⁹

2. How Return Flow Impacts the Scope of the Conserved Right

When an appropriator attempts to change a water right, the doctrine of prior appropriation protects junior appropriators by requiring maintenance of stream conditions, including return flow.⁶⁰ If an appropriator alters stream

⁵⁴ TARLOCK, *supra* note 8, § 5:70 (“The need to use water to hold a right by use has been criticized as inefficient because it encourages premature development and creates a disincentive to use water more efficiently because the right may be partially lost.” (footnote omitted)).

⁵⁵ See Schaible & Aillery, *supra* note 4, at 136, 141.

⁵⁶ See *id.* at 136–37, 139, 141; see also TARLOCK, *supra* note 8, § 5:19 (“It can be very costly to line ditches and invest in new irrigation technologies. If demand for alternative uses of the water is low, it may be inefficient to mandate conservation.”).

⁵⁷ See, e.g., OR. REV. STAT. § 537.485(1) (2009).

⁵⁸ See *infra* Part III.B.

⁵⁹ See TARLOCK, *supra* note 8, § 5:73 (explaining that junior appropriators can object to any changes instream flow conditions, and senior appropriators have to respect court conditions on change applications). For a definition of “return flow,” see text accompanying *infra* note 66.

⁶⁰ TARLOCK, *supra* note 8, § 5:73 (“A junior appropriator has a right to the continuation of stream conditions as they existed at the time the junior appropriated the water.”). Tarlock explains that

[t]hree justifications have been put forward for protection of junior rights. First, a downstream junior cannot know what percentage of water that he uses is natural supplies and what percentage is return flows, and thus he cannot assess the risks of an upstream transfer. Second, protection of return flows is therefore necessary to encourage the full development of available supplies. Third, the effects of a transfer have been characterized as externalities and the rule forces the internalization of external costs, although return flows have also been characterized as positive externalities which can be destroyed by the senior without regard to the consequences of the transfer.

conditions such that a junior appropriator cannot obtain enough water to fulfill his or her right, the alteration may constitute *injury* to the junior user.⁶¹ When an appropriator proposes a conservation plan, the water resources department will not approve the plan if it adversely impacts the rights of other appropriators.⁶² A change in stream conditions, including decreased return flow, may injure existing appropriators if they rely on return flow to fulfill their right.

Each state defines return flow differently, but return flow is generally characterized as those waters that have completed their beneficial use and return, or are on their way back to the stream.⁶³ For example, return flow could include excess irrigation water after crop absorption that flows back to a river.⁶⁴ Many appropriators on overappropriated rivers rely on the return flow of upstream users in order to fulfill their water rights.⁶⁵ Return flow may decrease when appropriators install efficiency measures that use less water. Instead of flooding a field such that half of the water immediately returns to the stream, efficiency measures deliver water to the root of the plant in smaller amounts, allowing the plant to absorb what is applied.⁶⁶ Therefore, appropriators with a conservation plan have the burden of proof to demonstrate to the state water resources board that their plan does not injure existing rights.⁶⁷ The water boards will not approve a conservation plan unless the parties have agreed to mitigation for any injuries.⁶⁸

B. States that Have Successfully Enacted Conserved Water Statutes

Created in conformance with the basic principles of prior appropriation as codified in state laws, four Western states have enacted legislation aimed at promoting and rewarding conservation. These states include California, Montana, Washington, and Oregon. This Part provides an overview of the programs in California, Montana, and Washington. The following Part offers an in-depth look into Oregon's conserved water program. Although these states differ in their approaches, they share a broad policy in favor of conservation, and recognize the need for additional water rights to accommodate growth and protect instream flows.

Id. (footnotes omitted).

⁶¹ WELLS A. HUTCHINS, *WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES* 631–32 (Harold H. Ellis & J. Peter DeBraal eds., 1974).

⁶² See *infra* Part III.B–C.

⁶³ See TARLOCK, *supra* note 8, § 5:17 (citing *City of Boulder v. Boulder & Left Hand Ditch Co.*, 557 P.2d 1182, 1185 (Colo. 1977) (en banc) (“Return flow is not waste water. Rather it is irrigation water seeping back to a stream after it has gone underground to perform its nutritional function.”)).

⁶⁴ See *id.*

⁶⁵ *Id.* § 5:77.

⁶⁶ See Schaible & Aillery, *supra* note 4, at 134.

⁶⁷ See *infra* Part III.B.

⁶⁸ See *infra* Part III.C.

1. California

In 1979, California was the first state to adopt a conservation statute.⁶⁹ Section 1011 of the California Water Code (Section 1011) provides that any person with an appropriative right who accomplishes his or her stated beneficial use with less water than prescribed in the right is entitled to the conserved water.⁷⁰ A water rights holder who conserves water may sell, lease, exchange, or transfer the conserved water by complying with relevant state transfer requirements.⁷¹ The California State Water Resources Control Board (SWRCB) may require that any person who utilizes the conservation statute file periodic reports detailing the extent and amount of reduction of water use.⁷² The legislature defines “water conservation” as using “less water to accomplish the same purpose or purposes of use allowed under the existing appropriative right.”⁷³ If the conserver intends to transfer the right, the SWRCB will examine the proposed transaction for potential injury to existing rights.⁷⁴ By 2002, SWRCB had approved seven short-term transfers and no long-term transfers.⁷⁵ Unfortunately, due to funding and staffing issues, the SWRCB has not accumulated recent data on conserved water projects and transfers.⁷⁶

⁶⁹ 1979 Cal. Stat. 4046.

⁷⁰ CAL. WATER CODE § 1011(a) (West 2009) (“When any person entitled to the use of water under an appropriative right fails to use all or any part of the water because of water conservation efforts, any cessation or reduction in the use of the appropriated water shall be deemed equivalent to a reasonable beneficial use of water to the extent of the cessation or reduction in use.”).

⁷¹ *Id.* § 1011(b) (“Water, or the right to the use of water, the use of which has ceased or been reduced as the result of water conservation efforts as described in subdivision (a), may be sold, leased, exchanged, or otherwise transferred pursuant to any provision of law relating to the transfer of water or water rights, including, but not limited to, provisions of law governing any change in point of diversion, place of use, and purpose of use due to the transfer.”).

⁷² *Id.* § 1011(a) (“The board may require that any user of water who seeks the benefit of this section file periodic reports describing the extent and amount of the reduction in water use due to water conservation efforts. . . . Failure to file the reports shall deprive the user of water of the benefits of this section.”).

⁷³ *Id.*

⁷⁴ *Id.* § 1011(b).

⁷⁵ WATER TRANSFER WORK GRP., WATER TRANSFER ISSUES IN CALIFORNIA 10–11 (2002), available at <http://www.waterrights.ca.gov/watertransfer/Final%20Report%20-%20Water%20Transfer%20Group.pdf>. The report explains that a water company completed a short term transfer of 2,000 acre-feet for municipal and industrial uses in 1997. *Id.* Two years later, the company completed another short-term transfer of 2000 acre-feet, conserved from weed control. *Id.* As of 2002, a total of three companies had completed a total of seven short-term transfers. *Id.* As of 2002, two long-term transfer petitions have been filed. The first was never completed due to a breakdown in negotiations between interested parties. *Id.* In the second, the Imperial Irrigation District petitioned for a long-term transfer of 300,000 acre-feet annually to two different districts. *Id.* As of 2002, the petition was under review. *Id.*

⁷⁶ Div. of Water Rights, Cal. State Water Res. Control Bd., Water Rights Announcements, http://www.swrcb.ca.gov/waterrights/press_room/announcements/ (last visited Feb. 13, 2011) (“As a result of staffing reductions due to furloughs, the Division of Water Rights will no longer be able to conduct general research for the public.”).

Some commentators have concluded that the success of California's law is not clear because most transfers that occurred through the water conservation statute would have been achieved without the existence of the statute.⁷⁷ One commentator concluded that long-term investments in efficiency measures have been the result of more aggressive waste enforcement by the SWRCB, not conserved water legislation.⁷⁸ However, the existence of Section 1011 indicates that there is legislative interest that conserved water should be put to additional beneficial use. Although it currently may be a redundancy in California law, Section 1011 demonstrates legislative intent to conserve water and expand water rights, a concept that deserves more attention considering scarce water supplies in the arid West.

2. Montana

Montana followed suit twelve years after California.⁷⁹ Montana's simple one-section statute⁸⁰ on conserving water may be brief, but it contains the essential elements to successfully institute a conservation plan. The Montana legislature, in pursuit of its policy to conserve and make full use of water resources, provides that appropriators may obtain a right in water they salvage.⁸¹ The legislature defines the term "salvage" as "mak[ing] water available for beneficial use from an existing valid appropriation through application of water-saving methods."⁸² The statute provides that the Water Resources Department must approve if a salvager wants to use the salvaged water for any purpose or in any place other than what is stated in the

⁷⁷ Bell, *supra* note 1, at 315 (explaining that the impact of Section 1011 was "difficult to quantify"). Bell claimed that the conservation efforts used in Section 1011 transfers would have occurred even without the legislation, however, he did not elaborate on this point. *Id.*; Honhart, *supra* note 6, at 833–34 (examining a water transfer pursuant to Section 1011 and claiming that "[w]hile California's conserved water statute may have aided the Imperial-Metropolitan transfer, the agreed-upon measures might also have been effectuated without the statute"). Honhart explained that Imperial may have actually been legally obligated to invest in a more efficient delivery system because California's Water Resources Control Board had issued a finding that Imperial's appropriation was wasteful. *Id.* at 834. He claimed that without this finding, the agreement may never have been signed. *Id.*; see Andrew H. Sawyer, *Improving Efficiency Incrementally: The Governor's Commission Attacks Waste and Unreasonable Use*, 36 MCGEORGE L. REV. 209, 241 (2005) (suggesting that Section 1011 has helped break down resistance to water conservation).

⁷⁸ Honhart, *supra* note 6, at 835.

⁷⁹ Act of Apr. 1, 1991, ch. 308, 1991 Mont. Laws 740.

⁸⁰ MONT. CODE ANN. § 85-2-419 (2009).

⁸¹ *Id.* ("[H]olders of appropriation rights who salvage water may retain the right to the salvaged water for beneficial use.").

⁸² *Id.* § 85-2-102.

original appropriation decree.⁸³ Additionally, the salvager can sell or lease the salvaged water as long as the state approves.⁸⁴

Accessible data on the success of salvaged water efforts is limited. A representative from the state water rights division stated that the statute has had limited use, and that many water rights holders in the state have not taken advantage of the statute to improve irrigation efficiency.⁸⁵

3. Washington

The Washington legislature recognized the need for programs to conserve water, improve water use efficiency, and protect instream flows.⁸⁶ Pursuant to this driving policy, the Washington legislature enacted the Trust Water Rights Program in 1991.⁸⁷

An integral component of the Trust Program pertains to improving efficiency to conserve water.⁸⁸ The legislature provides that the state may enter into contracts to fund water conservation projects, which it defines as a project that “achieves physical or operational improvements that provide for increased water use efficiency in existing systems of diversion, conveyance, application, or use of water.”⁸⁹ Thus, a water rights holder may implement efficiency improvements with the assistance of state funds. The rights holder will then convey either a portion or the entire “net water savings” to the state.⁹⁰ The legislature defines “net water savings” as the “amount of water that is determined to be conserved and usable within a specified stream reach or reaches for other purposes *without impairment or detriment to other water rights* existing at the time that a water conservation project is undertaken.”⁹¹ Importantly, the state and the water rights holder negotiate to determine the amount of conserved water the water rights

⁸³ *Id.* § 85-2-419 (“Except for a short-term lease pursuant to 85-2-410, any use of the right to salvaged water for any purpose or in any place other than that associated with the original appropriation right must be approved by the department as a change in appropriation right in accordance with 85-2-402 and 85-2-436, if applicable.”).

⁸⁴ *Id.* (“Sale of the right to salvaged water must also be in accordance with 85-2-403, and the lease of the right to salvaged water must be in accordance with 85-2-408, 85-2-410, or 85-2-436.”).

⁸⁵ Interview with Terri McLaughlin, Mont. Dep’t of Natural Res. & Conservation, Water Rights Bureau Chief (Dec. 18, 2009).

⁸⁶ WASH. REV. CODE § 90.42.005(2)(b) (2008) (The legislature declared such programs “acceptable methods of addressing water uses because they can relieve current critical water situations, provide for presently unmet needs, and assist in meeting future water needs”).

⁸⁷ Act of May 21, 1991, ch. 374, 1991 Wash. Sess. Laws 1956-74 (codified as amended at WASH. REV. CODE § 90.42.005–.900); WASH. REV. CODE § 90.42.030 (2008); *see also* Bell, *supra* note 1, at 316 (describing Washington’s Trust Water Rights Program).

⁸⁸ WASH. REV. CODE § 90.42.030(2) (2008).

⁸⁹ *Id.* § 90.42.020(5). The right had to exist by July 28, 1991. *Id.*

⁹⁰ *Id.* § 90.42.030(2). This is only required if the “public benefits to be obtained require conveyance or modification of a water right.” *Id.*

⁹¹ *Id.* § 90.42.020(2) (emphasis added); *see also id.* § 90.42.040(4) (transfers subject to the no-injury rule).

holder may keep.⁹² The state holds the acquired water right in trust and can authorize its use for instream flows, municipal needs, irrigation, and other beneficial uses.⁹³ The trust water right has the same priority date as the original right, but as between the two, the trust right is inferior.⁹⁴ The program is run by the Washington State Department of Ecology (WSDE).⁹⁵

More recently, the Irrigation Efficiencies Grant Program (IEGP), which was developed in 2001, has worked in conjunction with the trust program to help increase the amount of water conservation projects in the state.⁹⁶ Together the Washington State Conservation Commission and WSDE administer IEGP.⁹⁷ Since 2001, WSDE has approved forty projects,⁹⁸ resulting in nearly 12,000 acre-feet of saved water, all of which has been transferred to the state to hold in trust as instream flows.⁹⁹ According to a report on its website, the IEGP has been considered a success due to its streamlined application process, the high numbers of users, and water conserved.¹⁰⁰

Two components of the trust IEGP make it unique compared to California and Montana's legislation. First, the Program focuses on instream flow protection;¹⁰¹ second, it involves greater state participation because the state is the primary financing body.¹⁰² Although the IEGP benefits the state as a means to allocate more water to demonstrated needs, it does not seem to offer much incentive to the water rights holder, unless the water rights holder is able to negotiate to keep a substantial portion of the net water saved. A water rights holder with outdated irrigation practices may favor a continuance of inefficiency instead of working with the state if there are no notable financial incentives.

These three states demonstrate a spectrum of methods and possibilities for rewarding conservation. Oregon's program is worth considering in greater depth because of its history, changes over time, and demonstrable successes.

⁹² See *id.* § 90.42.030(2) ("The amount [of the net water savings] to be conveyed shall be finitely determined by the parties, in accordance with the guidelines developed under RCW 90.43.050, before expenditure of state funds.").

⁹³ *Id.* § 90.42.040(1).

⁹⁴ *Id.* § 90.42.040(3). This is true "unless otherwise specified by an agreement between state and party." *Id.*

⁹⁵ *Id.* § 90.40.040; Bell, *supra* note 1, at 316.

⁹⁶ WASH. STATE CONSERVATION COMM'N, IRRIGATION EFFICIENCIES GRANT PROGRAM (2008), available at <http://www.scc.wa.gov/index.php/Download-document/435-2008-Irrigation-Efficiencies-Grant-Program-annual-report.html>.

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.* This equals about 51.8 cubic feet per second (cfs) of instantaneous flow. *Id.*

¹⁰⁰ See *id.* ("The Irrigation Efficiencies Program has been effective in implementing on-the-ground projects because they will partner with other grant money sources; it has a relatively simple application process and can make money available relatively quickly." (quoting Gary Smith)).

¹⁰¹ *Id.*

¹⁰² *Id.*

C. Oregon's Conserved Water Program: A Blueprint for Allocating Conserved Water

Oregon's conserved water program¹⁰³ is a prime example of how a state can encourage efficiency by creating a right in conserved water. The main purpose behind the conserved water program is to promote efficient water use in order to meet current and future instream and out-of-stream uses.¹⁰⁴ This Part begins with a brief history of the program. Next, it outlines how the program works to create rights in saved water. Finally, it examines the success of the program and some of the lessons the Oregon Water Resources Department (OWRD) learned along the way. Oregon's conserved water program has been hailed as the most thorough exploration of incentives for conserving water and protecting instream flows.¹⁰⁵

1. Lessons Learned from the Earlier Version of the Law

The Oregon legislature adopted its conserved water program in 1987.¹⁰⁶ Since 1987, the legislature amended the law several times to make the system more user-friendly for applicants.¹⁰⁷ By 1995, the legislature had adopted a comprehensive, useful, and effective system for allocating conserved water.¹⁰⁸

The language in the original law was the main limitation to the program's early success.¹⁰⁹ The original law defined "conservation" as "the reduction of the amount of water *consumed or irretrievably lost* in the process of satisfying an existing beneficial use achieved either by improving the technology or method for diverting, transporting, applying or recovering the water or by implementing other approved conservation measures."¹¹⁰ The legislature defined "conserved water" as the "amount of water, previously unavailable to subsequent appropriators, that results from conservation measures."¹¹¹ To prove the amount of water that was irretrievably lost under pre-conservation practices, the applicant had to prove that no other user could have appropriated the water conserved. With this language in place,

¹⁰³ OR. REV. STAT. §§ 537.455–.500 (2009); OR. ADMIN. R., ch. 690, div. 18 (2010).

¹⁰⁴ Or. Water Res. Dep't, Allocation of Conserved Water, http://www.oregon.gov/OWRD/mgmt_conserved_water.shtml (last visited Feb. 13, 2011) ("The primary intent of the law is to promote the efficient use of water to satisfy current and future needs—both out-of-stream and instream."); see OR. REV. STAT. §537.460(1) (2009) ("The Legislative Assembly finds and declares that conservation and efficient utilization of water benefits all water users, provides water to satisfy current and future needs through reduction of consumptive waste, improves water quality by reducing contaminated return flow, prevents erosion and allows increased in-stream flow.").

¹⁰⁵ AYLWARD, *supra* note 52, at 33.

¹⁰⁶ 1987 Or. Laws 411.

¹⁰⁷ See Honhart, *supra* note 6, at 845–47.

¹⁰⁸ See *id.* at 843–46 (summarizing the history of the conserved water statute).

¹⁰⁹ See AYLWARD, *supra* note 52, at 6–7.

¹¹⁰ 1987 Or. Laws 411 (emphasis added).

¹¹¹ *Id.*

six years passed and OWRD only received two applications, both of which they denied.¹¹²

In 1993, the legislature amended the statute, changing the definitions of conservation and conserved water.¹¹³ The legislature defined conservation as “the reduction of the amount of water diverted to satisfy an existing beneficial use achieved either by improving technology or method for diverting, transporting, applying or recovering the water or by implementing other approved conservation measures.”¹¹⁴ In turn, they defined conserved water as

that amount of water that results from conservation measures, measured as the difference between:

(a) The smaller of the amount stated on the water right or the maximum amount of water that can be diverted using the existing facilities; and

(b) The amount of water needed after implementation of conservation measures to meet the beneficial use under the water right certificate.¹¹⁵

There was a three to four year lag time until OWRD began receiving applications to use the program.¹¹⁶ From 1996 through 1999, the number of applications steadily grew.¹¹⁷ Since 2000, the OWRD has received about six applications per year.¹¹⁸

2. *How the Conserved Water Program Works*

The Oregon legislature sets forth a detailed scheme for appropriators who implement conservation measures to obtain a right in the water conserved, as long as there is no injury to existing appropriators. First, the user must submit an application explaining the proposed conservation plan.¹¹⁹ The plan must include the amount of water that can be diverted at his or her point of diversion, the amount of water needed to fulfill the appropriator’s beneficial use, the amount of water needed to mitigate injury to existing appropriators, and finally, the amount of water conserved after mitigation.¹²⁰ Next, the state allocates seventy-five percent of the conserved water, after mitigation for injury, to the applicant, and reserves twenty-five

¹¹² Honhart, *supra* note 6, at 844.

¹¹³ Act of Aug. 16, 1993, ch. 641, § 1, 1993 Or. Laws 158 (codified as amended at OR. REV. STAT. § 537.455 (1993)).

¹¹⁴ OR. REV. STAT. § 537.455(1) (1993).

¹¹⁵ *Id.* § 537.455(2); *see also* Honhart, *supra* note 6, at 845–46.

¹¹⁶ AYLWARD, *supra* note 52, at 10 (commenting that this lag was due in part to the formation of new organizations to promote market-based incentives for instream uses, like the Oregon Water Trust and the Deschutes Water Conservancy).

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ OR. REV. STAT. § 537.465(1) (2009).

¹²⁰ *Id.* § 537.465(2).

percent for the state.¹²¹ If, however, federal or state sources provide more than twenty-five percent of the funds to finance the conservation project, an equivalent higher amount goes to the state.¹²² The state then determines whether to allocate its portion to instream flows.¹²³ If so, the state holds the water in trust for instream flows.¹²⁴ If the state determines that the water is not necessary for instream flows, the state makes the water available for appropriation by the next user in priority.¹²⁵

OWRD is responsible for providing notice of the proposed conservation plan so that appropriators who may be impacted may challenge the plan.¹²⁶ If necessary, the state will hold a hearing to determine injury to other users.¹²⁷ If a stream is overappropriated, it is more likely that OWRD will need to hold a hearing to determine injury and mitigation for other users. If the state approves the plan, the applicant receives a right in the conserved water with the same priority date as or one minute after his or her original water right.¹²⁸ The applicant may reserve the conserved water for instream use or “otherwise use or dispose of the conserved water.”¹²⁹ The conserver may then sell, lease, or transfer the saved water if he or she provides notice to OWRD including the name and address of the person obtaining the right, the use of the water, and the terms of the agreement between the private parties.¹³⁰

3. Success in Oregon

Oregon’s program is successful in that OWRD has approved a vast majority of the submitted conservation plans. However, examined in light of the amount of water and number of water rights in the state, the program contributes a very small amount of water for use by the state and conservers.¹³¹ This Part examines OWRD’s success in approving many

¹²¹ *Id.* § 537.470(3).

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*; *id.* § 537.332(3) (the water right is “held in trust by the Water Resources Department for the benefit of the people of the State of Oregon to maintain water in-stream for public use”).

¹²⁵ *Id.* § 537.470(3).

¹²⁶ *Id.* § 537.470(4).

¹²⁷ *Id.*

¹²⁸ *Id.* § 537.485(1).

¹²⁹ *Id.* § 537.490(1).

¹³⁰ *Id.*

¹³¹ It is difficult to quantify the amount of water rights and appropriated water in the state of Oregon because not all rights are active and there are also decreed rights. As of October 14, 2010, the number of water rights in the state of Oregon was 88,379. Among these, 722 belonged to irrigation districts and 14,236 were groundwater rights. Email from Ruben Ochoa, Water Policy, Intergovernmental Relations, Director’s Office, Oregon Water Resources Department to Leila Behnampour (Nov. 3, 2010, 10:04 MST). There are no available numbers or estimates on the amount of appropriated water in the state as this amount is constantly in flux. *See* Water-Resources Data for the United States Water Year 2009, <http://wdr.water.usgs.gov/wy2010/search.jsp> (last accessed Feb. 13, 2010) (Select radial for U.S. State, choose Oregon, and select any county) (demonstrating that records only contain high-water marks, averages, and

applications and offers some insights into the limited effectiveness of the program in conserving large quantities of water for other uses.

Oregon's program has been a success because, of the fifty-three applications submitted, eighty-seven percent have been approved or are currently in process.¹³² The OWRD has processed forty-four of the fifty-three applications that water rights holders have submitted.¹³³ Processing times for the applications vary from less than one year to nearly four years;¹³⁴ however, average processing time to achieve a final order is about thirteen months.¹³⁵ In a report to the National Fish and Wildlife Foundation about Oregon's Conserved Water Program, Bruce Aylward claimed that the variance was likely due to the three-phase process typical of new programs.¹³⁶ In the beginning, an agency, eager to demonstrate that a program is working successfully, processes applications with less scrutiny.¹³⁷ During the second phase, the agency, concerned that it may not be taking important factors into account, revises the application to require more information, which may lead to more incomplete applications.¹³⁸ Finally, the agency gains confidence in its level of scrutiny and begins to see familiar-looking applications from similar areas and water rights, again speeding up the process.¹³⁹

Irrigators have been the predominant users of the conserved water program.¹⁴⁰ Fifty-two of the fifty-three applications were for irrigation water rights.¹⁴¹ Of these, there were two types: individual irrigators and irrigation districts.¹⁴²

Of the completed applications, two-thirds used an intermediary to finance part of the project.¹⁴³ In those projects a majority or all of the conserved water is dedicated to instream flows.¹⁴⁴ The Oregon Water Trust and the Deschutes River Conservancy have acted as intermediaries to help appropriators through the process, sometimes funding entire conservation

extremes in stream height at certain locations); *see also Testimony on SB 194 Before the S. Env't and Nat. Resources Comm.* 2 (Or. Feb. 10, 2009) (Presented by Philip C. Ward, Director, Or. Water Resources Dep't), *available at* http://www1.wrd.state.or.us/pdfs/SB194_testimony.pdf.

¹³² AYLWARD, *supra* note 52, at 12.

¹³³ Interview with Dwight French, Or. Dep't of Water Res. (Dec. 18, 2009) (confirming that 44 applications have been processed since the beginning of the Conserved Water Program); *see also* AYLWARD, *supra* note 52, at 12.

¹³⁴ AYLWARD, *supra* note 52, at 14.

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 15.

¹⁴¹ *Id.* The one nonirrigation project involved a forest products operation that conserved water through altering practices for watering logs. *Id.*

¹⁴² *Id.*

¹⁴³ *Id.* at 16.

¹⁴⁴ *Id.*

projects to preserve all of the conserved water as instream flows.¹⁴⁵ The remaining one-third, however, appear to have undertaken conservation on their own initiative, and are likely spreading the conserved water to new consumptive uses.¹⁴⁶ Thus, Aylward contends, generally those conservers who undertake projects on their own are not donating the conserved water to the state to be held in trust as instream flows.¹⁴⁷

Three main issues explain the limited effectiveness of the conserved water program. First, it is expensive to implement efficiency measures.¹⁴⁸ Second, because participation in the program is voluntary, a water rights holder may forgo disruptive and inconvenient changes if the value of the conserved water does not offset the burden.¹⁴⁹ Moreover, because waste is not aggressively enforced in Oregon, water rights holders have little incentive to change the status quo.¹⁵⁰ Finally, it is difficult to quantify water savings and to carry the burden of proof that changes will not deprive other users of relied-upon return flow.¹⁵¹

Oregon's experiences with the conserved water program can serve as a model for Colorado to strive for, learn from, and improve upon. Before evaluating potential options for conserved water legislation in Colorado, it is important to understand the basic principles of Colorado water law.

IV. WATER LAW IN COLORADO

Colorado's history is intertwined with its water and water law. Finding ways to make the most of its scarce water supplies continues to be a priority for the state. Colorado Supreme Court Justice Gregory Hobbs recently spoke to the importance of conservation and efficiency: "There is very little unappropriated water available for new conditional water rights, every acre foot of available water is valuable, and changes of water rights and augmentation plans have become more important and complex."¹⁵² Thus, it is

¹⁴⁵ *Id.* The Oregon Water Trust, now known as the Freshwater Trust, "is focused on our mission of preserving and restoring freshwater ecosystems." The Freshwater Trust, A New Course of Freshwater Conservation Policy, <http://www.thefreshwatertrust.org/conservation/policy> (last visited Feb. 13, 2011). Deschutes River Conservancy's mission is to "restore streamflow and improve water quality in the Deschutes River Basin." Deschutes River Conservancy, Mission, http://www.deschutesriver.org/About_Us/Mission/default.aspx (last visited Feb. 13, 2011).

¹⁴⁶ AYLWARD, *supra* note 52, at 16.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* at 33.

¹⁴⁹ *See id.* at 32–33.

¹⁵⁰ Karen A. Russell, *Wasting Water in the Northwest: Eliminating Waste as a Way of Restoring Streamflows*, 27 ENVTL. L. 151, 171 (1997).

¹⁵¹ *See, e.g.,* AYLWARD, *supra* note 52, at 24–25 ("Given the over-allocation of basins in Oregon it certainly seems that in most of the cases where water has been spread to new uses there has likely been injury to existing water rights."); *see also* Honhart, *supra* note 6, at 841–42.

¹⁵² Alli Gerkman, The Learned Lawyer, *Interview: Colorado Supreme Court Justice Gregory Hobbs on Water Law*, <http://thelearnedlawyer.com/2009/09/interview-colorado-supreme-court-justice-gregory-hobbs-on-water-law/> (last visited Feb. 13, 2011).

important that Colorado consider conserved water legislation not only to promote efficiency, but also to expand the productivity of water rights.

This Part begins with an explanation of some basic principles of water transfers in Colorado. Then, it examines Colorado's law on salvaged water. Next, it evaluates the latest legislative attempt at a conserved water statute. Finally, it evaluates and rebuts arguments against conserved water legislation in the state.

A. Water Rights Transfers in Colorado

In Colorado, all approvals of changes to water rights are adjudicated in water courts.¹⁵³ Similar to other prior appropriation states, Colorado law permits an appropriator to change the use of water and transfer the right to another party as long as no other existing rights are impaired.¹⁵⁴ The two main limitations to transferring a water right are 1) determining the historic beneficial use, and 2) adhering to the no-injury rule that protects existing appropriators in their reliance on maintenance of stream conditions.¹⁵⁵

First, historic beneficial use pertains to the amount of water historically necessary to achieve the beneficial use of the water right.¹⁵⁶ Although a water rights decree may quantify the exact amount of water necessary to achieve a specific beneficial use, the water court, before approving a transfer, will examine how much water was *actually consumptively used* to achieve the beneficial use.¹⁵⁷ Therefore, if an appropriator historically consumed less water than the paper right to achieve the beneficial use, the right transferable is ratcheted down to conform to actual use.

Second, the transfer cannot *injure* existing rights on the stream. Appropriators have a vested right in the conditions that existed on the stream when they first began appropriating.¹⁵⁸ If another appropriator proposes a change in use, change in point of diversion, or change in place of use that may alter the stream conditions, an existing appropriator may challenge the change if it impairs his or her ability to obtain water to fulfill the right.¹⁵⁹ Thus, a change in stream conditions may constitute a legally cognizable injury.¹⁶⁰

The most common injury is a decrease in return flows. Because many river systems are over-appropriated in Colorado,¹⁶¹ it is not uncommon for a

¹⁵³ See JAMES N. CORBRIDGE, JR. & TERESA A. RICE, *VRANESH'S COLORADO WATER LAW* 162 (rev. ed. 1999).

¹⁵⁴ *Id.* at 223. Corbridge and Rice explain, "Even where injury to a water right can be shown, Colorado law provides that transfers may nevertheless go forward if terms and conditions can be imposed to offset the injury." *Id.*

¹⁵⁵ *Id.* at 245–46.

¹⁵⁶ *Id.* at 246.

¹⁵⁷ *Id.*; see also *Green v. Chaffee Ditch Co.*, 371 P.2d 775, 781 (Colo. 1962).

¹⁵⁸ CORBRIDGE & RICE, *supra* note 153, at 260.

¹⁵⁹ See *id.*

¹⁶⁰ See *id.* at 258–68 (explaining the "no-injury rule" of transfers).

¹⁶¹ See *id.* at 223 ("[M]any streams in the West are overappropriated . . .").

downstream appropriator to rely on return flows from another appropriator's use.¹⁶² Return flow is "water that finds its way to the stream system, after application, both above and below the ground."¹⁶³ Determining injury is a fact-specific, case-by-case inquiry in a court proceeding that requires submission of evidence, consideration of the sufficiency of evidence, shifting burdens of proof, and standing.¹⁶⁴

B. No Right in Salvaged Waters

Related to the concept of beneficial use is what *kind* of water is transferable. In Colorado, an appropriator has no right in salvaged water,¹⁶⁵ which the Colorado Supreme Court has defined as "waters in the river or its tributaries (including the aquifer) which ordinarily would go to waste, but somehow are made available for beneficial use."¹⁶⁶ In *Southeastern Colorado Water Conservancy District v. Shelton Farms*, riparian appropriators on the Arkansas River removed water-loving phreatophytic trees from the banks.¹⁶⁷ The appropriators argued that they were entitled to the water conserved by removing the plants, free from the call of the river and free from prior rights.¹⁶⁸ The Colorado Supreme Court rejected their claims, holding that salvaged water was not free from call because it was part of the original stream system.¹⁶⁹ If appropriators could remove phreatophytes and other vegetation from a stream bank and obtain a right in the water thereby conserved, it could also lead to major erosion and detrimental effects to the health of the stream and water.¹⁷⁰

The court indicated, however, that it was disinclined to hold as it did because of the anti-conservation ramifications.¹⁷¹ The court explained, "We arrive at the instant decision with reluctance, as we are loathe to stifle creativity in finding new water supplies, and do not wish to discourage maximized beneficial use of Colorado's water."¹⁷² But, the court concluded that the judiciary was not the place to expand conservation law. The court stated:

¹⁶² *Id.* at 224 ("Due to the scarcity of water, Colorado law favors making the fullest possible use of all water. This can only be accomplished through use and reuse of water after it has initially served a beneficial purpose.").

¹⁶³ *Id.* Corbridge and Rice explain that many of Colorado's rivers were overappropriated at the turn of century. *Id.*

¹⁶⁴ *See id.* at 260.

¹⁶⁵ *Se. Colo. Water Conservancy Dist. v. Shelton Farms, Inc.*, 529 P.2d 1321, 1325 (Colo. 1974) (en banc).

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at 1323.

¹⁶⁸ *Id.* at 1324.

¹⁶⁹ *Id.* at 1326.

¹⁷⁰ *Id.* at 1327.

¹⁷¹ *Id.* at 1326–27.

¹⁷² *Id.*

No one on any river would be adverse to a schematic and integrated system of developing this kind of water supply with control and balancing considerations. But to create such a scheme is the work of the legislature, through creation of appropriate district authorities with right of condemnation on a selective basis, not for the courts.¹⁷³

Shelton Farms, instead of being a barrier to conserved water statutes, is in fact a plea for such legislation.

Legislation did follow after the case; however, it was not a conserved water statute. Instead, the Colorado legislature explicitly provided that removal of phreatophytes was not a way to increase a water right.¹⁷⁴ The Colorado Supreme Court continues to follow *Shelton Farms*.¹⁷⁵

Although *Shelton Farms* constrains the ability to obtain a right in some kinds of conserved water, it does not foreclose the ability to conserve water in Colorado. In the opinion, the court discussed a previous case that considered the future of water law in the state. In *Fellhauer v. People*,¹⁷⁶ the court explained that “along with *Vested rights*, there shall be *Maximum utilization* of the water in this state.”¹⁷⁷ In some ways, *Shelton Farms* appears to contradict the policy in *Fellhauer* of maximum utilization;¹⁷⁸ however, the case is not a complete barrier to water conservation. It leaves open the possibility for conservation in water otherwise lost in a stream by means other than phreatophyte removal.¹⁷⁹ Therefore, it is a misconception to construe Colorado law as in opposition to conserved water legislation.

C. Failed Attempts at Conserved Water Legislation

There have been multiple attempts at enacting conserved water legislation in Colorado, yet no proposal has succeeded.¹⁸⁰ The most recent

¹⁷³ *Id.* at 1327; *see also id.* at 1328 (Groves, J., concurring) (“It is earnestly to be hoped that the General Assembly can provide a solution so that this water, now being lost in such large quantities to the phreatophytes may be brought under reasonable control. . . . Water lost is water wasted.”).

¹⁷⁴ Colorado Ground Water Management Act, COLO. REV. STAT. § 37-90-103(12.7) (2009) (describing replacement plans as a means of water conservation and omitting removal of phreatophytes as a means of conserving water).

¹⁷⁵ *See R.J.A., Inc. v. Water Users Ass’n of Dist. 6*, 690 P.2d 823, 826 (Colo. 1984) (en banc) (“Review of our cases relating to developed water brings us to the same conclusion that we reached in *Shelton Farms* that under prior case law [no] person has been granted a water right free from the call of the river for water which has always been tributary to a stream.”); *see also Giffen v. State*, 690 P.2d 1244, 1248 (Colo. 1984) (en banc) (upholding a lower court’s grant of summary judgment that denied approval of an augmentation plan to reduce water waste by changing the groundcover from grass to trees).

¹⁷⁶ 447 P.2d 986 (Colo. 1968) (en banc).

¹⁷⁷ *Id.* at 994 (emphasis added).

¹⁷⁸ *Shelton Farms*, 529 P.2d at 1325–26.

¹⁷⁹ *Id.* at 1327.

¹⁸⁰ Gheleta, *supra* note 7, at 674–75, 675 n.85 (discussing failed Colorado conserved water legislation, including S. 126, 55th Gen. Assemb., 2d Sess. (Colo. 1986), S. 95, 55th Gen. Assemb., 1st Sess. (Colo. 1985), and S. 161, 54th Gen. Assemb., 2d Sess. (Colo. 1984)).

attempt was Colorado House Representative Tim Foster's bill in 1993, House Bill 93-1158 (HB 93-1158).¹⁸¹

The policy of HB 93-1158 was to encourage efficient use of water without injury to other water rights.¹⁸² The bill defined "conservation practices" as "measures that are implemented to reduce the historical diversion of water . . . that produce saved water."¹⁸³ Conservation practices included, but were not limited to, "improvements in water diversion and delivery systems . . . [and] reductions in water use."¹⁸⁴ However, to conform to the holding of *Shelton Farms*, the legislature specifically omitted "eradication of phreatophytes or hydrophytes" as an acceptable conservation measure.¹⁸⁵ The bill provided that a conservation plan must quantify the "amount of water historically diverted . . . that will be saved . . . without injury to any other water rights."¹⁸⁶ Furthermore, the bill gave the conserving appropriator a right to "make additional use of such water, using the same priority as the original right."¹⁸⁷ The bill defined saved water as "the amount of water that has historically been available to an appropriator under a water right and would no longer be necessary because of the . . . conservation practices."¹⁸⁸

The bill seemed to comport with existing law in Colorado. First, the plan of conservation provided that the amount of the water right was the amount "historically diverted."¹⁸⁹ Thus, the conserver would begin with the amount of water historically diverted and then subtract the amount needed to accomplish the beneficial use after efficiency measures. As a result, the conserver would end up with an amount of water in surplus after applying the diverted amount to the stated beneficial use in the water rights decree. Second, the same provision conditioned the ability to implement a conservation plan based on an evaluation of "injury to any other water rights."¹⁹⁰ Finally, the bill adhered to the difference between saved and salvaged water, only allowing a conservation plan that *saves* water.¹⁹¹ Yet the proposed bill failed nonetheless.¹⁹² Although the legislation expressly protected against injury,¹⁹³ there were most likely fears that it would inevitably injure vested rights by reducing return flows. Interestingly, similar concerns were expressed in the states that have adopted conserved water

¹⁸¹ See H.R. 1158, 59th Gen. Assemb., 1st Sess. (Colo. 1993).

¹⁸² *Id.* sec. 1, § 37-92-102(1).

¹⁸³ *Id.* sec. 3, § 37-92-103(6.5).

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* sec. 3, § 37-92-103(9.5).

¹⁸⁷ *Id.*

¹⁸⁸ *Id.* sec. 3, § 37-92-103(10.4).

¹⁸⁹ *Id.* sec. 3, § 37-92-103(9.5).

¹⁹⁰ *Id.*

¹⁹¹ *Id.* sec. 3, § 37-92-103(6.5), (9.5), (10.4).

¹⁹² Honhart, *supra* note 6, at 836-37.

¹⁹³ H.R. 1158, sec. 1, § 37-92-102(1).

statutes,¹⁹⁴ yet these states' successes in implementing conservation programs indicate that it is possible to mitigate injury.

D. Arguments Against Conserved Water Legislation in Colorado

One commentator examined noteworthy critiques of conserved water legislation and questioned whether Colorado will ever be able to adopt a statute similar to the four states discussed above.¹⁹⁵ Mark Honhart offered three reasons why Colorado is different, and argued that the state will never be able to enact a conserved water statute.¹⁹⁶ First, he claimed that Colorado's unique water rights adjudication structure imposes high transaction costs.¹⁹⁷ Second, he explained that because Colorado has much less water, compared to the four states with conserved water legislation, it has less potential for savings.¹⁹⁸ Finally, he stated that hydrologic uncertainties make it nearly impossible to determine how much water constitutes return flows and how much is actually saved through efficiency improvements.¹⁹⁹

Honhart expressed concern that because of Colorado's adjudication system of water rights, conservers would be less inclined to take proposed conservation plans to the water courts where transaction fees would be higher.²⁰⁰ A study of Oregon's conserved water program indicated, however, that processing times in Oregon vary between less than one year to four years, and often were accompanied by a contested case hearing to adjudicate injury.²⁰¹ Because an evaluation of existing rights will be involved in transferring conserved water, it is very likely that a contested case hearing will occur in all states with conserved water legislation.²⁰² As a result, Colorado's water court system would not make the time delay or

¹⁹⁴ Brian E. Gray, *The Market and the Community: Lessons from California's Drought Water Bank*, 14 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 41, 60 (2008) (stating special transfer legislation was enacted because of fears of water users); Janet C. Neuman & Cheyenne Chapman, *Wading into the Water Market: The First Five Years of the Oregon Water Trust*, 14 J. ENVTL. L. & LITIG., 135, 165 (1999) (stating that water users fear deprivation of water flows).

¹⁹⁵ See *supra* Part III.B-C; see also Honhart, *supra* note 6, at 837 (noting that Colorado legislators consistently oppose water conservation proposals).

¹⁹⁶ Honhart, *supra* note 6, at 837, 840-41.

¹⁹⁷ *Id.* at 839.

¹⁹⁸ *Id.* at 840-41.

¹⁹⁹ See *id.* at 842.

²⁰⁰ See *id.* at 837-39 (explaining the high transaction costs of adjudications in water court proceedings in Colorado).

²⁰¹ See AYLWARD, *supra* note 52, at 14 ("Honhart's . . . view that [Oregon's] water rights holders could proceed without 'costly engineering studies and legal representation' may indeed have been over-optimistic in hindsight.") (explaining that processing times are often accompanied by a transfer of water rights on the property involved).

²⁰² Adell Amos, *Freshwater Conservation in the Context of Energy and Climate Policy: Assessing Progress and Identifying Challenges in Oregon and the Western United States*, 12 U. DENV. WATER L. REV. 1, 91 (2008); Honhart, *supra* note 6, at 838-39.

expense much different.²⁰³ In fact, the water courts are an ideal venue for such hearings.

Honhart was also skeptical about how much water was actually available for conservation²⁰⁴ and compared the amount of water in Colorado to that in Oregon and Montana, where he argued greater water supplies can “absorb the losses due to inaccurate estimates.”²⁰⁵ He suggested that the Colorado legislature, instead of implementing policy to ensure accurate estimates of water savings and return flows, had chosen to protect vested rights.²⁰⁶ Certainly, Colorado has less water than Oregon and Montana;²⁰⁷ however, scarcity of water is all the more reason to adopt conserved water statutes. Moreover, improving agricultural irrigation efficiency is the most effective way to conserve the greatest amount of water because that is where the water is:²⁰⁸ eighty-five percent of the water in Colorado is used for irrigation.²⁰⁹ The United States Bureau of Reclamation found that on average, twelve percent of water diverted for irrigation is “irretrievably lost.”²¹⁰ A mere seven percent reduction in water consumed by irrigated agriculture would allow all other water uses to double.²¹¹ By choosing to ensure accurate estimates of water savings in addition to protecting vested rights, the Colorado legislature could greatly expand the productivity of water rights.

Finally, Honhart explained that hydrologic uncertainties make it hard to quantify the amount of water potentially conserved.²¹² State engineers and water resources departments in Colorado carefully measure, record, and account for nearly every drop of water.²¹³ Moreover, there is no reason why the state could not use some of the funds for a conserved water program to install additional meters and stream gauges to measure return flow. Thus, Colorado is sufficiently equipped to make informed decisions about water use and conservation.

²⁰³ See AYLWARD, *supra* note 52, at 33 (discussing resource costs and time involved in Oregon’s program).

²⁰⁴ Honhart, *supra* note 6, at 840–41.

²⁰⁵ *Id.* at 840.

²⁰⁶ *Id.* at 841–42.

²⁰⁷ *Id.* at 840–41.

²⁰⁸ *Id.* at 828.

²⁰⁹ Brown & Doherty, *supra* note 22, at 1 (“Agricultural irrigation is widely recognized as one of the most significant uses of water in Colorado, using approximately eighty-five percent of the State’s water.”).

²¹⁰ Honhart, *supra* note 6, at 841 (citing to a U.S. Bureau of Reclamation Study; the author does not define “irretrievably lost” but does suggest that such water is no longer available for surface appropriation).

²¹¹ *Id.* at 828.

²¹² *Id.* at 842.

²¹³ See generally Colo. Div. of Water Res., Data Search, <http://water.state.co.us/DataMaps/Pages/default.aspx> (last visited Feb. 13, 2011).

V. LEGISLATIVE INCENTIVES TO CONSERVE IN COLORADO

This Part examines a model for conserved water legislation in Colorado and explains why alternatives to legislation, while viable and necessary, cannot achieve the same result as conserved water legislation.

A. How Conserved Water Legislation Should Work in Colorado

The Colorado legislature should embrace a conserved water plan similar to Oregon, although tailored to fit Colorado's prior appropriation system. A blueprint for the potential legislation should include similar language as the bill Tim Foster introduced,²¹⁴ however it should provide a more thorough explanation of how to transfer the conserved water and set an as-needed minimum state conveyance requirement.

As Oregon learned in the early days of the conserved water program, definitions are essential to success.²¹⁵ Instead of using the Foster bill's definition of saved water, the legislature should employ a definition and process of measuring the conserved water more like Oregon's.²¹⁶

An appropriator wishing to implement a conservation plan must begin by assessing the amount of water historically diverted. Next, the appropriator must indicate and subtract the amount necessary to achieve his or her original beneficial use. Then, the appropriator must take into account the amount needed for mitigation for injury to other users and subtract that amount. The leftover water is the saved water, available for another consumptive use, instream flows, or for transferring.

In order for the legislature to adopt such legislation, it must be clear how injury will be assessed and mitigated.²¹⁷ This applies to conserving water for the appropriator's use and transferring the conserved water. The legislation must clearly define how far downstream the state will examine for injury and what exactly constitutes injury. This is particularly relevant for timing of flows; if return flow takes longer than the irrigation season to reach certain parts of a stream, there is no injury from eliminating that return flow.²¹⁸ Injury analysis should not constitute a major hurdle in Colorado because the state already employs active state engineers and water managers and has many resources to measure and record water data.

Two major reasons to support conserved water legislation in Colorado include the increasing population and the need to protect instream flows to maintain recreation, fishing, wildlife, and pollution dilution.²¹⁹ Conserved

²¹⁴ See generally H.R. 1158, 59th Gen. Assemb., 1st Sess. (Colo. 1993).

²¹⁵ See *supra* Part III.C.1.

²¹⁶ See *supra* Part III.C.

²¹⁷ See, e.g., H.B. 1280 § 3(b), 66th Gen. Assemb. 2d Sess. (Colo. 2008).

²¹⁸ See Honhart, *supra* note 6, at 842.

²¹⁹ Between 2000 and 2009, Colorado's population increased from 4.3 million to 5.0 million people. U.S. Census Bureau, Population Finder: Colorado, http://factfinder.census.gov/servlet/SAFFPopulation?_event=Search&_name=&_state=04000US08&_county=&_cityTown=&_zip=&_sse=on&_lang=en&pctxt=fph (last visited Feb. 13, 2011).

water legislation would bring the state closer to meeting these goals. Furthermore, improved efficiency is a practical solution to maintaining ongoing protection of vested rights while also creating new rights for new water needs. More importantly, it potentially allows water rights holders to spread the water to consumptive uses or sell, lease, or otherwise transfer the right.²²⁰ These incentives are necessary to make the legislation work.

By creating a program to create incentives for efficiency measures, the state would essentially be helping water rights holders make more money.²²¹ In exchange, it is important that the state also benefits from this transaction. Colorado should adopt Oregon's conveyance requirement that gives a portion of the conserved water to the state for instream flows or other necessary purposes.²²² The legislation, like Oregon's, should provide that the conserver must reserve a percentage of water to the state.²²³ Prioritizing instream flows is important and the legislation in Colorado should require the state use the conserved water for instream flows if necessary. Like Oregon, should the Colorado Water Resources Board decide that it did not need the conserved water for instream flows, it should make the conserved water available for appropriation by other users.²²⁴

A rarely used provision in the Oregon conserved water program provides that even if the state funds the entire conservation project, the water rights holder can request to receive twenty-five percent of the water.²²⁵ Colorado could implement a provision like this that would allow the state to benefit, while still offering an incentive to the water rights holder.

The key to making legislation work in Colorado is clear language that protects vested rights, achieves important state purposes by providing water for additional uses, and creates incentives for water rights holders. Colorado can learn from Oregon and implement an effective system. If the legislature continues to reject conserved water legislation, there are available alternatives that address competing needs for water. The alternatives, however, should be regarded as additional viable responses to growing demand for water, but cannot achieve the same results as conserved water legislation.

B. Alternatives to Conserved Water Legislation

Although conserved water legislation is one means of implementing efficiency improvements, other methods exist to encourage conservation. This Part begins with an analysis of one grant program in Colorado that funds alternatives to traditional agriculture-to-urban water transfers in an effort to bring more water into growing communities without eliminating rural agriculture. Next, it evaluates an underused legislative and judicial

²²⁰ Honhart, *supra* note 6, at 843–44.

²²¹ *Id.* at 829, 849, 854.

²²² OR. REV. STAT. § 537.470(3) (2009); *see supra* Part III.C.2.

²²³ *See* OR. REV. STAT. § 537.470(3) (2009).

²²⁴ *Id.* § 537.490.

²²⁵ *Id.* § 537.470(3) (2009); *see also* AYLWARD, *supra* note 52, at 25.

tool—enforcement of beneficial use *without waste*. Both are viable solutions to encourage conservation; however neither can create a right in conserved water.

1. Grant Programs to Foster Alternative Water Transfers

Many state and federal programs aim to allocate scarce water resources among competing demands. Colorado's Alternative Agricultural Water Transfer Methods Grant Program (ATM Grant Program) is an example of a successful program in which the state funds alternative water transfers with the purpose of achieving a balance between rural agriculture and the needs of growing communities.

Stemming from the reality that most municipal and industrial water users have heavily relied on agriculture-to-urban transfers, the Colorado Water Resources Board's (CWCB) ATM Grant Program offers financial assistance for projects that provide alternatives to the traditional agriculture-to-urban water transfers.²²⁶ The purpose of the program is to transfer a portion of the historic consumptive use of an agricultural water right for urban use while allowing the farmer to continue irrigating with the remaining portion.²²⁷ As a result, the ATM Grant Program implements ways to share historic consumptive use between farms and cities.²²⁸

Instead of improving irrigation efficiency, the ATM Grant Program focuses on reducing crop consumptive water use, which the CWCB defines as "the water that is physiologically utilized by the crop and is viewed as the ultimate 'beneficial' use of water."²²⁹ Thus, the irrigator transfers the reduced consumptive use, unlike conserved water legislation that transfers the water conserved through efficiency measures.²³⁰ Examples of alternative transfers include interruptible supply agreements, rotational fallowing, water banks, reduced crop consumptive use, and purchase and lease-back.²³¹ The transfers, whether short-term or long-term, occur in the water courts or at the Office of the State Engineer.²³² Benefits of alternative methods include:

²²⁶ COLO. WATER CONSERVATION BD., ALTERNATIVE AGRICULTURAL WATER TRANSFER METHODS CRITERIA AND GUIDELINES FOR THE COMPETITIVE GRANT PROGRAM (2010), available at <http://cwcb.state.co.us/loansgrants/alternative-agricultural-water-transfer-methods-grants/documents/altaggrantprogramcriteriaguidelines.pdf>. In Senate Bill 07-122, the Colorado legislature authorized the CWCB to institute a grant program for alternative agricultural water transfer methods. S. 122, 66th Gen. Assemb., 1st Reg. Sess. (Colo. 2007). The current program only applies to the Arkansas and South Platte basins; however, Senate Bill 09-125 extends the program to all river basins. S. 125, 67th Gen. Assemb., 1st Reg. Sess (Colo. 2009).

²²⁷ E-mail from Todd Doherty, Intrastate Water Mgmt. & Dev., Colo. Water Conservation Bd., to author (Jan. 6, 2010, 5:27 P.M.) (on file with author).

²²⁸ *Id.*

²²⁹ COLO. WATER CONSERVATION BD., *supra* note 226.

²³⁰ *Id.*

²³¹ Doherty, *supra* note 21, at 2.

²³² Perry Cabot & Jim Valliant, *Farming in the Lower Arkansas River Valley Within the Context of Agricultural Water Rights Transfers*, COLO. WATER, Jan.–Feb. 2010, at 13, 14, available at http://www.cwi.colostate.edu/newsletters/2010/ColoradoWater_27_1.pdf; Peter D.

creating water sharing relationships between irrigators and municipalities, increasing capital to upgrade farm and irrigation equipment, optimizing the use of a scarce resource, sustaining rural agricultural communities and economies, preserving agricultural open spaces, providing for food security, and sustaining the natural environment and providing wildlife habitat.²³³

Since the program began in 2007, CWCB has provided \$1.5 million to six projects initiated by water providers, ditch companies, and university groups.²³⁴ Like conserved water legislation, similar issues arise including difficulty in verifying actual use of water, maintaining return flows, and ensuring profitability.²³⁵ In 2009, the Colorado legislature approved an additional \$1.5 million for the ATM Grant Program.²³⁶ The CWCB is currently in the process of developing criteria and guidelines for a new grant program that will fund projects that aim to overcome some of these hurdles.²³⁷

The ATM Grant Program could work in conjunction with conserved water legislation because such legislation could help the program overcome some of its hurdles. For example, conserved water legislation would provide a template to assess return flows and achieve more accurate measurements of actual use of water. Moreover, the ATM Grant Program could expand and be a means to implement efficiency improvements that conserve water.

2. More Aggressive Waste Enforcement

Another alternative to conserved water legislation is more aggressive waste enforcement. Western water law generally accepts the tenant that “[b]eneficial use, without waste, is the basis, measure, and limit of a water right.”²³⁸ However, waste is a murky term. The definition of waste has developed in case law and is more of a standard than a rule.²³⁹ It is legally defined as “the amount of flow diverted in excess of reasonable needs under customary . . . practices.”²⁴⁰ Therefore, customary irrigation methods are usually not found wasteful.²⁴¹

More aggressive waste enforcement may require legislatures to redraft policy on what constitutes waste. Judiciaries have been reluctant to enforce

Nichols, *The Lower Arkansas Valley Super Ditch Company, Inc.*, COLO. WATER, Jan.–Feb. 2010, at 5, 7, available at http://www.cwi.colostate.edu/newsletters/2010/ColoradoWater_27_1.pdf.

²³³ Doherty, *supra* note 21, at 2.

²³⁴ *Id.* at 3.

²³⁵ *Id.* at 4.

²³⁶ Act of June 1, 2009, 2009 Colo. Sess. Laws 1745, 1746.

²³⁷ Doherty, *supra* note 21, at 4.

²³⁸ Neuman, *supra* note 1, at 920; see ARIZ. REV. STAT. ANN. § 45-141(B) (2003); NEV. REV. STAT. § 533.035 (2009); N.M. STAT. ANN. § 72-1-2 (1978); N.D. CENT. CODE § 61-04-01.2 (2010); OKLA. STAT. ANN. tit. 82, § 105.2(A) (West 1990); OR. REV. STAT. ANN. § 540.610(1) (West 2003); S.D. CODIFIED LAWS § 46-1-8 (2004); UTAH CODE ANN. § 73-1-3 (LexisNexis 1989); WYO. STAT. ANN. § 41-3-101 (2009).

²³⁹ See Neuman, *supra* note 1, at 933.

²⁴⁰ Steven J. Shupe, *Waste in Western Water Law: A Blueprint for Change*, 61 OR. L. REV. 483, 491 (1982).

²⁴¹ Neuman, *supra* note 1, at 933.

waste because it is such a murky standard.²⁴² One commentator outlines a proposal for legislation that would include making findings for urgent water supply needs and directing agencies to begin to aggressively enforce against waste.²⁴³ Waste enforcement is a huge issue in Western water law and it may require many creative and conventional efforts to begin to change the entrenched low standards of efficiency.

Aggressive waste enforcement is needed regardless of conserved water legislation; thus, it could be implemented in concert with conserved water statutes. If water rights holders knew that they could potentially lose their right due to waste, they might be more inclined to implement a conservation plan and obtain the conserved water for additional uses or to otherwise transfer.

Conserved water legislation, if not a replacement for more aggressive waste enforcement, is certainly a complement because it would encourage water rights holders to become efficient so they could keep their full decreed water right.

VI. CONCLUSION

Four Western states have forged a path that aligns the principles of prior appropriation with the imminent need to expand the productivity of water rights. These states allow water rights holders to obtain a right in the water they conserve through implementation of efficiency measures. Colorado, whose legislature has long been opposed to conserved water legislation, should reevaluate its pressing needs for water and the viable solutions that conserved water legislation offers. In these days of growing populations and decreasing water supplies, conserved water legislation offers a workable method that protects vested rights, frees up water for additional uses, and augments instream flows.

²⁴² *Id.* at 928, 948.

²⁴³ *Id.* at 990.