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### **Abstract**

*This chapter focuses on statutory and other legal tools available in Colorado for coping with drought. The chapter begins with a narrative discussion of how the focus of Colorado water law on the protection of private property rights shapes opportunities for dealing with drought. Following is a listing of legal tools applicable to water supply and drought management in Colorado under federal, state, and local laws. Examples of materials covered in the chapter include local restrictions on residential irrigation; state statutory tools, such as augmentation plans and instream flows; and federally authorized programs for financial and technical assistance relating to drought. The chapter also discusses examples of voluntary measures taken by major water users in Colorado developed in cooperative efforts within the framework of Colorado water law to ameliorate the effects of drought on other water users and on the environment.*

### **I. The Focus of Colorado Water Law on the Protection of Private Property Rights Shapes Opportunities for Dealing with Drought**

Like most arid western states, the allocation of water in Colorado is governed by the doctrine of "prior appropriation," commonly described as "first in time first in right."<sup>1</sup> Under this doctrine, rights to water are granted upon the appropriation of a certain quantity of water to a beneficial use, within a reasonable amount of time.<sup>2</sup> The date of appropriation determines the priority of the water right, with the earliest appropriation establishing the most senior, or superior, right.<sup>3</sup>

Thus, the right to the beneficial use of water in Colorado is based on a diversion for beneficial use through prior appropriation, rather than by grant from the State.<sup>4</sup>

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<sup>1</sup> See *Irwin v. Phillips*, 5 Cal. 140 (1885).

<sup>2</sup> See Colo.Const. Art. XVI, § 6 ("The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied"); see also C.R.S. § 37-92-103(3(a) ("Appropriation" means the application of a specified portion of the waters of the state to a beneficial use pursuant to the procedures prescribed by law"); and *Board of County Comm'rs v. Upper Gunnison River Water Conservancy Dist.*, 838 P.2d 840 (Colo. 1992) ("To be effective, an appropriation must divert a definite quantity of water with the intent of applying such water to beneficial use").

<sup>3</sup> See Colo.Const., Art.XVI, § 6 ("Priority of appropriation shall give the better right as between those using the water for the same purpose"); *Farmers' High Line Canal & Reservoir Co. v. Southworth*, 21 P. 1028 (1889) ("Priority of right to water by priority of appropriation is older than the constitution itself, and has existed from the date of the earliest appropriations of water in the boundaries of Colorado").

<sup>4</sup> The other major approach to water rights allocation in the United States is known as the "riparian" system, which is prevalent in the water rich states of the eastern United States. Under this system, water is allocated based on land ownership. Most riparian states now have permit statutes, under which an administrative official determines the quantity of water that may be diverted, and the terms and conditions for its use, based on criteria adopted by the legislature to protect public interests in the resource.

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The right to appropriate and use water is a valuable property right that arises solely by the act of placing unappropriated water to beneficial use.<sup>5</sup> This right is protected under Colorado law and is rooted in Colorado's Constitution, which establishes that public uses of water in Colorado are subject to the right to appropriate a water right for private use:

The water of every natural stream, not heretofore appropriated, within the state of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided. Colo.Const. Art. XVI, § 5.

The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied. Colo.Const. Art.XVI, § 6.

Like other property rights, vested water rights may not be taken without payment of just compensation, and may be bought and sold separately from land on which they are used.<sup>6</sup>

Colorado does not have a “public trust doctrine,” like some states, nor is “the public interest” a factor considered in adjudicating a water right.<sup>7</sup> However, while the legislature in Colorado cannot prohibit the appropriation or diversion of unappropriated water for beneficial use based on public policy concerns, it can regulate the manner of effecting an appropriation.<sup>8</sup> Important tools for the management of water resources have been developed through case law and statutory enactments governing the diversion and use of water.<sup>9</sup>

As the doctrine of prior appropriation has been interpreted through case law, two major principles have emerged based on the constitutional requirement of "beneficial use" and the conception of

<sup>5</sup> See *Sherwood Irrigation Co. v. Vandewark*, 331 P.2d 810 (1958) (“Water is a valuable property right, subject to sale and conveyance”); see also Justice Gregory Hobbs, “Colorado Water Law: An Historical Overview,” 1 U.Denv. Water L. Rev. 1 at 2 (“Western prior appropriation water law is a property rights-based allocation and administration system, which promotes multiple use of a finite resource.”).

<sup>6</sup> See *Strickler v. City of Colorado Springs*, 26 P. 313, 316 (Colo. 1891) (“A priority to the use of water for irrigation or domestic purposes is a property right and as such is fully protected by the constitutional guaranties relating to property in general”).

<sup>7</sup> See Hobbs, 1 U.Denv.Water.L.Rev 1 at 23, *supra*, citing *People v. Emmert*, 597 P.2d 1025, 1027-28 (Colo. 1979) and *Aspen Wilderness Workshop v. Hines Highlands Ltd. Partnership*, 929 P.2d 952, 972 (Colo. 1996).

<sup>8</sup> *City and County of Denver v. Bergland*, 517 F.Supp. 155 (D.Colo. 1981), *aff'd in part and rev'd on other grounds*, 695 F.2d 465 (10<sup>th</sup> Cir. 1982) (“The right to appropriate and divert water is not absolute.”); see also *Fox v. Division Eng. For Water Div.* 5, 810 P.2d 644 (Colo. 1991).

<sup>9</sup> The Water Right Determination and Administration Act of 1969 (the “1969 Act”), §§ 37-92-101 to 37-92-602, provides the statutory framework for implementing the constitutional right to divert water for beneficial use.

water as a property right. These include: First, that water must be used efficiently and that a water right does not include the right to waste the resource; and second, that the right to use water must be sufficiently flexible to accommodate changes of use and the free transferability of water rights in order to allow the maximum use of water in times of scarcity. With regard to the former, Colorado courts have required water users to employ an efficient means of diversion, and have limited the amount of water that may be appropriated to the amount necessary for the actual use. Regarding flexible use of water rights, Colorado law recognizes water storage rights, conditional water rights, augmentation plans, changes of water rights and instream flow rights, all of which allow water users to make the most of a scarce resource.

In summary, the absence of a permit system or a public interest test in Colorado requires the State to stay within the bounds of the priority system, and to respect private property rights, in managing the resource for public purposes in times of drought. However, the prior appropriation system, itself, provides opportunities for management of the resource. The following discussion focuses, first, on: (1) the elements of the prior appropriation doctrine which promote efficient use of a scarce resource, and which, themselves, are tools for drought management; and (2) statutory tools adopted by Colorado's legislature to manage water resources within the parameters of the prior appropriation system. Second, there is included a summary of federal, state and local legal tools available for drought management in Colorado.

### ***A. The Principles of Prior Appropriation as Tools for Drought Management***

#### ***1. The Priority System***

The priority system of water allocation is designed to cope with water scarcity.<sup>10</sup> Under the doctrine of prior appropriation, if water is insufficient to meet the needs of all water users, senior water users can require full or partial curtailment of diversions by junior water users, such that users with later priorities receive less than their allotted amount of water, or none at all.<sup>11</sup> Essentially, this doctrine protects senior appropriators from injury by junior appropriators.<sup>12</sup>

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<sup>10</sup> See James N. Corbridge Jr. and Teresa Rice, *Vranesh's Colorado Water Law* (Revised ed. 1999) at 2 ("The primary advantage of the appropriation system is the development of methods for the orderly distribution of water in water-short regions by establishing procedures for both the quantification and prioritization of water rights").

<sup>11</sup> See C.R.S. § 37-92-301(3) (requiring the state engineer to distribute water in accordance with the priority system).

<sup>12</sup> *Application of Hines Highlands Partnership*, 929 P.2d 718 (Colo. 1996).

Thus, the more senior the water right, the more valuable it is, particularly in times of drought. As mentioned above, water rights may be bought and sold and changed to a new type, place and manner of use, pursuant to the statutory provisions for a “change of water right,” discussed below. Therefore, one tool for management of drought in Colorado simply involves taking advantage of the market for water rights to obtain rights with a senior priority.<sup>13</sup> As discussed below, Colorado statutory law allows the State to do this by purchasing water rights and changing them for use as instream flows. Likewise, municipalities and other water users can protect themselves against water shortages in times of scarcity by acquiring water storage rights and by purchasing senior agricultural water rights and converting them to municipal, commercial or industrial uses.

## 2. Beneficial Use

The single most important restriction on the appropriation of water in Colorado, in terms of the State's ability to limit the amount of water diverted and used, is the constitutional requirement that water be placed to a “beneficial use.”<sup>14</sup> “Beneficial use” is defined in the Water Right Determination and Administration Act of 1969, Section 37-92-101 et seq. (hereafter 1969 Act) as follows:

Beneficial use is the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made[.]<sup>15</sup>

The purpose of the beneficial use requirement is to prevent waste, hoarding and speculation by appropriators and to encourage the quick and efficient use of the resource.<sup>16</sup>

The beneficial use requirement acts as a limit on the amount of water that may be appropriated for private use throughout the life of the water right. In order to establish a valid appropriation for an absolute water right, a water user must demonstrate that a certain amount of water has been applied to a beneficial use for the proposed purpose.<sup>17</sup> The amount decreed is limited to the amount placed to beneficial use.

<sup>13</sup> According to an article in the Denver Post on June 30, 2003, current prices for water in the Front Range range from \$11,000 to \$13,000 for an acre-foot. See Denver Post, “Farmers’ Market: Lease Water to Cities,” by Coleman Cornelius.

<sup>14</sup> See *Vranesh*, *supra*, at 43, citing *Thomas v. Guiraud*, 6 Colo. 530 (Colo. 1883) (referring to the beneficial use requirement as the “true test of an appropriation of water”).

<sup>15</sup> C.R.S. § 37-92-103(4) (2002).

<sup>16</sup> See *Vranesh*, *supra*, citing *Combs v. Agricultural Ditch Co.*, 152, 28 P. 966, 968 (Colo. 1892).

<sup>17</sup> See C.R.S. § 37-92-103(a) (this section sets forth Colorado’s “anti-speculation doctrine,” requiring that an applicant for an absolute or conditional water right show that the proposed appropriation is not based upon the “speculative sale or transfer of the appropriative rights[.]” and that the applicant has “a specific plan and intent to divert, store or otherwise capture, possess, and control a specific quantity of water for specific beneficial uses”).

In order to obtain a conditional water right, which has not yet been placed to beneficial use, a water user must establish that it “can and will” place a certain amount of water to beneficial use within a reasonable amount of time.<sup>18</sup> Thus, a water user may not appropriate more water than it actually needs for its intended use.

Courts have further applied the principle of beneficial use in holding that a water user has no right as against junior appropriators to divert more water than can be used beneficially,<sup>19</sup> regardless of the amount decreed, or to expand its use beyond the amount needed for the decreed use.<sup>20</sup> Thus, the true measure of a water right is the amount that can be placed to beneficial use, which may be less than the amount decreed, if the user's actual need for water changes over time.

As a practical matter, a water user that diverts more water than it can place to beneficial use may be curtailed by the Division Engineer.<sup>21</sup> In addition, if water under a vested water right is not placed to beneficial use for an extended period of time, and an intent to abandon the water right is demonstrated, a vested water right may be lost to abandonment through non-use.<sup>22</sup>

Thus, application of the principal of beneficial use allows the State to limit the quantity of water initially allocated under individual water rights, and to ensure through administration, that the amount of water used under a water right over time remains limited to the amount actually needed. Ensuring that water is used efficiently, without waste, enables the State to conserve water for other uses and users. Conservation is clearly an important tool for managing water scarcity in times of drought.

### **3. Maximum Utilization**

Colorado courts have held that water should be allocated and administered in a way that promotes the "maximum utilization" of the resource.<sup>23</sup> This principle was formulated in reliance on Article XVI, Section 6 of the Colorado Constitution, providing that "[t]he right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied."<sup>24</sup> Maximum utilization has

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<sup>18</sup> See C.R.S. § 37-92-305(9)(b).

<sup>19</sup> See, *Comstock v. Ramsay*, 133 P. 1107, 1110-11 (Colo. 1913).

<sup>20</sup> See *Weibert v. Rothe Bros. Inc.*, 618 P.2d 1367, 1373 (Colo. 1980).

<sup>21</sup> See § 37-92-502(2)(a) "Each division engineer shall order the total or partial discontinuance of any diversion in his division to the extent that the water being diverted is not necessary for application to a beneficial use[.]"

<sup>22</sup> See *City & County of Denver v. Middle Park Water Conservancy District*, 925 P.2d 283, 286 (Colo. 1996).

<sup>23</sup> See *Fellhauer v. People*, 447 P.2d 986, 994 (Colo. 1968).

<sup>24</sup> See *id.* at 994 ("It is implicit in these constitutional provisions that, along with Vested rights, there shall be Maximum utilization of the water of this state") (capitalization in original); see also C.R.S. § 37-92-102(1)(a) (Under the "basic tenets of Colorado water law," the legislature has codified the doctrine of maximum utilization, declaring that "it is the policy of this state to

been applied by the courts in two ways: (1) to require an efficient means of diversion with the purpose of making more water available to other water users; and (2) in support of the adoption of statutory tools allowing flexible administration in times of scarcity, including, for example, augmentation plans, exchanges, storage rights and the "futile call doctrine."

Applying the principle of maximum utilization, Colorado courts have limited appropriators to use of a reasonably efficient means of diversion. In *City of Colorado Springs v. Bender*,<sup>25</sup> for example, the Colorado Supreme Court held that senior well owners were not entitled to enjoin pumping by a junior well owner where the senior's well was unreasonably shallow and where changes to the seniors' wells, within the "economic reach" of the seniors, would allow them to achieve their appropriation without curtailment of the junior user.<sup>26</sup> In *Alamosa-La Jara Water Users Protection Association v. Gould*,<sup>27</sup> the Court held that the state engineer could determine through regulations what constitutes a "reasonable means of diversion," and could require senior water users to adopt such reasonable means in furtherance of the goal of achieving "maximum utilization" of water.

The doctrine of maximum utilization has also been applied by the courts in support of the use of augmentation plans.<sup>28</sup> Augmentation plans, described in more detail below, are statutory creations which allow out-of-priority diversions by juniors, while protecting seniors from injury through the provision of substitute supplies to other water users. The Colorado Supreme Court has recognized the importance of plans for augmentation where water is scarce, stating, "the fact that the rivers involved are over-appropriated, rather than being an argument against the plans for augmentation, is the very reason for the valid exercise of ingenuity of persons seeking to maximize the use of water . . . ."<sup>29</sup>

Like augmentation plans, the "futile call doctrine" also allows junior water users to divert when they are out-of-priority under certain circumstances. Under this doctrine, a junior water user will be curtailed only if such curtailment makes water available at the time

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integrate the appropriation, use, and administration of underground water tributary to a stream with the use of surface water in such a way as to maximize the beneficial use of all of the waters of this state") (emphasis added).

<sup>25</sup> 366 P.2d 552 (1961).

<sup>26</sup> *Bender*, 366 P.2d at 555, 556 ("the plaintiffs cannot reasonably 'command the whole' source of supply merely to facilitate the taking by them of the fraction of the entire flow to which their senior appropriation entitles them").

<sup>27</sup> 674 P.2d 914 (Colo. 1983).

<sup>28</sup> See C.R.S., § 37-92-501.5, requiring the State Engineer to "exercise the broadest latitude possible in the administration of waters under their jurisdiction to encourage and develop augmentation plans and voluntary exchanges of water . . . in order to allow continuance of existing uses and to assure maximum beneficial utilization of the waters of this state."

<sup>29</sup> *Kelly Ranch v. Southeastern Colo. Water Conservancy Dist.*, 550 P.2d 297, 304 (Colo. 1976).

and place of injury to a senior.<sup>30</sup> This allows juniors to continue diverting in times of scarcity, even if a senior is not receiving its whole entitlement, where curtailment of the junior would not allow any additional water to reach the senior.

Likewise, storage projects also promote the maximum utilization of water. In *A-B Cattle Co. v. United States*,<sup>31</sup> the Colorado Supreme Court relied on the principle of maximum utilization to uphold a replacement plan necessitated by the construction of the Frying-Pan Arkansas storage project, recognizing that storage projects promote maximum utilization in times of scarcity. In this case, the Court held that a water user did not have the right to continue receiving water with a high silt content, which had the effect of sealing the user's ditch to prevent leakage, where the silty water was replaced with clear water as a result of the construction of the dam. As stated by the Court: "In using its leaky ditches the Bessemer Co. has not attempted to make maximum utilization of the water. . . . [P]laintiffs do not have the right to use silt content to help seal leaky ditches. To view it otherwise would run contra to a basic principal of western irrigation that conservation and maximum usage demand the storage of water in time of plenty for the use in times of drought."<sup>32</sup>

The principle of maximum utilization is a double-edged sword in terms of its usefulness as a tool for drought management. On one hand, the State can rely on maximum utilization in administering water rights in order to require water users to use a reasonable means of diversion, and in support of statutory mechanisms allowing water users to divert water under plans for augmentation or from storage, when water would otherwise not be available in times of drought. On the other hand, the focus in Colorado on maximum utilization of the resource, without qualification by any requirement that water be conserved for public uses, limits the ability of the State to manage the resource to protect the environment or the public interest in times of drought.<sup>33</sup>

<sup>30</sup> See C.R.S., §§ 37-92-102(2)(d) ("No reduction of any lawful diversion because of the operation of the priority system shall be permitted unless such reduction would increase the amount of water available and required by water rights having senior priorities"); and 37-92-502(a) ("Each division engineer shall order the total or partial discontinuance of any diversion in his division . . . to the extent that the water being diverted is required by persons entitled to use water under water rights having senior priorities, but no such discontinuance shall be ordered unless the diversion is causing or will cause material injury to such water rights having senior priorities").

<sup>31</sup> 589 P.2d 57 (Colo 1978).

<sup>32</sup> *Id.* at 61.

<sup>33</sup> The Colorado Supreme Court has tempered its application of the principle of maximum utilization where the proposed manner of obtaining additional water would have obvious environmental costs, referring in such cases to the requirement for "optimum use" and requiring "proper regard for all significant factors, including environmental and economic concerns[.]" See e.g. *Southeastern Colo. Water Conservancy Dist. v. Shelton Farms, Inc.*, 529 P.2d 1321, 1327 (Colo. 1974) (the court held that cutting down cottonwood trees would not produce water that could be used free from the priority system); *R.J.A., Inc. v. Water Users Ass'n*, 690 P.2d 823 (Colo. 1984) (additional consumptive use could not be obtained by draining a peat bog or wetlands); *State*

**B. Statutory Tools for Drought Management**

**1. Instream Flows**

Under the 1969 Act, the Colorado Water Conservation Board ("CWCB") is authorized to appropriate water for "minimum stream flows or for natural surface water levels or volumes for natural lakes to preserve the natural environment to a reasonable degree."<sup>34</sup> Appropriations for instream flows may only be made by the CWCB, not by private individuals, and must be made within the priority system, consistent with the restrictions in Sections 5 and 6 of Colorado's Constitution. The CWCB can also acquire water rights for instream flows "by grant purchase, donation, bequest, devise, lease, exchange, or other contractual agreement."<sup>35</sup>

In recent years, Colorado's legislature has expanded the resources available to the CWCB for instream flow purposes. In 2002, the legislature increased the sources of funding that the CWCB may use to acquire water for instream flows, to include "any funds available to it, other than the construction fund created in section 37-60-121, for acquisition of water rights and their conversion to instream flow rights."<sup>36</sup> In 2003, the legislature amended § 37-83-105, C.R.S., which provides for temporary loans or exchanges of water between water users in times of drought without requiring adjudication of a change of water rights, to allow the CWCB to receive water through loans from water users for instream flow purposes on a temporary basis, not to exceed 120 days, in any basin where the Governor has declared a drought or other emergency.<sup>37</sup> Such loans are subject to a determination by the State Engineer of non-injury to other water users.

The ability of the State to acquire water within the priority system for instream flow purposes is essential to its ability to protect wildlife and the environment in a prior appropriation state during times of drought. Since Colorado water law does not allow the State to consider environmental factors in allocating or administering water, the only way for the State to ensure protection of stream flows for public purposes is by acquiring water rights, itself, within the priority system. By acquiring a water right with an enforceable priority, the State can place environmental concerns on equal footing with agricultural, commercial, municipal and other uses of water. This means that in times of scarcity, the State's instream flows will be

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*Eng'r v. Castle Meadows, Inc.*, 856 P.2d 496, 510 (Colo. 1993) (augmentation water could not be obtained by paving impermeable land surfaces).

<sup>34</sup> C.R.S. § 37-92-102(3).

<sup>35</sup> *Id.*

<sup>36</sup> *See id.*

<sup>37</sup> House Bill 03-1320.



protected in a manner consistent with their priorities – to the extent the priorities are junior to other water rights, the CWCB's instream flows will be curtailed to make water available to other senior water users, and to the extent the CWCB's priorities are senior, the CWCB may request the Division Engineer to curtail more junior users to protect its instream flows.

### **2. Conditional Water Rights**

A conditional water right is defined in the 1969 Act as "a right to perfect a water right with a certain priority upon the completion with reasonable diligence of the appropriation upon which such water right is based."<sup>38</sup> A conditional water right allows an appropriator to secure a priority before water has been applied to beneficial use, based on a showing that the "first step" towards the appropriation has been taken. The "first step" includes the intent to appropriate, plus a demonstration of that intent through "physical acts sufficient to constitute notice to third parties."<sup>39</sup> Once the appropriator actually places the water to beneficial use, a final decree may be issued with a priority date relating back to the initiation of the appropriation through the "first step."

As explained by the Colorado Supreme Court in *Public Service Co. v. Blue River Irrig. Co.*,<sup>40</sup> a conditional water right "encourage[s] development of water resources by allowing the applicant to complete financing, engineering, and construction with the certainty that if its development plan succeeds, it will be able to obtain an absolute water right." Conditional water rights are crucial to large-scale development projects, such as trans-mountain diversions and storage projects, because they allow an appropriator to secure a priority to protect its investment when water cannot immediately be placed to beneficial use.<sup>41</sup> Thus, conditional water rights are a tool that may be used by cities or individuals to complete major water projects, including, storage reservoirs, trans-mountain diversion projects, or pipelines, for managing scarcity in times of drought.

### **3. Water Storage Rights**

A right to store water for later application to beneficial use is a recognized by the 1969 Act.<sup>42</sup> Storage rights, like other water rights, are assigned a priority and must be exercised without injury to other water rights.<sup>43</sup> Storage rights are obviously a very important mechanism for ensuring that water supplies will be adequate in times of drought.

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<sup>38</sup> C.R.S. § 37-92-103(6)

<sup>39</sup> *City of Aspen v. Colorado River Water Conservation Dist.*, 696 P.2d 758, 761 (Colo. 1985).

<sup>40</sup> 753 P.2d 737, 739 (Colo. 1988).

<sup>41</sup> See *Vranesh*, *supra* at 99.

<sup>42</sup> C.R.S. § 37-87-101.

<sup>43</sup> *Id.*

Reservoirs provide year-round water to cities when stream levels drop following the snow melt each year.<sup>44</sup> Over the years, there have been numerous reclamation projects undertaken by Colorado irrigation districts and water conservation districts in partnerships with the federal government.<sup>45</sup> Some examples of such projects include the Fryingpan-Arkansas Project, which serves eastern Colorado, and the Colorado-Big Thompson Project, which brings water from Western Colorado to the Front Range to meet the growing needs of cities.

Currently, the CWCB is investigating a major new water diversion/storage project to shore up Colorado's water reserves, known as Colorado River Return Project, also called "The Big Straw Project." This project would involve construction of a large-scale water delivery system to transport water from the Colorado River near the Utah border, eastward to the South Platte, Arkansas and Colorado River basins. A study of the feasibility of this proposal was initiated by the CWCB in 2002, and is due to be completed in November 2003.

#### **4. Changes of Water Rights**

A change of water rights is another tool that allows water users flexibility to maximize potential uses of water. As described in the 1969 Act, a change of water rights includes "a change in the type, place, or time of use, a change in the point of diversion," and changes in the manner or place of storage. A change of water rights will not be allowed unless it is approved by the water court,<sup>46</sup> subject to the "no injury rule," which requires a finding that the change "will not injuriously affect the owner of, or persons entitled to use, water under a vested water right or a decreed conditional water right."<sup>47</sup>

To prevent injury from a change of water rights, water courts restrict the amount of water that may be changed to the amount of historic consumptive use associated with the water right, which may be less than the amount decreed.<sup>48</sup> Thus only the amount of water actually consumed through use or evaporation, which is not returned to the stream as return flows, may be changed to a new place or type of use. This limitation ensures that the change will not enlarge the historic impact on the stream system, avoiding injury to other water users.

Changes of water rights allow for the reallocation of water resources to meet changing demands. For example, in Colorado, the highest demand for water was traditionally for agriculture, in rural areas. As

<sup>44</sup> See Hobbs, 1 U. Denv. Water L. Rev. 1 at 13, *supra*.

<sup>45</sup> See *id.* (for discussion of 1902 Reclamation Act and reclamation storage projects in Colorado).

<sup>46</sup> See *Northern Colo. Water v. Three Peaks Water*, 859 P.2d 836 (Colo. 1993).

<sup>47</sup> C.R.S. § 37-92-305(3).

<sup>48</sup> See *Santa Fe Trail Ranches Property Owners Ass'n v. Simpson*, 990 P.2d 46 (Colo. 1999).

a result of the population explosion in the Front Range during the past twenty years, however, the highest demand for water is now in municipal areas. The procedure for a change of water rights allows cities to purchase senior agricultural water rights, formerly used in rural areas, and change them to municipal uses in cities. Likewise, the CWCB can also purchase agricultural water rights and change them for use as instream flows.

The adjudication proceedings required to effect a change of water rights are time consuming and costly. Even when no parties object to the change, the process of water court approval takes a minimum of three months, and often much longer due to the heavy caseload of water court judges. If parties do intervene in a change case, it can take years to get a change decree approved by the court. In addition to the attorneys' fees, an applicant for a change of water rights generally must hire an engineering consultant to prepare a report explaining the technical aspects of the change and developing an accounting form to be used by the Division Engineer to administering the change. In order to avoid these costs and to speed the process, Colorado's legislature recently enacted legislation providing for leases of water without requiring a change of water rights to be adjudicated. This legislation is discussed immediately below.

#### ***5. Leases of Water***

During the last legislative session, C.R.S. §§ 37-80.5-101 to 105 were amended to authorize the State Engineer to create water banks within each water division, and to adopt rules governing their operation. The aim of this legislation is to simplify the process for transferring water rights by eliminating the adjudication proceedings required for a permanent change of water rights. The statute provides that the rules shall allow for the "lease, exchange, or loan of stored water within a water division," including a transfers to the CWCB for instream flow purposes, without the need to submit to any adjudication proceedings. Notwithstanding the fact that the lease, exchange or loan is not adjudicated, such arrangements will still be subject to administration by the Division Engineer, within the priority system, without material injury to other water users.

Even prior to the enactment of the above-described legislation, leases of water, particularly by municipalities during dry years, are common in Colorado. In March 2003, for example the city of Fort Collins entered into two yearlong leases with two irrigation companies, under which the city uses agricultural irrigation water rights for municipal uses.<sup>49</sup> The water rights subject to the leases belong to approximately 400 northern Colorado farmers, most of whom did not think enough water would be available this year due to drought

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<sup>49</sup> Denver Post, June 30, 2003, "Farmers' Market: Lease Water to Cities," by Coleman Cornelius.

conditions to enable them to farm their crops. Leasing their water allows the farmers to earn some income during a drought year when their crops are not likely to be successful, without permanently changing or selling their water rights. As a result of the drought conditions in recent years, the cost to lease water rights has risen from approximately \$25 per acre foot to \$300-\$500 per acre foot.<sup>50</sup>

### **6. Augmentation Plans**

An augmentation plan allows a water user to divert water out-of-priority from its decreed point of diversion, so long as replacement water is provided to the stream from another source, to make up for any deficit to other water users.<sup>51</sup> An augmentation plan, like a change of water rights, must be approved by the water court and is also subject to the "no injury rule." Accordingly, the 1969 Act requires substituted water to be "of a quality and quantity to meet the requirements for which the water of the senior appropriator has normally been used[.]"<sup>52</sup>

As explained by the Colorado Supreme Court in *In re Application of Midway Ranches v. Midway Ranches Property Owners Association, Inc.*,<sup>53</sup> "[a]ugmentation plans implement the Colorado doctrine of optimum use and priority administration, which favors management of Colorado's water resource to extend its benefit for multiple beneficial purposes." Augmentation plans provide a statutory mechanism for many different types of water users, big and small, to make water available when they want it, where they want it, by taking advantage of large water storage projects in which they have acquired shares, as well as other sources of augmentation water. In times of scarcity, an augmentation plan allows a water user to continue diverting even under a relatively junior priority, so long as it can purchase replacement water to satisfy the needs of downstream seniors.

### **7. Voluntary Measures**

During the summer of 2002, when Colorado's drought was at its worst, many water users undertook voluntary measures to ease the impact of drought on other water users and on the environment by abstaining from enforcing their priorities against juniors. For example, several ditch companies in northwest Colorado allowed water owned by the Colorado Division of Wildlife (DOW), stored in Big Beaver Reservoir, to flow past their head gates so that the water could reach a stream segment with an instream flow water right held by the CWCB, in order to protect fish in that stream segment.<sup>54</sup> The

<sup>50</sup> *Id.*

<sup>51</sup> C.R.S. § 37-92-305(5).

<sup>52</sup> *Id.*

<sup>53</sup> 938 P.2d 515, 522 (Colo. 1997).

<sup>54</sup> See <http://dnr.state.co.us/news/press.asp?pressid=2037>, "Water Users Allow Water to Bypass Diversion Structures to Benefit Environment," August 15, 2002.

DOW's water rights are decreed for storage and could not be used for instream flow purposes, because only the CWCB may hold an instream flow water right. Ordinarily, the ditch companies, whose water rights are senior to the CWCB's instream flow right on the affected segment, would divert the water released from the reservoir to satisfy their own priorities. Therefore, the ditch companies had no obligation under law to allow the water to flow past them to the affected reach.

Also during the summer of 2002, certain Grand Valley entities, including the Grand Valley Water Users Association, Orchard Mesa Irrigation District and the Grand Valley Irrigation Company reduced their call<sup>55</sup> for water to conserve water stored in upstream reservoirs for the next year. This had the added benefit of helping Denver Water by reducing the water it would owe under certain contractual arrangements to Dillon Reservoir this year by 15,000 acre feet.<sup>56</sup>

In addition, during 2002, several large power companies reduced their demand in order to allow reservoirs to fill, benefiting water users all over Colorado who are dependent on stored water. This past winter and spring, the Shoshone power plant eliminated its call for water to one of its two turbines, cutting power generation in half, in order to allow Granby, Green Mountain, Williams Fork, Dillon and Windy Gap reservoirs to fill. Shoshone was reimbursed, primarily by Denver Water, for its loss of power, but absorbed other costs associated with foregoing power.<sup>57</sup> Between the fall of 2002 and April, 2003, Redlands Power Authority reduced its demand from 750 to 600 c.f.s., benefiting the entire Gunnison River Basin and allowing water to be stored in the Aspinall Unit. Redlands was compensated primarily by the Colorado River Water Conservation District for revenue lost due to decreased electrical generation.<sup>58</sup>

Nothing under Colorado water law prevents water users from adopting voluntary, or paid, arrangements under which a senior water user temporarily agrees to forego calling out a junior user. In order to have a water right abandoned through non-use, failure to use the water right must endure for a significant amount of time and there must be intent to abandon the right. According to the Division Engineers for Water Divisions 4 and 5, these types of "neighborly" arrangements were fairly common among water users during 2002, when drought conditions were at their peak.

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<sup>55</sup> The call for water by these entities is collectively referred to as the "Cameo call," named after the Cameo gauging station at the Xcel Energy power plant on the Western Slope.

<sup>56</sup> This information was obtained from Alan Martellaro, Division Engineer, Water Division No. 5.

<sup>57</sup> *Id.*

<sup>58</sup> This information is based on conversations with Frank Kugel, Division Engineer, Water Division No. 4.

## II. Federal, State and Local Legal Tools for Drought Management

The following section includes examples of tools that may be utilized in Colorado to cope with drought, including: (1) federal programs designed to assist states to deal with drought; (2) state statutory tools, in addition to the major statutory tools discussed in more detail above; and (3) local municipal approaches to drought management.

### A. *Federal Tools for Drought Management in Colorado*

Many federal programs exist to assist states in times of drought. These programs focus primarily on the provision of funds or technical assistance, including information on weather trends and monitoring data, for example. Table 5-1 shows examples of assistance available to states from the federal government, but is not comprehensive.

**Table 5-1: Federal Tools for Drought Management in Colorado**

<p><b>1. National Streamgaging Program</b></p> <p>"Under this program, the USGS collects the streamflow data needed by Federal, State, and local agencies for planning and operating water-resource projects and regulatory programs." For this program the USGS continuously measures the stage and flow at key points on streams and rivers and also monitors ground-water levels, reservoir contents, and water quality. The data made available is used in responding to drought emergencies, characterizing a drought, finding alternative supplies of water, and allocating water resources.</p>
<p><b>2. USACE Emergency Water Supply/ Drought Assistance Program</b></p> <p>Under this program the U.S. Army Corps of Engineers is "authorized to transport emergency supplies of clean drinking water for human consumption to any designated area as a drought distressed area, and to construct wells in such drought distressed areas." The assistance provided through this program is supplemental to State and local efforts and is applicable in any locality faced with a threat to public health and welfare as a result of drought.</p>
<p><b>3. Crop Disaster Program</b></p> <p>Under this program, farmers are reimbursed for crop production and quality losses (other than sugar cane, sugar beets or tobacco). For crops produced during 2001 and 2002, payments were issued for losses exceeding 35% of expected crop production at: 50% of the established price for crops covered by insurance, 50% of the established price for crops which insurance was not available and 45% of the established price to producers for crops that could have been but were not insured.</p>
<p><b>4. Noninsured Crop Disaster Assistance Program</b></p> <p>This program provides financial assistance to eligible farmers affected by natural disasters, including drought. This federally funded program covers non-insurable crop losses and planting prevented by disasters.</p>
<p><b>5. Reclamation Reform Action</b></p> <p>Section 210(b) of the Reclamation Reform Act and most water service contracts and repayment contracts executed after July 17, 1979, contain provisions requiring contractors to prepare and submit water conservation plans.</p>
<p><b>6. 2003 Livestock Feed Program</b></p> <p>This program provides relief to livestock producers in areas hit hardest by drought by making available surplus stocks of non-fat dry milk. This non-fat dry milk serves as a high quality source of protein to maintain foundation livestock herds during the drought.</p>
<p><b>7. Federal Energy Management Program ("FEMP")</b></p> <p>This program provides technical support to federal facility managers to help identify opportunities for successful water conservation projects. The purpose of the program is to enable agencies to move easily from identifying a project to implementing it. The FEMP's technical assistance program offers a broad range of services that include project and financing assistance, software tools, and training.</p>
<p><b>8. National Oceanic and Atmospheric Administration: Drought Information Center</b></p> <p>The National Oceanic and Atmospheric Administration has an online drought information center, which provides current information on drought and climate conditions. In addition to giving an updated assessment of recent conditions and drought status, the website provides a number of other services including: U.S. soil moisture monitoring, a monthly-standardized precipitation index, and a crop moisture index that is updated weekly.</p>
<p><b>9. Reclamation Drought Relief Act</b></p> <p>This 1991 act allows for the temporary use of federal facilities to store and convey non-project water in drought situations.</p>

### B. *State Statutory Tools for Drought Management*

In addition to the major statutory tools allowing for flexible water use in Colorado, discussed above, there are several other Colorado statutes that address drought management. These statutes are summarized briefly in Table 5-2.

**Table 5-2: State Statutory Tools for Drought Management**

<b>1. C.R.S. § 24-32-2105.5</b>
Encourages the Water Availability Task Force to continue to monitor drought conditions to recommend legislation addressing drought emergencies.
<b>2. C.R.S. § 37-60-123.5</b>
Appropriates funds to the CWCB for use in making loans and grants to agricultural organizations for emergency drought-related water augmentation purposes.
<b>3. C.R.S. § 37-60-106(1)(c) &amp; (d)</b>
Authorizes the CWCB to formulate plans for "bringing about the greater utilization of the waters of the state" and to "gather data and information" to the same ends.
<b>4. C.R.S. § 37-60-124</b>
Establishes the Office of Water Conservation, which oversees a program to generate water efficiency information and which administers grants for municipal water efficiency demonstration projects.
<b>5. C.R.S. § 37-60-115</b>
Authorizes the CWCB to study water resources toward a "unified and harmonious development of all waters for beneficial use in Colorado to the fullest extent possible under the law," including studies regarding inter-basin transfers.
<b>6. C.R.S. § 37-98-102</b>
Creates a water resources review committee to monitor the conservation and development of water resources in Colorado.
<b>7. C.R.S. § 37-92-309</b>
This section, adopted during the last legislative session, gives the State Engineer authority to approve temporary, "interruptible water supply agreements" between water users, providing for the temporary transfer of historic consumptive use credit to another type and/or place of use, without requiring adjudication of a change of water rights. Such agreements are subject to approval by the State Engineer upon a finding of non-injury to other water users and non-interference with inter-state compact requirements, and will only be approved for operation during a calendar year in which a drought or other emergency has been declared by the Governor, and the first full calendar after the declared emergency terminates.
<b>8. C.R.S. § 37-83-104</b>
Allowing water users to release stored water to the stream, or to a ditch, and in exchange, to divert an equal amount of water from a point higher upstream, without adjudicating an exchange. Such exchanges are subject to the "no injury rule," and a water user undertaking such an exchange may be required by the State Engineer to release additional water from storage to make up for delivery losses.
<b>9. C.R.S. § 37-83-105</b>
Allowing persons taking water from the same stream or ditch to exchange or loan water to one another, for a limited time, for the purpose of saving crops, or using water in a more economical manner, without requiring an adjudication of a change of water rights. As discussed above, this section was recently amended to allow temporary loans of water to the CWCB for instream flow purposes.
<b>10. C.R.S. § 37-83-106</b>
Allowing water conservancy and conservation districts to enter into cooperative agreements with other political subdivisions for the lease or exchange of water outside district boundaries.

### C. *Local Drought Measures*

In response to drought conditions, many municipalities in Colorado have adopted programs imposing watering restrictions and

promising economic incentives encourage their constituents to conserve water. These programs can be expected to increase in the coming year in response to a resolution adopted during the last legislative session. House Joint Resolution 03-1015 calls upon homeowners' associations, municipalities and counties to review their covenants, codes and ordinances, as needed to encourage water conservation measures, specifically including the to encourage water conservation measures, specifically including the use of soil enhancements and Xeriscaping™. Table 5-3 contains some examples of measures and programs adopted by Colorado municipalities in response to the drought.

**Table 5-3: Some Examples of Local Drought Measures**

<b>1. Denver</b>
Denver disseminates drought information and conservation tips on its website and has adopted watering restrictions due to drought conditions, including time limits for irrigation zones, new sod watering restrictions and car washing restrictions. In addition, Denver offers several different economic incentives to promote water conservation, including a rebate of up to \$720.00 for residential customers who make water saving improvements to their irrigation systems, or plant drought tolerant trees and shrubs, as well as rebates towards the installation of water efficient toilets and washing machines.
<b>2. Boulder</b>
Boulder distributes drought information and conservation tips on its website and has adopted voluntary watering restrictions, asking its customers to limit watering to every three days. Boulder also offers a number of rebate programs that allow customers to earn money for installing drought-tolerant plants and for using water efficient washing machines.
<b>3. Thornton</b>
Thornton has voluntary watering restrictions in place, whereby residents are encouraged to avoid watering during the middle part of the day and to limit watering to three days a week. Thornton also has a rebate program allowing residents to earn money for installing water saving toilets, washing machines and shower heads. Thornton also has plans to implement an education program for school children concerning water conservancy.
<b>4. Grand Junction</b>
Grand Junction has a number of water conservations programs which include: education, training, use of technological tools that monitor water use and waste, and water saving projects in parks and golf courses. As an example of a water saving project, two of Grand Junction's golf courses use a computerized irrigation system connected to a weather station. This system calculates the evapotranspiration (ET) daily and can adjust the watering based on how much water is actually needed.
<b>5. Telluride</b>
Telluride is implementing mandatory water conservation measures which include: prohibiting the refilling of pools, hot tubs, or landscape water features, prohibiting the installation of new public or private landscaping, and limiting landscape irrigation to 30 minutes during certain times of the day and every other day dependent upon address.
<b>6. Trinidad</b>
Trinidad has adopted a number of water restrictions including: restricting lawn watering to every other day, limiting water served in restaurants to those customers who expressly request it, and mandating that individuals washing vehicles at home must do so with a bucket and a quick shut-off type nozzle on their hose.
<b>7. Fort Morgan</b>
Fort Morgan has a number of restrictions currently operating including: restrictions on lawn watering to specific days of the week and specific times, prohibitions on filling of fountains or pools, and prohibiting restaurants from serving water unless requested by the customer. In addition to their water restrictions, Fort Morgan has on its website, seven pages of water saving tips, ranging from how to water trees during a drought to recommending the use of low-volume toilets.