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THE ROLE OF TEMPORARY CHANGES OF WATER RIGHTS IN COLORADO

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I. INTRODUCTION

"Buy and dry" has become a rallying cry in Colorado.[1] For those not familiar with the phrase (usually a pejorative), it references the sale and severance of water rights originally decreed for irrigation from previously irrigated lands, and the subsequent use of that water for other purposes not upon that land.[2] Many of the communities and farms that malign "buy and dry" practices do so out of the impression that cities are out to "take" their water.[3] Certain voices in these rural communities point to a long list of perceived negative effects they associate with changes in land use, including reductions in the total number of acres irrigated,[4] reductions in population in nearby communities,[5] and potential economic effects resulting from reductions in irrigated acres.[6] Despite perceived community downsides, individual agricultural water rights holders continue to voluntarily sell their water rights to municipal water users.[7]

But, "buy and dry" is only a small part of the story. For cities and other municipal water suppliers, the issue is not about trying to "take" water away from agricultural water users, but instead about trying to meet the expanding water demand of a growing population.[8] Recent studies indicate that Colorado's population will likely grow by nearly eighty percent by 2050.[9] Statewide, municipal, and industrial water suppliers face an expected water deficit of 633,000 acre-feet based upon such population growth.[10]

To put this 633,000 acre-feet deficit into perspective, the historical average annual stream flows leaving the state of Colorado from the South Platte River Basin and the Arkansas River Basin –the basins in which almost eighty-eight percent of Colorado's population reside[11] – is about 702,000 acre-feet a year.[12]

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1. *See* Matt Jenkins, *A Colorado Newspaperman Fights for His Valley's Water*, HIGH COUNTRY NEWS, Mar. 19, 2012, http://www.hcn.org/issues/44.5/a-colorado-newspaperman-fights-for-his-valleys-water.

2. *See* Megan Verlee, *Thirsty Cities, Dry Farms: Part 1 - Buy and Dry*, COLO. PUB. RADIO, July 27, 2011, http://www.cpr.org/article/Thirsty_Cities_Dry_Farms_pt_1__Buy_and_Dry; *see also* Jennifer Thorvaldson & James Pritchett, *Economic Impact Analysis of Reduced Irrigated Acreage in Four River Basins in Colorado*, 207 COLO. WATER RES. RESEARCH INST. 5 (2006).

3. Jenkins, *supra* note 1; *see also* Thorvaldson, *supra* note 2, at 5.

4. Bruce Finley, *Colorado Farmland Goes Dry as Suburbs Secure Water Supplies*, THE DENVER POST, Mar. 13, 2011, http://www.denverpost.com/recommended/ci_17598524.

5. James Pritchett, et al., *Water Leasing: Opportunities and Challenges for Colorado's South Platte Basin*, 2008 W. AGRIC. ECON. ASSOC. 3-4, *available at* http://agecon-search.umn.edu/bitstream/37725/2/Thorvaldson_WAEA_2008_Paper.pdf.

6. Thorvaldson, *supra* note 2, at 7.

7. Finley, *supra* note 4.

8. *See* Cathy Proctor, *Steady Water Supply Oils the Gears of Business*, DENVER BUS. J., Sept. 7, 2012, http://www.bizjournals.com/denver/print-edition/2012/09/07/steady-water-supply-oils-the-gears-of.html.

9. COLO. WATER CONSERVATION BD., STATEWIDE WATER SUPPLY INITIATIVE 2010, APPENDIX H–STATE OF COLORADO 2050 MUNICIPAL & INDUSTRIAL WATER USE PROJECTIONS 2-11 (2010), *available at* http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/Appendix%20H_State%20of%20Colorado%202050%20Municipal%20and%20Industrial%20Water%20Use%20Projections.pdf.

10. COLO. WATER CONSERVATION BD., ALTERNATIVE AGRICULTURAL WATER GRANT PROGRAM SUMMARY 1 (2011), *available at* http://cwcbweblink.state.co.us/weblink/0/doc/150555/Electronic.aspx?searchid=9918b278-0e2f-4c0e-acff-280192b81b95.

11. COLO. WATER CONSERVATION BD., *supra* note 9, at 2-11 tbl.2-2.

12. HYDROGRAPHIC BRANCH, COLO. DIV. OF WATER RES., COLORADO HISTORICAL

Put another way, the projected municipal and industrial deficits alone would consume ninety percent of the water naturally produced in those basins, which has heretofore flowed downstream to neighboring states. Such a comparison illustrates the magnitude of the water deficit problem facing Colorado.

In short, projected water needs will exceed the physical supply of water in these basins. Indeed, between Colorado's existing water uses and its compact commitments to downstream states, there is little unappropriated water supply available in Colorado.[13] Therefore, the practical reality facing many municipal water suppliers is that transfers of existing water supply to new uses is the mechanism available to meet growing demands.

Thus, "buy and dry" is only half the story. The full story is that Colorado anticipates a growing water demand, which necessitates the continued transfer of existing water rights to new uses. Considering Colorado agriculture accounts for eighty-six percent of the state's consumptive water use,[14] the overwhelming likelihood is that Colorado's agricultural water supply will be a source of supply to municipalities in some form.

Outright purchase is the simplest method for effectuating these transfers. Colorado law has long recognized the ability of water right owners to sell, sever, and change their water rights as an exerciseable privilege and an important stick in the bundle of rights constituting a Colorado water right.[15] Under this legal regime, it is fanciful to believe that willing sellers and willing buyers will not do business, particularly where the demand for water is great. However, that is not to say that "buy and dry" is the only solution – or even the best solution.

Recently, the Colorado Water Conservation Board ("CWCB"), under the auspices of the 2010 Statewide Water Supply Initiative ("SWSI"), published a final report that outlines several alternative agricultural water transfer methods.[16] The report identified several reasons why there has not been significant development of alternative agricultural water transfer methods in Colorado, including:

- Lack of financial incentive to seek an alternative to permanent water transfers
- Expensive transaction costs to obtain water court approval, which is required for any permanent alternative water transfer
- Lack of a viable administrative process for approving alternative water transfers
- Uncertainty regarding accounting and administration of alternative water transfers
- Verification that a given water right has not expanded under the auspices

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AVERAGE ANNUAL STREAM FLOWS (2011), http://water.state.co.us/DWRIPub/DWR%20Maps/2011SnakeDiagram.pdf.

13. *See* COLO. WATER CONSERVATION BD., STATEWIDE WATER SUPPLY INITIATIVE 2010 6-3 (2011), *available at* http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/SWSI2010.pdf.

14. *Colorado's Water Needs*, COLORADO WATER CONSERVATION BD., http://cwcb.state.co.us/water-management/water-supply-planning/Pages/ColoradosWaterSupplyNeeds.aspx (last visited Feb. 1, 2014).

15. Williams v. Midway Prop. Owners Ass'n, 938 P.2d 515, 523 (Colo.1997); Pueblo W. Metro. Dist. v. Se. Colo. Water Conservancy Dist., 717 P.2d 955, 959 (Colo. 1986).

16. COLO. WATER CONSERVATION BD., *supra* note 13, at 7-18 tbl.7-6.

of an alternative water supply transfer and

- Desire for permanence and certainty of any alternative water supply transfer.[17]

These reasons are by no means an exclusive list of the problems facing alternative transfer methods. However, the list identifies an important impediment: a lack of the necessary legal framework to successfully implement alternative water transfers.

One of the alternative water transfer methods suggested in the SWSI is the Interruptible Water Supply Agreement ("IWSA").[18] An IWSA is a statutorily recognized agreement, which, if approved by the Colorado State Engineer's Office, allows for a temporary change of an absolute water right for a new use.[19] The statute does not require an adjudication of the agreement in the Colorado water courts, but only allows for the proposed changes to operate for three seasons during a ten-year period.[20]

Since the enactment of the IWSA statute in 2003,[21] no one has utilized it in any significant fashion.[22] Despite the failure of the IWSA statute to promote temporary water transfers over permanent water transfers, there is still a will, and a need, to make such temporary transfers a reliable mechanism for obtaining temporary water supplies. In 2007, the Colorado Assembly enacted Senate

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17. *Id.* at 7-19.

18. COLO. WATER CONSERVATION BD, *supra* note 10, at 4-5.

19. COLO. REV. STAT. § 37-92-309 (2014).

20. §§ 37-92-309 (1), (3) (c).

21. Act of Jun. 5, 2003, ch. 363, 2003 Colo. Sess. Laws (2003).

22. For example, the City of Aurora and the Rocky Ford area High Line Canal Company entered into a temporary lease that operated very much like an interruptible water supply agreement, but the SEO approved that agreement pursuant to different legislative authority. *See* Application Letter from Duncan, Ostrander & Dingess, P.C., on behalf of the City of Aurora, to Hall Simpson, P.E., State Engineer, Office of the State Eng'r, Colo. Div. of Water Res. (June 30, 2003) (on file with *Water Law Review*) [hereinafter "Aurora Application, Water Year 2004"]; Decision Letter from Office of State Eng'r to John M. Dingess, Duncan, Ostrander & Dingess, P.C. (Jan. 30, 2004) (on file with *Water Law Review*) [hereinafter "SEO Approval, Water Year 2004"]. Also, in 2012 East Cherry Creek Valley Water and Sanitation District, the Arapahoe County Water and Wastewater Authority, and the United Water and Sanitation District submitted two interruptible water supply agreement applications that the State Engineer's Office approved on December 24, 2012; however, the applicants subsequently requested to cancel the applications on February 8, 2013. *See* Request for Approval Letter from William B. Tourtillott et al., on behalf of Arapahoe Cnty. Water & Wastewater Auth. & United Water & Sanitation Dist., to Joanna Williams, Office of the State Eng'r (Apr. 16, 2012) (on file with *Water Law Review*); Request for Approval Letter from William B. Tourtillott et al., on behalf E. Cherry Creek Valley Water & Sanitation Dist. & United Water & Sanitation Dist., to Joanna Williams, Office of the State Eng'r (Apr. 16, 2012) (on file with *Water Law Review*); Approval Letter from Kevin G. Rein, P.E., Deputy State Eng'r, to Tod J. Smith, on behalf United Water & Sanitation Dist & Arapahoe Cnty. Water & Wastewater Auth. (Dec. 24, 2012) (on file with *Water Law Review*); Approval Letter from Kevin G. Rein, P.E., Deputy State Eng'r, to Tod J. Smith, on behalf United Water & Sanitation Dist. & E. Cherry Creek Valley Water & Sanitation Dist. (Dec. 24, 2012) (on file with *Water Law Review*);Request to Cancel Letter from Brian M. Nazarenus et al., to Kevin G. Rein, Office of the State Eng'r. (Feb. 8, 2013) (on file with *Water Law Review*). [hereinafter collectively "ACWWA, ECCV & United IWSA Applications."] Finally, various CWCB funded Alternative Agricultural Water Transfer Method Grant Programs proposed exploring interruptible water supply agreements. *See* COLO. WATER CONSERVATION BD., ALTERNATIVE AGRICULTURAL WATER TRANSFER METHODS GRANT PROGRAM SUMMARY 11-12 (2011), *available at* http://cwcbweblink.state.co.us/weblink/0/doc/150555/Electronic.aspx?searchid=9918b278-0e2f-4c0e-acff-280192b81b95.

Bill 07-122, which appropriated $1,500,000 for a grant program "to advance various agricultural transfer methods as alternatives to permanent agricultural dry-up in the South Platte and Arkansas river basins, including but not limited to, interruptible water supply agreements . . . ."[23] In 2009, the Colorado Assembly enacted Senate Bill 09-125, which appropriated an additional $1,500,000 for the grant program and removed language limiting the program to the Arkansas and South Platte River Basins.[24] A review of the grant recipient projects indicates that only one more potential IWSA project will is likely to occur in the near future, although at least two other grant recipient projects may use IWSAs as a mechanism for their proposed temporary changes.[25]

Based on these investments, the State of Colorado must consider it laudable to investigate and incentivize these alternative water transfers. But at present, the IWSA statute is one of the only alternative water transfer mechanisms available in Colorado.[26] Consequently, there is value in developing an IWSA statute desirable to Colorado water users because other alternative water transfer methods - such as rotational fallowing, purchase and lease-back, and water banking - are likely to operate similarly in form to an IWSA[27] and face common legal impediments to successful implementation. Accordingly, developing a workable legal framework for IWSAs may further other forms of temporary transfers in Colorado.

Having a variety of means to transfer water to new uses is important, because it adds flexibility to our administration of a dynamic water resource. Colorado should embrace the opportunity to implement additional transfer methods, recognizing that such methods could preserve Colorado water users' individual property rights while simultaneously addressing serious water supply deficits. In short, establishing alternative transfer mechanisms allows individual water users to make decisions about their own water rights. However, Colorado must be wary of expanding the property rights of one group of water users to the detriment of another. To that end, the legal frameworks Colorado establishes allowing alternative transfer mechanisms will be very important.

Because of the unique role IWSAs currently play, and the increasing interest in other alternative transfer mechanisms, this article seeks to: (I) review the

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23. Act of May 31, 2007, ch. 352, sec. 18, 2007 Colo. Sess. Laws 1511, 1517-18.

24. Act of June 1, 2009, ch. 328, sec. 4, 2009 Colo. Sess. Laws 1745, 1746.

25. COLO. WATER CONSERVATION BD., *supra* note 10, at app. A 2-3 (showing that the Colorado Corn Growers Association's DT Ranch project appears to be the only project that definitely seeks to implement a IWSA temporary transfer).

26. Pursuant to 2003 amendments, the Arkansas River Pilot Water Banking Act allows water banks in all water divisions in Colorado upon request by a water conservancy district. Arkansas River Pilot Water Banking Act, COLO. REV. STAT. § 37-80.5-101 to -102 (2001). To date, only the Arkansas River Basin has an approved water bank. *See* 2 COLO. CODE REGS. § 402-12 (2013) (noting Rules Governing the Arkansas River Water Bank Pilot Program). Similarly, the Colorado General Assembly has recently enacted legislation allowing a limited number of pilot projects effectuating temporary lease-fallowing transfers. *See* Act of May 13, 2013, ch. 210, sec. 2, 2013 Colo. Sess. Laws 878.A certain form of Substitute Water Supply Plans ("SWSP") has allowed temporary transfers of water rights in the past. *See* COLO. REV. STAT. § 37-92-308(5)(a) (2012). However, it is unclear how that authority could be used for such temporary transfers in the future, as the IWSA statute now exists. Accordingly, the IWSA statute is the only practical alternative to "buy and dry" available statewide. COLO. REV. STAT. § 37-92-309 (2013).

27. *See* COLO. WATER CONSERVATION BD., *supra* note 10, at app. B 11-12 (discussing extension of IWSAs for use in the rotational fallowing projects).

existing IWSA statute in order to understand the current legal framework for temporary changes of water rights in Colorado; (II) analyze the Aurora - High Line Canal Lease Agreements to obtain a better understanding of how and why parties might utilize such temporary changes; and (III) discuss some of the observations and lessons learned from those water leases. This article seeks to provide practitioners with useful tips and considerations regarding temporary water rights transfers, while commenting on the potential utility of temporary changes and how such changes may become a more useful component of Colorado water use.

II. EXISTING IWSA STATUTE

The Colorado Revised Statutes section 37-92-309 authorizes IWSAs.[28] The statute contemplates approval and operation of temporary changes pursuant to IWSAs without water court approval.[29] Instead, the Colorado State Engineer's Office ("SEO") reviews, approves, and administers IWSA temporary changes.[30]

However, the SEO has limited authority. The statute only applies to temporary changes that in no event permanently change a water right.[31] The SEO may only permit "temporary change[s] in the point of diversion, location of use, and type of use," and such IWSA changes may only apply in the case of absolute rights, not conditional rights.[32] Moreover, the SEO must deny any proposed temporary change if it will require adjudication by the court.[33]

A. THE APPLICATION AND AGREEMENT

The statute defines an IWSA as "an option agreement between two or more water right owners . . . ."[34] Thus, the IWSA statute regulates not only the temporary uses of water, but also the nature of the contractual relationship between the parties. The statute classifies the potential parties as the "owner of the loaned water right" and the "borrowing water right owner," and defines any operation of the temporary change as an exercise of an option to lease a water right.[35] Amendments to the statute in 2013 further defined "loaned water right" as "any identified water right, or identified portion of a water right, specifically described in the interruptible water supply agreement."[36] The parties to such an agreement still have wide latitude to propose contract terms unique to their situation, so long as the form of the transfer operates as an option to exercise a lease of a specific water right.

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28. COLO. REV. STAT. § 37-92-309 (2013).

29. "The general assembly hereby finds, determines, and declares that there are certain circumstances under which administrative approval of the use of interruptible water supply agreements can maximize the beneficial use of Colorado water resources without the need for an adjudication and without injury to vested water rights or decreed conditional water rights." § 37-92-309(1). Nonetheless, the water courts have jurisdiction to judicially review appeals of SEO determinations made pursuant to the IWSA statute. § 37-92-309(4)(a).

30. § 37-92-309(3).

31. § 37-92-309(1).

32. § 37-92-309(3).

33. *Id.*

34. § 37-92-309(2)(a).

35. *Id.*

36. § 37-92-309(2)(b).

An IWSA's approval begins with an application.[37] The statute does not expressly provide application requirements, except that an application must include a "detailed written report, prepared by a professional engineer" at the time of filing.[38] The report must evaluate the water right's historical consumptive use, return flows analysis, and any potential injuries to other water rights that may result from the exercise of the IWSA if approved. [39]

However, the statute also requires that the interruptible water supply agreement - as opposed to the application - quantify the loaning water right's historical consumptive use, and describe the land where the consumptive use occurred.[40] If the loaned right is an irrigation right, the agreement shall include a plan preventing erosion and blowing soils, and describe how the agreement will comply with all local county noxious weed and land use regulations.[41]

B. NOTICE AND COMMENT

The application process bears many similarities to the resume-notice procedures that the Colorado Water Courts use,[42] as well as the publication procedures that other western states utilize for changes of water rights.[43] The applicant must provide written notice of the application via mail or email to all parties who have subscribed to a notification list for the water divisions in which the water right is currently located and where it is proposed to be temporarily used.[44] Applicant must file proof of such notice with the SEO.[45]

Owners of water rights[46] have thirty-five days after such notice to provide the SEO with comments regarding the proposed IWSA.[47] Any claims of injury, and any terms and conditions that a party believes should be included in the proposed IWSA in order to protect their water rights from injury must be raised in these comments[48]

In 2013, the Colorado General Assembly passed amendments to the IWSA statute that changed the notice and comment procedures under certain

37. § 37-92-309(3)(a).

38. *Id.*

39. *Id.*

40. § 37-92-309(3)(b).

41. *Id.*

42. § 37-92-302(3)(a).

43. *See* MONT. CODE ANN. § 85-2-307 (2013); UTAH CODE ANN. § 73-5-13(4) (West 2013); WASH. REV. CODE § 90.03.280 (2013); WYO. STAT ANN. § 41-3-104 (2013).

44. COLO. REV. STAT. § 37-92-309(3)(a) (2013).

45. *Id.*

46. Unlike water court proceedings, in which all "persons" have standing to participate, standing to oppose an IWSA application is defined instead by ownership of, and potential injury to, an existing water right. *Compare* Buffalo Park Dev. Co. v. Mountain Mut. Reservoir Co., 195 P.3d 674, 687 (Colo. 2008) (discussing standing to participate in water court proceedings), *with* COLO. REV. STAT. § 37-92-309(3)(a) (2013) (establishing which parties may file comments with the SEO pertaining to IWSA applications). Moreover, holders of conditional water rights may have limited standing to participate in IWSA proceedings as well. *See* COLO. REV. STAT. § 37-92-309(3)(a) (2013) (noting that the statute only protects decreed conditional water rights from injury "if such conditional rights will be exercised during operation of the interruptible water supply agreement").

47. § 37-92-309(3)(a).

48. *Id.*

circumstances.[49] Section III discusses those amendments in greater detail.

C. STATE ENGINEER'S DETERMINATION

The SEO considers the application and comments and makes a determination on the application.[50] Although the IWSA statute does not require a formal hearing or proceeding on the matter, it does allow a hearing at the SEO's discretion.[51]

Specifically, the SEO determines whether the operation and administration of the proposed IWSA will: (I) "effect only a temporary change in the historical consumptive use of the [loaning] water right;" (II) "not cause injury to other water rights;" and (III) "not impair compliance with any interstate compact."[52] Furthermore, the SEO need not merely approve or deny an application.[53] In its discretion, the SEO may impose any terms and conditions necessary to meet the three statutory standards.[54]

D. APPEAL OF SEO DETERMINATION

After approving or denying any IWSA, the SEO must mail (or e-mail) a copy of its decision to all parties to the application.[55] Any party to the application may appeal the decision to the water court of the applicable water division.[56] Parties must make such appeals within thirty-five days of the mailing of the decision.[57]

Procedurally, the water court must comply with Colorado Revised Statutes § 37-92-304 and § 37-92-305, the same statutes governing court procedures in other water matters.[58] The IWSA statute deems the IWSA "proponent" – presumably the IWSA applicant – as the "applicant" for purposes of Colorado Revised Statutes § 37- 92-304 and § 37-92-305.[59]

Although the standards and procedures the water court uses for this matter do not substantially differ from other matters before the water court, an IWSA appeal differs in two notable ways. First, the IWSA statute requires that the water judge determine such appeals under the same procedures for determining matters referred to the water judge by the water referee.[60] Thus, the water judge hears IWSA appeals directly, and the appeal will spend no time on the water referee's docket. Second, the IWSA statute directs the water judge to expedite the appeal.[61]

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49. Act of Jun. 4, 2013, ch. 415, 2013 Colo. Sess. Laws (2013).
50. COLO. REV. STAT. § 37-92-309(3)(b) (2013).
51. *Id.*
52. *Id.*
53. § 37-92-309(4)(a).
54. § 37-92-309 (3)(b).
55. § 37-92-309(4)(a).
56. *Id.*
57. *Id.*
58. *Id.*
59. *Id.*
60. *Id.*
61. *Id.*

The scope of any appeal is solely the issue of injury resulting from the operation of the proposed IWSA.[62] The water judge applies the same legal standards in that injury inquiry as in any other water matter; specifically, the water judge must apply the injury standards provided in Colorado Revised Statutes § 37-92-304 and § 37-92-305.[63] The IWSA statute provides that "[n]either the approval nor the denial of the agreement by the state engineer shall create any presumptions, shift the burden of proof, or serve as a defense in any legal action that may be initiated concerning the interruptible water supply agreement."[64] Consequently, the applicable procedures and standards of Colorado Revised Statutes § 37-92-304 and § 37-92-305 require the proponent of an IWSA to establish a *prima facie* case of no-injury to existing water users without the benefit of administrative deference to the prior SEO decision.[65]

The IWSA statute goes to great lengths to ensure that an IWSA appeal will have no issue preclusive effect in separate legal actions: "the water judge shall not deem any failure to appeal all or any part of the decision of the state engineer or failure to state any grounds for appeal to preclude any party from raising any claims of injury in a future proceeding before the water judge."[66]

E. OPERATION OF THE IWSA

If the IWSA is approved, the borrowing water right owner may exercise the IWSA option to lease up to three times during a ten-year period.[67] The ten-year period begins running at the time the IWSA is approved.[68] Each time the borrowing water right owner exercises the option, he or she may divert and use the loaned water right for its temporarily changed purpose during the next water year.[69] Such operation remains subject to the priority system and the terms of the approval by the SEO.[70]

However, the IWSA statute requires the borrowing water user to determine if he or she will exercise the option in any given year no later than March 1.[71] If the borrowing water user decides to exercise the option, he or she must provide notice by March 1 of that year to all parties that submitted comments on the application.[72]

F. RENEWED COMMENTS ON INJURY

After the borrowing water right owner has exercised and operated the IWSA for the first time, any party to the original IWSA application may file additional comments with the SEO concerning the potential injury to its water

62. *Id.*
63. *Id.*
64. *Id.*
65. § 37-92-304(3); §§ 37-92-305(c)(II), (d); § 37-92-309(4)(a).
66. § 37-92-309(4)(a).
67. § 37-92-309(3)(c).
68. *Id.*
69. § 37-92-309(2)(a)(II).
70. *Id.*
71. § 37-92-309(3)(d).
72. *Id.*

rights due to the operation of the IWSA.[73] Parties may file such comments only after the first time the borrowing water right owner exercises the option. The parties must submit the comments no later than January 1 of the following year.[74] Such comments will initiate the same notice and comment, SEO determination, and water court appeal process as the initial application required.[75] In essence, potentially injured water rights holders may renew their objections to the operation of the IWSA, presumably to address potential injury actually experienced during the initial operation of the IWSA.

III. 2013 AMENDMENTS TO THE IWSA STATUTE

In the 2013 legislative session, the Colorado General Assembly enacted an amendment to the IWSA legislation that created the ability to renew an IWSA for up to two additional ten-year periods.[76] Prior to 2013, if the borrowing water right owner exercised the IWSA option at any time during the approved ten-year period, no future IWSA could include the subject water right.[77] If a borrowing water right owner, however, never exercised the IWSA during the ten-year period, he or she could renew that same IWSA once under the same application process described above.[78]

A. UP TO TWO RENEWAL APPLICATIONS PERMITTED

The 2013 amendment now allows a limited number of renewals of previously approved IWSA plans.[79] The amendment made no changes to the provision that allows an applicant to make one renewal application for an IWSA that a borrowing water right owner never exercised during the initial ten-year option period.[80] However, the 2013 amendments added subsection six, which allows an applicant to re-apply for up to two additional renewals of an IWSA, irrespective of whether the borrowing water right user had exercised the IWSA.[81] The ability to renew the IWSA pursuant to subsection six comes with additional procedural safeguards and requirements, which are listed below.[82]

B. "RESUME NOTICE" PUBLICATION

Renewal applications must now include a resume of the renewal application that applicants file with the water clerk in the water division(s) in which the loaned water right is located.[83] The water clerk then publishes the resume "in

73. § 37-92-309(4)(b).
74. *Id.*
75. *Id.*
76. Act of Jun. 5, 2013, ch. 415, 2013 Colo. Sess. Laws (2013).
77. COLO. REV. STAT. § 37-92-309 (2012).
78. *Id.*
79. Act of Jun. 5, 2013, ch. 415, sec. 3(c), (6)(b), 2013 Colo. Sess. Laws (2013).
80. *Compare* COLO. REV. STAT. § 37-92-309(3)(c) (2012), *with* COLO. REV. STAT. § 37-92-309(3)(c) (2013).
81. COLO. REV. STAT. § 37-92-309(6)(b) (2013).
82. *See* COLO. REV. STAT. §§ 37-92-309(6)(c)-(g) (2013); *see also* COLO. REV. STAT. § 37-92-309(6)(a)(I) (2013) (establishing that all of the "substantive and procedural requirements" of an initial IWSA application still apply to renewal applications).
83. COLO. REV. STAT. § 37-92-309(6)(c)(I).

the manner set for in [Colorado Revised Statutes] §§ 37-92-302(3)(a) and (3)(b) . . . ."[84] Colorado Revised Statutes §§ 37-92,302(3)(a) and (b), known as the resume notice provisions, are the same notice provisions through which the water courts exercise their exclusive jurisdiction over *in rem* water proceedings.[85] The statute makes clear that the water clerk has the authority to publish the resume notice, "notwithstanding the fact that the applications were filed with the state engineer."[86] Applicants still file renewal applications with the SEO, and must now provide the SEO's office with proof of the resume's submission to the water clerk.[87]

The amended provisions specifically require renewal applicants to comply with the pre-amendment notice requirements previously discussed in this article.[88]

The deadline for providing comments on renewals is approximately eighty-five days longer than the deadline for providing comments on an initial application.[89] As a result of utilizing resume notice, the statute now provides: "[o]wners of water rights have until the last day of the fourth month following the month in which the resume was submitted to the water clerk to file comments . . . ."[90] While an in-depth discussion of resume notice procedures is not relevant here, this format closely parallels the water court's existing resume notice procedures pursuant to Colorado Revised Statutes § 37-92-302(3).[91]

C. ADDITIONAL SEO CRITERIA FOR REVIEW

1. No Renewal IWSAs May Export Transmountain Water

The amendment prohibits the SEO from approving any renewal application that would seek to "transfer or facilitate the transfer of water across the continental divide by direct diversion, exchange, or otherwise."[92] Colorado practitioners commonly refer to transfers across the Continental Divide as "transmountain diversions."[93]

2. No Reliance Upon Multiple IWSAs as a Source of Primary Water Supply

The SEO may not approve any renewal application that would allow a "borrowing water right user to rely on the exercise of multiple interruptible water supply agreements as its primary source of supply."[94] In other words, water users cannot obtain and operate multiple IWSAs as their "primary" water supply, as opposed to obtaining a source of long-term water supply.

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84. *Id.; see also* COLO. REV. STAT. §§ 37-92-302(3)(a)-(b) (2012).

85. §§ 37-92-302(3)(a)-(b); *see also* S. Ute Indian Tribe v. King Consol. Ditch Co., 250 P.3d 1226, 1241-43 (Colo. 2011) (Rice, J., dissenting) (discussing the court's interpretation of resume notice procedures).

86. COLO. REV. STAT. § 37-92-309(6)(c)(I) (2013).

87. § 37-92-309(6)(c)(II).

88. §§ 37-92-309(3)(a), 37-92-309(6)(c)(III).

89. *Compare* § 37-92-309(3)(a), *with* § 37-92-309(6)(d).

90. § 37-92-309(6)(d).

91. *See* COLO. REV. STAT. §§ 37-92-302(3)(a)-(b) (2012).

92. § 37-92-309(6)(e).

93. *See* City of Florence v. Bd. of Waterworks of Pueblo, 793 P.2d 148, 153 (Colo. 1990).

94. § 37-92-309(6)(f)(I).

3. Renewal Terms and Conditions No Less Restrictive than Previously Imposed Terms and Conditions

The SEO cannot approve any renewal application that includes terms and conditions less restrictive than the terms and conditions of a previously authorized IWSA.[95] This provision assures water users who have commented on a previous IWSA application that a renewal will, at the very least, include all of the previously imposed terms and conditions. Thus, past opposers of an IWSA application satisfied by the prior terms and conditions may decide not to participate in renewal applications.

4. No Renewal of IWSA in Which the Loaned Water Rights are Already Included Under a Separate IWSA, or Where the Loaned Water Rights Have Already Been Included in Two Prior IWSAs

The SEO cannot approve a renewal IWSA that includes a water right already approved for temporary use under a separate, unexpired IWSA.[96] Similarly, the SEO cannot approve a renewal IWSA, regardless of the applicant, that includes a water right approved for temporary use in two prior IWSA renewals.[97] Taken together, these provisions address concerns that applicants may try to use the renewal process to "stack" IWSAs, so that a water right could be put to temporarily changed purposes more than three times in a ten-year period (e.g., if a water right was exercised for temporary use in years one through three under "IWSA 1," then exercised in years four through six under "IWSA 2"). Colorado Revised Statutes section 37-92-309(6)(f)(III) protects against the lessor "stacking" his loaned water among several users, while Colorado Revised Statutes section 37-92-309(6)(f)(IV) protects against the borrowing water user "stacking" any given water right.

To avoid a situation where the SEO must deny a renewal of an IWSA where an applicant files a renewal application before the prior IWSA has expired, Colorado Revised Statutes section 309(6)(f)(IV) permits the SEO to grant a renewal that takes effect after the expiration of the prior IWSA term.[98] Accordingly, an applicant may plan ahead and begin seeking a renewal of an IWSA prior to the expiration of the currently operating IWSA, so long as the ten-year terms of the two IWSAs do not overlap.

D. APPEAL OF A RENEWAL IWSA

There are no major differences between an appeal of an initial IWSA and an appeal of a renewal IWSA.[99] However, there are a few clarifying provisions: a provision regarding court filing fees;[100] a clarification that the judge need only expedite the renewal appeal "upon the request" of a party;[101] and clarification that the SEO's approval or disapproval of the IWSA renewal constitutes final

95. § 37-92-309(6)(f)(II).
96. § 37-92-309(6)(f)(III).
97. § 37-92-309(6)(f)(IV).
98. *Id.*
99. *Compare* §§ 37-92-309(6)(g)-(i), *with* § 37-92-309(4)(a).
100. § 37-92-309(6)(i).
101. § 37-92-309(6)(h).

agency action subject to appeal.[102] In all other respects the appeal process of an initial IWSA still controls.[103]

IV. AURORA - HIGH LINE CANAL COMPANY LEASE

Colorado water users have not used IWSAs in any meaningful way since the enactment of the IWSA statute.[104] This section will discuss the temporary lease between the City of Aurora and the High Line Canal Company ("Aurora-High Line Canal Lease"), as that lease is the only agreement of which the authors are aware in Colorado.

Although the lease functioned as an IWSA, the SEO did not approve the Aurora-High Line Canal Lease pursuant to the IWSA statute.[105] On June 30, 2003, Aurora filed its initial application for the lease of water in 2004, including significant technical analyses required with the application.[106] That application sought to operate the lease agreement pursuant to Colorado Revised Statutes Section 37-92-308(5)(a), and not the IWSA statute. That decision was made because the Colorado General Assembly had only passed the IWSA statute a month before, on June 5, 2003.[107] Moreover, the IWSA statute at the time tied the operation of an IWSA to a governor's declaration of "drought or other emergency" in the loaned water right's county of origin or county of use.[108] Therefore, between the timing of the passage of the IWSA statute and the uncertainty of whether the governor would formally declare a drought under which the IWSA could operate, Aurora had already decided to file its application under separate statutory authority.[109] Knowing this, it may seem strange to discuss the Aurora-High Line Canal Lease in conjunction with the IWSA statute. But in practical effect, the lease agreements operated similarly to the exercise of an IWSA and the review of the application followed a substantially similar process to that described in the IWSA statute.

By way of background information, Aurora is a large municipality (Colorado's third largest city) located in the South Platte River Basin, just east of Denver, Colorado.[110] As of 2012, Aurora's utilities department, known as Aurora Water, serves a population of about 340,000.[111] While its service area supplies Aurora residents, its water collection system extends far across the state. Approximately fifty percent of Aurora's water supply derives from the South Platte

102. § 37-92-309(6)(g).

103. § 37-92-309(4)(a).

104. *See* Aurora Application, Water Year 2004, *supra* note 22, at 2; SEO Approval, Water Year 2004, *supra* note 22; ACWWA, ECCV &United IWSA Applications, *supra* note 22; COLO. WATER CONSERVATION BOARD, *supra* note 22, at 12 tbl.2.

105. SEO Approval, Water Year 2004, *supra* note 22.

106. *See* Aurora Application, Water Year 2004, *supra* note 22; Letter from Ross Bethel, LLC, Prof'l Eng'r, to John Dingess, Duncan, Ostrander & Dingess, P.C. (June 30, 2003) (on file with *Water Law Review*) (attachment to Aurora Application, Water Year 2004) [hereinafter "Bethel Engineering Report, Water Year 2004"].

107. Act of Jun. 5, 2003, ch. 363, 2003 Colo. Sess. Laws (2003).

108. *Id.*

109. *See* Aurora Application, Water Year 2004, *supra* note 22.

110. *City of Aurora Facts*, DATA & DEMOGRAPHICS, https://www.auroragov.org/CityHall/AboutAurora/Demographics/index.htm (last visited Feb. 23, 2014).

111. *State and County Quick Facts: Aurora (city), Colorado*, UNITED STATES CENSUS BUREAU, http://quickfacts.census.gov/qfd/states/08/0804000.html (last visited Feb. 23, 2014).

River Basin, and the rest of its water comes, nearly equally, from the Colorado River Basin and the Arkansas River Basin.[112] In order to get that water to its service area, Aurora has an extensive water supply infrastructure. Aurora has several storage accounts in reservoirs located in the headwaters of the Arkansas River basin, near Leadville, Colorado.[113] Two types of sources fill the storage reservoirs: (I) several transmountain diversions exporting water out of the Colorado River basin and into these reservoirs, and (II) Arkansas River water rights directly stored or exchanged to these reservoirs.[114] The reservoir system then releases water into the Otero pipeline, a facility Aurora and the City of Colorado Springs jointly own.[115] Aurora pumps its water from the Arkansas River Basin into the headwaters of the South Platte River Basin, and then delivers its water into Spinney Mountain Reservoir.[116] Aurora's municipal intake connects to diversion structures located on the mainstem of the South Platte River, through which Aurora eventually diverts this water into its municipal system.[117]

A. 2002 DROUGHT

Understanding the Aurora-High Line Canal Lease requires some background history. In 2002, an exceptionally severe drought struck Colorado.[118] The drought was so severe that Colorado Governor Bill Owens proclaimed it to be "perhaps the worst drought in 350 years."[119] The winter of 2001 to 2002 was "abnormally warm and dry," leaving the May snowpack in the South Platte Basin at only twenty-three percent of normal, and twenty-eight percent of normal in the Upper Colorado Basin.[120] For Aurora, this resulted in very low raw water yields throughout the summer of 2002. Aurora received forty-four percent of normal raw water yields in May 2002, twenty-seven percent of normal raw water yields in June, and fifteen percent of normal raw water yields in July.[121] By July 2002, the year-to-date raw water yield was only thirty-five percent of the

112. Memorandum from Joe Stibrich, Deputy Director of Water Resources, Projected Demands and Estimated Firm Yield of Aurora's Water Supply System 2 (May 5, 2010) (on file with *Water Law Review*).

113. *See Aurora Water Basin Supply Map*, AURORA WATER, https://www.auroragov.org/cs/groups/public/documents/document/002339.pdf (last visited Feb. 23, 2014).

114. *Id.*

115. *See* AURORA WATER, WATER SUPPLY FACT BOOK 18 (2010-2011), *available at* https://www.auroragov.org/cs/groups/public/documents/document/002337.pdf.

116. *Fact Sheet - Spinney Mountain Reservoir*, AURORA WATER, https://www.auroragov.org/cs/groups/public/documents/document/002395.pdf (last visited Feb. 23, 2014).

117. *Id.*

118. JOHN HENZ ET AL., COLO. WATER CONSERVATION BD., DROUGHT & WATER SUPPLY ASSESSMENT, CH. 1: HISTORICAL PERSPECTIVES ON COLORADO DROUGHT 6 (2004), *available at* http://cwcb.state.co.us/technical-resources/colorado-drought-water-supply-assessment/Pages/main.aspx.

119. Press Release, Governor Bill Owens, State of the State Message 2003 (Jan. 16, 2003), http://www.state.co.us/owenspress/2003stateofstate.htm.

120. Douglas Kenney et al., *Use and Effectiveness of Municipal Water Restrictions During Drought in Colorado*, 40 J. OF THE AM. WATER RES. ASS'N. 77, 78-79 (2004).

121. UTILITIES DEPARTMENT MONTHLY REPORT, MAY 2002, WATER RES. DIV. (Aurora Water, May 2002) (on file with *Water Law Review*); UTILITIES DEPARTMENT MONTHLY REPORT, JUNE 2002, WATER RES. DIV. (Aurora Water, June 2002) (on file with *Water Law Review*); UTILITIES DEPARTMENT MONTHLY REPORT, JULY 2002, WATER RES. DIV. (Aurora Water, July 2002) (on file with *Water Law Review*).

expected year-to-date average.[122]

Moreover, like most Colorado front-range municipalities, Aurora relies heavily on storage reserves. Thus, the 2002 drought created concern not just about the availability of water for use in 2002, but also the availability of water in future years. If the drought significantly depleted storage reserves in 2002, concerns would persist well into 2003, and could subject Aurora to longer-term water supply issues. In May 2002, Aurora's total storage reserve was about twenty-seven percent lower than the storage reserve at the same time in 2001, and about forty-one percent lower than the storage reserve at the same time in 2000.[123] Both 2000 and 2001 were below-average water years as well.[124] By July 2002, Aurora's storage had dipped to about 70,000 acre-feet, or less than sixty percent of the prior year's July storage, and by that time it had become clear that there would be no other appreciable supply of water for the rest of the year.[125]

While 70,000 acre-feet of water may seem like a lot, Aurora's planning current criteria recommends that storage water not drop below 40,000 acre-feet.[126] This amount of water is about twenty-five percent of Aurora's storage capacity and roughly equivalent to Aurora's yearly indoor water demands.[127] Essentially, 40,000 acre-feet represents the minimum amount of water Aurora needed at that time to support its population's indoor domestic needs (i.e. toilets, sinks, and washing machines). Accordingly, by the middle of 2002, Aurora feared that another year of drought could impose severe water management plans.[128]

B. LEASES WITH THE HIGH LINE CANAL COMPANY

Aurora began exploring the possibility of obtaining short-term water supplies to fill their reservoirs as insurance against further drought conditions. Such plans were well advised, as the drought continued throughout the 2003 water year.[129] Aurora explored a lease from the Rocky Ford area High Line Canal Company as one option to supplement its water supply.

The High Line Canal Company operates in the Arkansas River Basin, with its canal headgate sitting on the mainstem of the Arkansas River about thirty-five miles downstream of Pueblo, Colorado.[130] The canal roughly parallels the Arkansas River, and is about ninety miles long. The maximum flow rate permitted, under all of the High Line Canal Company's priorities, is about 501 cfs.[131] The appropriation dates of these rights range between 1861 and 1890.[132]

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122. UTILITIES DEPARTMENT MONTHLY REPORT, July 2002, *supra* note 121.

123. UTILITIES DEPARTMENT MONTHLY REPORT, MAY 2002, *supra* note 121.

124. BARRY CRESS ET AL., COLO. WATER CONSERVATION BD., DROUGHT & WATER SUPPLY ASSESSMENT, CH. 3: IMPACT OF THE 2000-2003 DROUGHT AND STATE RESPONSE 4-6 (2004), *available at* http://cwcb.state.co.us/technical-resources/colorado-drought-water-supply-assessment/Pages/main.aspx.

125. UTILITIES DEPARTMENT MONTHLY REPORT, MAY 2002, *supra* note 121.

126. Stibrich, *supra* note 112, at 2.

127. *Id.*

128. *See id.* at 1-2.

129. *See id.* at 2.

130. Bethel Engineering Report, Water Year 2004, *supra* note 106.

131. *Id.*

132. *Id.*

Because of the over-appropriation of the Arkansas River for well over a hundred years, an 1880s priority is often a junior right, and a late 1880s right may only receive water during peak runoff.[133] The High Line Canal Company consists of 2,250 shares and has historically irrigated around 22,500 acres (i.e., about ten acres per share).[134] Recent cropping patterns indicated that the majority of crops grown were alfalfa (about forty-one percent), corn (about twenty-eight percent), grass (about fourteen percent), and wheat/oats (about nine percent).[135]

From Aurora's perspective, a lease with the High Line Canal Company was appealing because the necessary infrastructure to deliver water into its system already existed. Moreover, because Aurora had obtained separate permanent transfers of water from another nearby canal company, it had past experience in operating a transfer of water from the Rocky Ford area to the Aurora service area.[136] Thus, a water transfer from the High Line Canal Company was technically feasible.

As early as April 2003, Aurora had begun negotiations in earnest with the High Line Canal and its individual shareholders for a temporary lease of water. Over the course of three months, the parties worked out a uniform lease they would circulate and offer to all High Line Canal shareholders.[137]

1. Shares of the High Line Canal Company Subject to the Lease

Each shareholder that desired to lease shares to Aurora would designate, on a uniform lease agreement, a number of shares that they were willing to lease, as well as the location of the land those shares historically irrigated.[138] Each share of High Line Canal Company generally produced enough water to irrigate ten acres of land.[139] Under the terms of the lease agreement, each shareholder was responsible for obtaining the High Line Canal Company's approval of the lease, pursuant to the company's bylaws.[140]

2. Term of the Lease

The initial term of these leases included the remainder of the 2003 water year, the entire 2004 water year, and the 2005 water year up through November 14, 2005.[141] However, either party could terminate the lease for the 2005 water year if they gave proper notice.[142] In the event of SEO administrative denial, or

133. Transcript of Proceedings Volume 1 at 139, Concerning the Application of Busk-Ivanhoe, Inc., No. 09CW142 (Colo. Dist. Ct., Water Div. 2 2013) (on file with *Water Law Review*).

134. Bethel Engineering Report, Water Year 2004, *supra* note 106.

135. *Id.*

136. *See* Completion Order at 3, City of Aurora, No. 83CW18 (Colo. Dist. Court, Water Div. 2 Mar. 23, 2001) (application for change of water rights).

137. *See* Agreement for Lease of Water Produced by High Line Canal Co. Stock 1 (2003) (on file with *Water Law Review*).

138. *Id.* at 1, 3.

139. *Id.* at 3.

140. *Id.* at 6.

141. *Id.* at 2.

142. *Id.*

if High Line Canal Company could not physically deliver water to Aurora, Aurora could terminate the lease.[143]

3. Payments to Leasing Shareholders

The lease mandated a required per-share annual lease payment of $5,280 and included a minimal non-refundable portion paid to leasing shareholders regardless of whether Aurora exercised the lease or not.[144] The non-refundable payment was due at the beginning of the water year.[145] Aurora withheld $500 of the annual lease payment, a little less than ten percent, contingent upon the leasing shareholders implementing weed control and land stabilization measures.[146] Aurora also agreed to pay an annual fee of $1,000 when the land was out of production.[147] This payment served to offset any reductions in agricultural yields resulting from the temporary non-irrigation of the land.[148] This annual fee was due at the beginning of the following water year.[149]

4. Dry-up, Weed Management, and Land Stabilization Requirements on Historically Irrigated Lands

In exchange for the lease of water, shareholders agreed to the non-irrigation and the non-production of crops (i.e. "temporary dry-up") on their historically irrigated land.[150] The parties agreed that each leased share should result in approximately ten acres of dry-up, subject to actual usage.[151] As a result of the temporary dry-up, the parties also agreed to certain weed control and land stabilization measures.[152] The leasing shareholder was responsible for undertaking such measures.[153] As previously mentioned, however, Aurora withheld a portion of the annual lease payment to ensure that these measures were followed. Moreover, pursuant to the terms of the lease, shareholders granted Aurora permission to enter the subject temporary dry-up lands and undertake any weed control and land stabilization measures as required, and Aurora could defray the associated costs through the withholding.[154] Notwithstanding the fact that such lands were actually dried up, the parties agreed that they expected such lands to be assessed as irrigated land, and that the leasing shareholders were responsible for any taxes on the property.[155]

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143. *Id.*
144. *Id.* at 3-4.
145. *Id.* at 4.
146. *Id.*
147. *Id.*
148. *Id.* at *5.*
149. *Id.*
150. *Id.* at 6.
151. *Id.*
152. *Id.*
153. *Id.*
154. *Id.* at 6-7.
155. *Id.* at 8.

5. Duty to Promptly Seek Administrative Approval

Aurora agreed to promptly investigate and request any administrative approvals required to temporarily transfer the leased shares to Aurora's service area.[156] The agreements stipulated that the terms of the lease would become effective upon Aurora successfully obtaining any such administrative approval.[157]

6. Engineering Analysis, and Terms and Conditions to Protect Non-Leasing Shareholders

In a separate agreement with the High Line Canal Company (as opposed to the agreements developed with individual shareholders) Aurora agreed to be responsible for developing the required engineering analysis, which it would provide to the High Line Canal Company for review.[158] The parties specifically agreed to certain general objectives of such an engineering analysis, including: determining recent use of the High Line Canal water rights as a basis for the temporary change, determining the seepage and evaporation losses associated with such use, evaluating any effects of the leases upon the non-leasing shareholders, and providing recommended terms and conditions necessary to protect such non-leasing shareholders.[159] Under the agreement, Aurora also provided funds to the High Line Canal to defray potential costs the High Line Canal incurred in its review of the leases, the engineering analysis, and the application for administrative approval.[160] Finally, the agreement between Aurora, the High Line Canal, and the individual leases provided that High Line Canal could require terms and conditions to prevent injury to non-leasing shareholders.[161]

C. ADMINISTRATIVE REVIEW AND GRANTED APPROVAL

By July 2003, Aurora had submitted an application to approve the temporary transfer for the 2004 irrigation season to the State Engineer's Office.[162] After Aurora provided notice, nine different commenters submitted eight comment letters.[163] Aurora provided follow-up responses and it appears the SEO considered both the comments and the responses in its decision to impose certain terms and conditions in its approval of the lease.

On January 30, 2004, the SEO granted approval of the temporary change pursuant to the substitute water supply plan statute: Colorado Revised Statutes § 37-92-308(5).[164] The plan approved the temporary transfer of up to 840 shares of the High Line Canal Company to Aurora, subject to the terms and conditions

156. *Id.*
157. *Id.*
158. Agreement between the City of Aurora, Colorado, Acting by and through its Utility Enterprise, and The High Line Canal Company Relative to the Agreement for Lease of Company Stock (Aug. 26, 2003) (on file with *Water Law Review*) [hereinafter "Aurora - High Line Canal Agreement"].
159. *Id.*
160. *Id.*
161. *Id.*
162. Aurora Application, Water Year 2004, *supra* note 22.
163. SEO Approval, Water Year 2004, *supra* note 22.
164. *Id.*

in the approval.[165] The plan required that any leased shares must result in dry-up of 9.82 acres per share (i.e. the measured average value of irrigated acreage per share under the High Line Canal).[166] If Aurora leased 840 shares, it would result in temporary dry up of at least 8,251 acres.[167]

The approval then established how much water the High Line Canal Company could temporarily transfer to Aurora. Transfers could occur during the historical irrigation season for the High Line Canal, and included monthly maximum consumptive use credits.[168] These credits were available for Aurora to transfer to its temporarily approved uses pursuant to the SEO approved plan. These maximum consumptive use credits amounted to roughly forty percent of the water historically available at the High Line Canal headgate, which the leased shares would have used.[169] In addition, the SEO applied a maximum annual consumptive use credit somewhat lower than the total of the monthly consumptive use credits.[170] Aurora was able to divert or exchange this consumptive use portion, as determined on a daily basis, into Pueblo Reservoir, Twin Lakes Reservoir, or Turquoise Reservoir.[171] Operation of such diversions or exchanges was subject to the terms and conditions of the approved plan.

The approval required that a portion of the leased shares continue to be diverted into the High Line Canal.[172] This amount represented the ditch losses the leased shares historically realized when conveying the water to the historical places of use. These ditch losses amounted to roughly thirty-six percent of the water historically available at the High Line Canal headgate, which the leased shares would have used.[173] In order to replicate the historic ditch losses, this amount continued to be diverted through the High Line Canal in similar fashion to its historic movement through the system, acting as carriage water to the unleased shares.[174]

The SEO determined that return flows accounted for the remaining roughly twenty-four percent of the water historically available at the High Line Canal headgate, which the leased shares originally used.[175] The SEO determined that ninety percent of these return flows were lagged ground water returns, and ten percent were tail water surface returns.[176] In order to replicate historic return flow patterns, several mechanisms were used to deliver return flows back to the stream, including direct releases to the stream, ground water recharge through High Line Canal Company ditches, and storage of return flows for later direct stream releases or use as recharge credits.[177] All of these

165. *Id.*
166. *Id.* at 2. .
167. *Id.*
168. SEO Approval, Water Year 2004, *supra* note 22.
169. *Id* at 2.
170. *Id.*
171. *Id.* at 6.
172. *Id.*at 4.
173. *See id.*
174. *See id.*
175. *See id.*
176. *Id.* at 4.
177. *See id.* at 4-5.

return flows were measured as generated on a daily basis.[178]

D. NET RESULT OF THE 2004 TEMPORARY TRANSFER

Aurora successfully leased 833.3 shares, or about thirty-seven percent, of the High Line Canal Company.[179] Aurora paid about $5.3 million to the High Line Canal Company and its shareholders.[180] Aurora spent additional monies to utilize Pueblo Reservoir.[181] As a result, the Superintendent of the High Line Canal Company, Dan Henrichs, was quoted as saying: "The lease was an overwhelming success. It was a financial help to shareholders. It added value to our water without harming ditch operations."[182] A board member of the High Line Canal was quoted as saying: "There have been a few guys saying that without this, they wouldn't be farming now. We had a meeting the other day, talking about the good and bad of the lease. You didn't hear much bad. It's worked out well for both of us."[183]

The authors of this article view the lease as a success, but note the success was tempered by the low return of water from the lease. Because the 2004 lease occurred during a low water year, Aurora only realized about 7,600 acre-feet from the lease.[184] Compared with the approximately 12,000 acre-feet that Aurora expected to obtain from the lease during an "average" water year,[185] the 7,600 acre-feet was somewhat of a disappointment. However, as a result of the lease, Aurora's storage reserves in January of 2005 were slightly over half full and within ten percent of what Aurora expected.[186] Accordingly, the lease was successful because it allowed Aurora to more quickly recover from the deleterious effects of the 2002 through 2004 water years. But due to the limited amount of water obtained from that lease, it is difficult to characterize the lease as an "overwhelming" success for the City of Aurora.

E. 2005 TEMPORARY TRANSFER

In late January 2005, Aurora filed an application for a renewal of the High Line Canal leases.[187] First, Aurora negotiated an assignment lease with Colorado Springs Utilities ("CS-U"), the municipal water supplier for the City of Colorado Springs, whereby CS-U would receive fifty percent of transferable yield of the

178. *Id.* at 3.

179. Chris Woodka, *Farmers Took Aurora Payments to the Bank*, PUEBLO CHIEFTAIN, Jan. 16, 2005 (on file with *Water Law Review*).

180. *See id.* at 6.

181. *Id.*

182. *Id.* at 3.

183. *Id.* at 6.

184. *Id.*

185. Letter from Austin Hamre, Esq., Duncan, Ostrander & Dingess, P.C., to Keith Vander Horst, Water Res. Eng'r, Office of the State Eng'r 2 (Mar. 7, 2005) (on file with *Water Law Review*) [hereinafter "Aurora Application, Water Year 2005"].

186. *See* Woodka, *supra* note 179.

187. Letter from Austin Hamre, Esq., Duncan, Ostrander & Dingess P.C. to Hal D. Simpson, State Eng'r, Colo. Office of the State Eng'r, Dep't of Natural Res., (Jan. 24, 2005) (on file with *Water Law Review*).

leased shares.[188] The sublease to CS-U made sense in that CS-U's existing infrastructure easily allowed deliveries of the subleased water to CS-U with minimal changes to the 2005 SWPS plan. Although Colorado Springs shares the same basin as the High Line Canal, the parties elected to continue treating all leased shares, including those received by CS-U, as fully consumable water supplies.[189] Thus, the amount of return flow obligations remained essentially the same.

Second, in addition to the previously utilized structures, the plan requested approval to use certain nearby downstream canal and reservoir systems (Holbrook Canal System, including Holbrook and Dye Reservoirs, and the Colorado Canal System, including Lakes Meredith and Henry).[190] The reservoir components of this plan would operate similarly to the role of upstream Pueblo Reservoir; it would store consumptive use credits for later exchange up into the Aurora and CS-U systems, and it would store return flows for release into the stream system later in the year.[191]

On March 15, 2005, the SEO approved the plan.[192] The SEO received two comment letters.[193] The SEO granted the 2005 approval on nearly identical terms and conditions as the 2004 approval.[194] The 2005 plan approved the assignment of half the leased water to CS-U, and approved the use of the additional structures subject to operational terms and conditions.[195] The only other change worth noting was the expanded language in the condition pertaining to temporary dry-up, which further restricted approved methods of dry-up.[196]

While 2005 was another below average water year, it was not as severe as 2004.[197] As of March 2005, Aurora was at fifty-three percent of its system-wide storage reserves, or under 84,000 acre-feet of total system-wide storage.[198] Therefore, the lease of water again made sense for Aurora. Because 2005 storage reserves looked better for Aurora than in the prior two years, Aurora assigned some of its lease to CS-U. As a result, Aurora again leased 833 shares in 2005 under the same payment terms.[199] Those shares produced a little over 10,000 acre-feet of transferable yield, which Aurora and CS-U split.[200]

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188. Memorandum from Ross Bethel, LLC, Prof'l Eng'r, to Austin Hamre, Esq., Duncan, Ostrander & Dingess, P.C. 3 (Jan. 24, 2005) (on file with *Water Law Review*) [hereinafter "Bethel Engineering Report, Water Year 2005"].

189. *Id.* at 8.

190. *Id.* at 2-3.

191. *Id.*

192. Letter from Dick Wolfe, P.E., Ast. State Eng'r, Colo. Office of the State Eng'r, Div of Water Res., Dep't of Natural Res., to John M. Dingess, Duncan, Ostrander & Dingess P.C. (Mar. 15, 2005) (on file with *Water Law Review*) [hereinafter "SEO Approval, Water Year 2005"].

193. *Id.*

194. *Id.*

195. *Id.* at 7-8.

196. *Id.*

197. NATIONAL CLIMATIC DATA CENTER, DEPT. OF COM., CLIMATE OF 2004 IN HISTORICAL PERSPECTIVE 3 (2005), http://www.ncdc.noaa.gov/oa/climate/research/2004/ann/ann04.html; NATIONAL CLIMATIC DATA CENTER, DEPT. OF COM., CLIMATE OF 2005 IN HISTORICAL PERSPECTIVE 2 (2006), http://www.ncdc.noaa.gov/oa/climate/research/2005/ann/ann05.html.

198. Aurora Application, Water Year 2005, *supra* note 185.

199. SEO Approval, Water Year 2005, *supra* note 192.

200. *Id.* at 4-5.

V. LESSONS LEARNED AND LIMITATIONS TO THE USE OF IWSAS

A. HISTORIC CONSUMPTIVE USE ANALYSIS

It will come as no surprise to water law practitioners that a primary concern in obtaining a successful IWSA is the Historic Consumptive Use ("HCU") analysis. An IWSA may only be a temporary transfer of water, but the transferable portion of the right remains that portion historically consumed.[201]

Issues pertaining to HCU analyses are common under the prior appropriation doctrine. Accurately quantifying the portion of the water right that may be changed, while ensuring that the water right is not expanded is an inherently contentious exercise. But, in many respects, there is little difference between an HCU analysis preformed for an IWSA application and one preformed in a permanent change application, particularly from the technical standpoint.[202] The major difference is that the SEO must review and approve the application instead of the water court, and the SEO will likely expect modifications to the HCU analysis before it grants approval.[203]

HCU analyses to effectuate temporary leases, however, raise some broader concerns that typically do not exist in the context of permanent changes. To understand these concerns, it is important to understand the purpose and effect of an HCU analysis under existing water law. Colorado water rights are usufructuary, limited to and measured by the historical beneficial use of the water.[204] The amount of water claimed in the original water right decree does not usually represent the actual historical beneficial use of the water, but instead represents the amount claimed by the water user at the time the right was decreed.[205] As a result, Colorado courts require a quantification of the amount of water that the water user historically, beneficially used under the water right, and will limit any change of a water right to that quantity of water which was consumptively used (i.e. HCU).[206] Unfortunately, the originally decreed amounts and the actual use of the water are not always the same.[207] Therefore, water users run the real risk of a reduction in their water right as the result of a quantification.[208]

1. The Potential Permanent Effects of a Temporary Change

Because of the risk of reduction from decreed use to actual use, water users avoid situations that will unnecessarily result in a quantification of their water rights. For agricultural users, a major concern with temporary leases is the requirement to quantify the water right. Although an IWSA seeks only a temporary change, it is difficult to provide assurances that a quantification will not have long-lasting effects on the underlying water right. Although a quantification preformed under an IWSA is not a binding adjudication of the underlying water

201. COLO. REV. STAT. § 37-92-309(3)(b) (2013).
202. Interview with Ross Bethel, LLC, Prof'l Eng'r. (Feb. 2, 2013).
203. *Id.*
204. Concerning Application for Water Rights of Midway Ranches Prop. Owners' Ass'n, Inc. (Midway), 938 P.2d 515, 522 (Colo. 1997).
205. *Id.* at 521.
206. Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson, 990 P.2d 49, 54 (Colo. 1999).
207. *Id.* at 55.
208. *Midway,* 938 P.2d at 522.

right, other water users may utilize that quantification against the owner of the right as evidence in future proceedings. [209]

For example, the High Line Canal Company recently participated in a court trial concerning the change of the Busk-Ivanhoe transmountain water rights, which the High Line Canal Company historically used as a source of supplemental supply in its ditch system.[210] The High Line Canal Company was not the applicant in the proceedings, having sold the Busk-Ivanhoe water rights and replaced them with other sources of water some years before.[211] Nonetheless, the High Line Canal Company participated in the proceedings to ensure that any quantification of the High Line Canal Company's use of the Busk-Ivanhoe water rights would not result in a binding quantification of the High Line Canal's current water use.[212] Significantly, the data and technical assumptions generated in the creation of the HCU analyses used in the Aurora-High Line Canal Lease application were used (albeit in a highly modified fashion) by certain opposers in the Busk-Ivanhoe change case as a basis for their HCU analysis.[213] The results of a water right's quantification have significant impacts even when performed outside the context of a judicial adjudication of those water rights.

2. Controlling How and When an HCU Analysis is Pursued

The major lesson learned from the High Line Canal Company's position in the Busk-Ivanhoe trial was that the High Line Canal wanted control of how and when its water rights would be quantified.[214] That sentiment is unsurprising, but not always attainable. For many agricultural water users, high expense dissuades them from hiring a water engineer to determine the likely outcome of a ditch-wide HCU.[215] In addition, it is doubtful that agricultural water users would be comfortable in having potential third-party lessors conduct an HCU analysis on their water rights without their control or input. That discomfort may have increased substantially due to the recent outcome of the *Burlington* case.[216] After the *Burlington* decision, it became clear that a portion of shareholders of a mutual ditch company participating in a change of water rights could dramatically affect the rights of every shareholder and water right on the ditch.[217]

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209. *See* COLO. REV. STAT. §§ 37-92-309(3)(b), (4)(a) (2013).

210. *See* Applicant's Trial Brief at 9, 22, Concerning the Application of Busk -Ivanhoe, Inc., No. 09CW142 (Colo. Dist. Ct., Water Div. 2 July 2, 2013); *see also* Trial Brief of High Line Canal Co. at 1, Concerning the Application of Busk -Ivanhoe, Inc., No. 09CW142 (Colo. Dist. Ct., Water Div. 2 July 2, 2013).

211. *See* Applicant's Trial Brief, *supra* note 210, at 1, 3; *see also* Trial Brief of High Line Canal Co., *supra* note 210, at 1-2.

212. *See* Closing Brief of Applicant at 9, 22, Concerning the Application of Busk -Ivanhoe, Inc., No. 09CW142 (Colo. Dist. Ct., Water Div. 2 July 2, 2013).

213. Transcript of Testimony of Mike Sayler at 721, Concerning the Application of Busk -Ivanhoe, Inc., No. 09CW142 (Colo. Dist. Ct., Water Div. 2 July 26, 2013).

214. Trial Brief of High Line Canal Co., *supra* note 210, at 1-2; Closing Brief of High Line Canal Co. at 2, Concerning the Application of Busk -Ivanhoe, Inc., No. 09CW142 (Colo. Dist. Ct., Water Div. 2 Aug. 29, 2013).

215. *See generally* COLO. CONSERVATION BD., *supra* note 13, at 7-19.

216. Burlington Ditch Reservoir & Land Co. v. Metro. Wastewater Reclamation Dist., 256 P.3d 645, 674 (Colo. 2011), *as modified on denial of reh'g* (June 20, 2011).

217. *Id.*

The issue of how and when HCU analyses are pursued is similarly concerning to the potential lessors of water rights. There is little interest among municipal water suppliers in paying for a quantification (or other costs associated with temporary changes) if it is unclear how much water it will supply.[218] Similarly, even when the lease is substantially certain to provide large amounts of water, municipal suppliers are unlikely to be interested in paying for a quantification or change of water rights if they lack authority over the process.[219]

In short, agricultural lessors have strong interests in controlling a quantification of their water rights, but have concerns with their ability to pay for such quantification on their own. Municipal lessees have the potential resources to pay for a quantification, but only if the potential lease is sufficiently large to warrant such costs and the municipal lessors have sufficient authority or input over that process.

3. Potential Solutions to HCU Concerns

Potential agricultural lessors and potential municipal lessees may agree on how to pursue an HCU analyses in many different ways. This section highlights the one utilized in the Aurora-High Line Canal IWSA, as well as discussing three other proposals.

a. Negotiated Agreement

In the Aurora-High Line Canal IWSA, the parties entered into a negotiated agreement that specifically addressed many of the issues associated with an HCU analyses. Under that agreement, Aurora commissioned and was responsible for providing an engineering report to the High Line Canal Company concerning quantification of the High Line Canal water rights.[220] The agreement specified several requirements, which were concerns of the High Line Canal Company, such as proposed terms and conditions that would protect non-leasing shareholders.[221] In addition, Aurora made payments to the High Line Canal Company for engineering purposes, allowing High Line Canal Company to perform an independent review of the engineering report.[222] In return, High Line Canal Company committed to promptly review the engineering report and work in good faith with Aurora and its shareholders to approve any temporary leases of shares.[223] Aurora was also able to freely terminate the agreement, along with any resulting payments that had not yet come due, if it decided the leases were infeasible.[224] Under the circumstances of this lease, a negotiated agreement provided sufficient assurances for the parties to proceed with an HCU analysis. Based on this experience, it appears that potential lessors and potential lessees are able to contractually resolve potential concerns over an HCU analyses, so long as they have the ability and the interest in doing so.

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218. COLO. CONSERVATION BD., PROJECT COMPLETION REPORT: FLEX MARKET MODEL PROJECT COMPLETION REPORT 5-3 (2013).

219. *Id.*

220. Aurora - High Line Canal Agreement, *supra* note 158, at 3.

221. *See id.*

222. *See id.*

223. *See id.*

224. *See id.*

b. Proposed Ditch Wide HCU Legislation

One recent proposal to the Colorado Interim Water Resources Review Committee[225] was the creation of a "ditch-wide" change statute.[226] The proposed statute would legislatively incentivize agricultural water users to preform ditch-wide[227] HCU analyses on their water rights.[228] The underlying premise of the proposal is that a quantification of water rights is a key impediment to the acceptance of temporary changes of water rights. In addition, agricultural interests will be more likely to risk the ramification of a ditch-wide HCU analysis if there are statutorily guaranteed incentives at the outset.

The authors of this article believe the idea, in principal, has merit. In particular, the authors agree that agricultural water users have historically avoided water transactions requiring ditch-wide HCU analyses. If agricultural users adequately quantify their water rights prior to entering into a temporary change agreement, parties will resolve one of the major hurdles facing that temporary change.

The authors, however, also have concerns with certain types of incentives promoting ditch-wide analyses, and urge careful consideration of any potential incentives. Incentives which effectively force all owners of a water right to participate in a ditch-wide analysis, when either the ditch company or a majority of the shareholder's oppose doing the analysis is not something the State of Colorado should endorse. Nor should Colorado endorse incentives that allow ditch-wide quantifications to enlarge the underlying water right at the expense of other water users. Incentives that do not operate at the expense of other water users surely exist, and very well could result in less angst over the outcome of a potential HCU analysis.

c. Monetary or Technical Support for HCU Analyses

Providing water users with technical or financial support in performing HCU analyses would incentivize HCU analyses in advance of any temporary change. Theoretically, the State of Colorado does not need to tie such assistance to a water court proceeding, although such a proceeding would ensure a greater level of certainty to the outcome.[229]

Since 2007, the Colorado General Assembly has appropriated over

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225. *See* COLO. REV. STAT. § 37-98-102 (2013) (authorizing this interim committee of the Colorado General Assembly, which generally oversees all water resource matters).

226. *See* Water Res. Review Comm., Flex Water Market Presentation (Aug. 21, 2013), http://www.colorado.gov/lcs/WRRC; *see also Staff Summary of Meeting* (Water Res. Comm.) Aug. 21, 2013, at 3, *available at* http://www.leg.state.co.us/CLICS/CLICS2013A/commsumm.nsf/b4a3962433b52fa787256e5f00670a71/3e8f1a8bb6445df287257bd200666d83 (last visited Feb. 20, 2014).

227. By way of explanation, "ditch-wide" quantifications involve the quantification of all rights and water users on a ditch. The alternative, sometimes referred to as "parcel-by-parcel" quantification, involve each individual water right or user on the ditch quantifying their portion of the whole right.

228. *See* Flex Water Market Presentation, *supra* note 226; *see also* Staff Summary of Meeting, *supra* note 226, at 3.

229. *See* Midway, 938 P.2d 515, 525 (Colo. 1997) (discussing Water Court jurisdiction over quantification of water rights, as well as the claim and issue preclusive effects of such rulings).

$3,000,000 for studies incentivizing alternative transfer mechanisms.[230] A cursory review of the grant recipient projects reveals that quantification of water rights and quantification of dry-up are significant aspects of most projects.[231] If the statewide commitment to temporary changes is that significant, perhaps the Colorado General Assembly can continue to make funding available for ditch-wide HCU analyses. Such a program could allow agricultural users to pursue HCU analyses without the need of a buyer or lessor of water to fund those efforts.

d. Standardized HCU Analyses

Implementing standardized HCU analyses is another potential solution for reducing barriers to temporary changes. Theoretically, reducing the number of variables considered in HCU analyses would create more certainty in the outcome. Colorado has only recently attempted to develop a standardized HCU analyses, but only in the context of a temporary lease-fallowing pilot project.[232] It is unclear how well these standardized HCU assumptions will operate, as an application has yet to be granted under that pilot project.[233] Nonetheless, Colorado already has some experience in working with standardized HCU assumptions or parameters developed for purposes other than change cases, most notably the H-I Model in the Arkansas River Basin.[234]

A standardized HCU analysis raises concerns. Such models may value simplicity in the modeled analyses, and assumed uniformity of historic usage, over the necessity of a complex model based upon specific, accurate data. Inaccurate or overly simplified models could result in inaccurate and unfair results for water users. Montana provides just such an example.

Montana's Department of Natural Resources and Conservation ("DNRC"), the regulatory agency governing changes of water rights,[235] recently promulgated rules governing changes of water rights that included a standardized HCU analyses.[236] Under the new rules, an applicant must select values from a table based upon: (I) the nearest department-approved climate station to the place of use; (II) whether irrigation at the place of use was either 'center pivot' or 'non-center pivot' irrigation; and (III) the county-by-county "Management Factors" for the place of use.[237]

By way of example, suppose an applicant owns one hundred acres of flood irrigated ranch in Cascade County, Montana. The applicant might determine under the rules, based on proximity and elevation, that the "Sun River" weather

230. Act of May 31, 2007, Ch. 352, sec. 18, Colo. Sess. Laws 1511, 1517-518; Act of Jun 1, 2009, Ch. 328, sec. 4, Colo. Sess. Laws 1745, 1746.

231. COLO. WATER CONSERVATION BD., *supra* note 22, at 1-2.

232. *See* Act of May 13, 2013, ch. 210, sec. 2, 2013 Colo. Sess. Laws 878; COLO. WATER CONSERVATION BD., CRITERIA AND GUIDELINES FOR FALLOWING -LEASING PILOT PROJECT (2013), http://cwcb.state.co.us/water-management/water-projects-programs/Pages/Fallowing-LeasingPilotProjects.aspx (last visited Feb. 21, 2014).

233. COLO. WATER CONSERVATION BD., *supra* note 232.

234. *See* Kansas v. Colorado, 543 U.S. 86, 99 (2004); Fifth and Final Report Judgment and Decree at 2-5, Kansas v. Colorado, 556 U.S. 98 (2008) (No. 105).

235. *See* MONT. ADMIN. R. 36.12.1902 (2014).

236. *See id.*

237. *See id.*

station is most representative of the place of use.[238] The DNRC calculated the seasonal irrigation requirement for non-center pivot irrigation at this climate station to be 18.10 inches.[239] Under the rules, the historic use Management Factor for Cascade County is 57.3 percent.[240] The rules direct the applicant to multiply the irrigation requirement, Management Factor, and the total number of acres to determine the historic consumptive use volume.[241] In this case, by administrative rule, the presumptive historic consumptive use for the water rights that irrigate this ranch is 86.4 acre-feet. (E.g., [18.10 inches x 57.3% x 100 acres] / 12 inches per foot = approximately 86.4 acre-feet.)

The problem with the rules is DNRC's Management Factors. The purpose of the DNRC's calculated Management Factors is to reduce the maximum evapotranspiration calculations, which are premised upon ideal management of crops and ideal water supply conditions.[242] Such a reduction theoretically results in closer approximations of the actual irrigation water a crop consumes.[243]

However, the method by which the DNRC calculated the Management Factors is suspect at best. The DNRC established the Management Factors by comparing the average irrigated crop production yields (as reported to the USDA by farmers in each county) to a DNRC-calculated maximum irrigated crop production yield.[244] This comparison, expressed as a percentage, represents how closely the average reported irrigated production in a chosen county matches the average expected maximum production. The DNRC calculates a maximum irrigated yield on a hypothetical location for each county that would experience what the DNRC determined to be the 'average' characteristics of that county.[245] Two concerns stem from this analysis. First, it is unclear whether a collection of all the countywide "average" statistics, when put together into one analysis, would be in any way meaningful or representative for the majority of water users in that county. Second, even if such a collection of averages is meaningful, the resulting Management Factors for each county would represent an average historic crop yield for every irrigated property in that county. Thus, compliance with the DNRC Management Factors limits every water right to only that volume of water necessary to produce an "average" irrigated crop yield.

Returning to the hypothetical ranch in Cascade County, assume that the rancher wants to take his current flood irrigation out of production and move his water rights to a nearby field where he will use gated pipe. Under the new rules, there is a separate Management Factor for new irrigation use, and in Cascade County that factor is 78.8 percent.[246] Accordingly, pursuant to the standardized HCU, the rancher will be limited to seventy-three acres of irrigation in the new location as opposed to the one hundred acres he was irrigating before.

238. MONTANA DEPT. OF NATURAL RES. AND CONSERVATION, *DNRC* CONSUMPTIVE USE METHODOLOGY 1,8 (2010).
239. *Id.*
240. *Id.* at 18.
241. *Id.* at 3.
242. *Id.* at 2-3.
243. *Id.* at 2.
244. *Id.* at 2-3.
245. *Id.* at 3.
246. MONT. ADMIN. R. 36.12.1902 (2014).

(E.g., [86.4 acre-feet x 12 inches per foot] / [18.10 inches x 78.8%] = approximately 73 acres.) This outcome is based *solely* on the DNRC premise that future irrigation *must* produce greater yields than those historically produced.

Montana's HCU rules are problematic because the regulations' imposed uniformity is not a means for accurately determining HCU of any given water right. Instead, the regulations transform every water right into a uniform "average" water right. Thus, Montana's HCU rules seem to operate in blissful ignorance of the fact that the entire prior appropriation doctrine relies upon the notion that in times of water scarcity some users will be fully satisfied and others will not.[247] Colorado should proceed more thoughtfully than Montana if it decides to standardize its HCU analyses.

B. MUNICIPAL PROVIDERS HAVE DIFFERENT WATER DEMANDS THAN AGRICULTURAL USERS

Temporary transfers are not necessarily well-designed for municipal interests, and alternative transfer mechanisms are perceived as a method of aiding agricultural interests.[248] Yet, for an alternative transfer mechanism to work, municipal and industrial water users must receive at least as much benefit under temporary transfers as they would obtain from permanent transfers. These kinds of water transfers will depend on willing sellers *and* willing buyers. Thus, establishing a legal framework for temporary changes that grossly favors either buyers or sellers will result in a lack of market participants for temporary transfers.

The authors perceive that some parties would seek to establish a temporary change market that favors agricultural users under the theory that municipal and industrial users will eventually agree to unfavorable lease terms.[249] By way of example, the City of Aurora agreed to lease pricing for 10,000 acre-feet of water from the Arkansas Valley Super Ditch.[250] The Super Ditch, however, later rejected the agreement and demanded different key terms to the lease, including

247. Kobobel v. State Dep't of Natural Res., 249 P.3d 1127, 1134-35 (Colo. 2011) ("Given the demand for water, there can never be a guarantee that there will be enough water to satisfy all claims to this scarce resource. Accordingly, not only is one's property right in water uncertain in nature, but its primary value is in its relative priority. Thus, adjudication and administration are essential to protection of water rights.") (internal citations and quotations omitted); *see also* Concerning Adjudication of Existing Water Rights to the use of all Water (Basin 41I), 55 P.3d 396, 399 (Mont. 2002) ("[t]he true test of appropriation of water is the successful application thereof to the beneficial use designed, and the method of diverting or carrying the same, or making such application, is immaterial" (quoting Thomas v. Guiraud, 6 Colo. 530, 533 (1883))); Atchison v. Peterson, 1 Mont 561, 569 (Mont. 1892).

248. COLO. WATER CONSERVATION BD., COLORADO'S WATER SUPPLY FUTURE, STATEWIDE WATER SUPPLY INITIATIVE – PHASE 2 3-13 (2007).

249. *See* Jay Winner & Mary Lou Smith, Colorado's "Super Ditch": Can Farmers Cooperate to Make Lemonade Out of Lemons, Address Before the United States Committee on Irrigation and Drainage (May 28-31, 2008), *available at* http://digitool.library.colostate.edu/R/?func=dbin-jump-full&object_id=117054&local_base=GEN01 ("The Super Ditch model, however, allows for the possibility of greater bargaining power than if individual ditch companies are played against each other by municipalities attempting to get the best price.").

250. Chris Woodka, *Upping the Ante*, PUEBLO CHIEFTAIN, Jan. 27, 2013, http://coyotegulch.files.wordpress.com/2013/01/upping-the-ante-pueblo-chieftain-woodka.pdf; Chris Woodka, *'We're Still Unified,' Farmers Want a Better Rate for Water in Possible Aurora Lease*,

an increase of the lease price.[251] Representatives of the Super Ditch stated that regardless of prior agreements, the Super Ditch expected higher lease rates. As a result, the parties were unable to reach a deal.[252] It is unclear whether agricultural interests fully understand the needs of municipal water suppliers, especially the importance of certainty for municipalities.

To that end, the following represents needs that municipal water suppliers must have addressed in any water supply transaction. This is not an exhaustive list, and the importance of particular interests balance differently for each municipal water supplier.

(1) Municipalities demand a year-round water supply, and in Colorado, the vast majority of yearly supply is limited to spring runoff.[253] Although municipalities can rely upon snowpack forecasting, existing storage reserves, and restrictions on certain outdoor uses to balance demands against annual supplies,[254] those tools do not change the fact that municipalities face considerable uncertainty in budgeting their annual supply of water.

(2) Municipalities need to plan the operation of its system on a multi-year basis. Because a municipality's annual supply occurs during a relatively short period of time, municipal water suppliers must make significant operational decisions far in advance of spring runoff, largely based on predictions.[255] The impacts of incorrectly forecasting supply continue to effect municipal water suppliers long after any given irrigation season, sometimes effecting municipal operations for years afterwards.[256]

(3) Municipal water suppliers must provide water for a variety of uses. There exists some flexibility to prioritize or limit some types of use, like lawn irrigation. There is, however, very little ability to curtail other uses, notably drinking water supply. Moreover, because municipal water suppliers do not directly control the end water use (i.e. what comes out of a tap), municipal water suppliers face difficulties in effectuating these restrictions.[257]

(4) Municipal suppliers face a very high expectation for reliable supply. Some agricultural users may argue this point, but it is difficult to dispute that over 320,000 people of the City of Aurora need drinking water on a daily basis to survive.

(5) Municipal water demand is highly variable. But, populations of humans have a tendency to use water at the same times.[258] For this reason, domestic water supply is much like an interstate: you design and operate the system to

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PUEBLO CHIEFTAIN, Jan. 4, 2013, http://coyotegulch.files.wordpress.com/2013/01/were-still-unified-pueblo-chieftain-woodka.pdf.

251. *Id.*

252. *Id.*

253. Kenney, *supra* note 120, at 78.

254. *Id.* at 78-79.

255. Marc D. Waage, et al., Water Res. Eng'r, Incorporating Seasonal Stream Flow Forecasts into Operational Decision Making, Presented at Proceedings of the 69th Annual Western Snow Conference (April 2001), *available at* http://snobear.colorado.edu/WSC/WSC_2001/PDF/WSC2001WaageEtAl.PDF.

256. *See* Kenney, *supra* note 120, at 79.

257. *See* Bruce Finley, *Colorado Rolls out More Water-Saving Tactics as Conservation Efforts Pay Off*, DENVER POST, June 25, 2011, http://www.denverpost.com/ci_18350339.

258. *See* Rich Calder, *Toilet Bowl XLVI*, N.Y. POST, Feb 9, 2012, http://nypost.com/2012/02/09/toilet-bowl-xlvi/.

meet peak demands. Municipalities have to have a sufficient supply of water to meet peak demands.

(6) Many municipal and industrial water suppliers face problems associated with *increasing* demand.[259] Understanding that municipal water suppliers must balance solutions to short-term and long-term water demands explains why municipal suppliers may prefer seeking permanent transfers of water. Municipal suppliers often view permanent transfers as a solution to any immediate water supply concerns, but also as a means for reducing the amount of water needed for future increased demands.

All of these interests illustrate that municipal water suppliers will highly value those temporary transfers that provide the greatest reliable water supply able to meet anticipated future demands. Similarly, municipal water suppliers will value transactions, which, to the greatest extent possible, ensure that operational predictions made months and years in advance of use will actually come to pass. Certainty in the transaction and certainty in the water supply are critical to municipal and industrial water users.

One commentator has remarked that a critical aspect of making temporary transfers succeed is finding ways for water users with disparate interests to work together and create trust in finding a solution.[260] Seen in this light, the last-minute actions of the Super Ditch, to expect higher payments and change the terms of a lease with the City of Aurora, clearly illustrates a misunderstanding of what Aurora expected from such a lease. Changing the terms of the agreement in that fashion has broader implications than agricultural water users may have understood. It showed potential municipal lessors that dealing with the Super Ditch could be very uncertain, and that deals could be subject to unexpected changes. It evidences an intent to increase short-term gains over the potential of longer-term trust with a potential water lessor who values certainty.

C. MUNICIPAL WATER SUPPLIERS CANNOT RELY ON TEMPORARY TRANSFERS AS A LARGE PORTION OF ITS "FIRM YIELD" SUPPLY

As the Aurora-High Line Canal Lease illustrates, temporary transfers of water are particularly useful in providing water for drought relief and drought protection. Indeed, the very premise of the IWSA statute is to allow temporary, short-term transfers of use. Some water users, particularly non-municipal water users, believe that temporary changes of water can, however, be used as a source of "firm yield" for municipal interests: that municipalities will be able to permanently meet future demands through collections of temporary leases.[261] "Firm yield is generally defined as the amount of water that can be delivered on a reliable basis in all years and is typically determined by yield in dry years."[262]

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259. *See* COLO. WATER CONSERVATION BD., *supra* note 9, at 2-11.

260. *See* Mary Lou Smith, Vice President and Co-Founder of Aqua Engineering Inc., Conflict is not a Four-Letter Word, Presented at the South Platte Forum (October 6, 2006), *available at* http://southplatteforum.org/documents/2006/MaryLou_Smith.pdf; Winner & Smith, *supra* note 249, at 163.

261. *See* W. RES. ADVOCATES, FILLING THE GAP, COMMONSENSE SOLUTIONS FOR MEETING FRONT RANGE WATER NEEDS 36 (2011), *available at* http://westernresourceadvocates.org/water/fillingthegap/FillingTheGap.pdf; *see also* Winner & Smith, *supra* note 249 at 155-56, 160.

262. BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, WINDY GAP FIRMING PROJECT, FINAL ENVIRONMENTAL IMPACT STATEMENT 1-9 (2011), *available at*

However, reliance on temporary changes as a source of firm yield places municipal water suppliers in a difficult position.

When obtaining additional long-term water supplies, municipal reliance on firm yield is not just a desire, it is a requirement. Colorado statutes require that proposed subdivisions show "adequate evidence that a water supply that is sufficient in terms of quality, quantity, and dependability will be available to ensure an adequate supply of water for the type of subdivision proposed."[263] As an example, pursuant to the same statute, Douglas County enacted zoning regulations which require a report showing "a summary of the water rights owned and controlled by the [proposed water supplier]," the "anticipated yield of these rights in both an average and dry year," and "the amount of uncommitted firm supply the [proposed water supplier] has available for future commitment and development" in order to obtain approval of the subdivision.[264]

Thus, increased land development and its associated increased municipal water demand is tied to the ability to show long-term, firm water supply. Some environmental interests have advocated for increased reliance on temporary changes, as opposed to permanent water transfers, as a source of firm supply to offset future municipal and industrial water demands.[265] If the proposal of relying on temporary water transfers as opposed to permanent transfers were strictly applied to new developments in Douglas County, the authors believe that fewer subdivisions would be able to show a permanent firm yield. Whether intended or not, these proposals will affect future municipal development, and that aspect of the discussions should be considered.

Accordingly, municipal reliance upon firm yield from temporary sources of supply would be unwise because it presents significant concerns about the long-term reliability of those temporary sources. On the one hand, there is no reason to believe that a municipal supplier will only rely upon sources of supply it owns; the Aurora-High Line Canal Lease refutes that position. It is unclear, however, if agricultural users will be motivated to enter into sufficiently large and long-term leases to allow municipalities to rely upon leased water as a source of firm yield. Nearly every municipal water planner operates on at least a fifty-year planning horizon.[266] Yet, agricultural users appear more interested in short-term leases, on the scale of perhaps five to ten years.[267]

As an example of how an agricultural user's interest in short-term leases will defeat a municipal supplier's firm yield use of the water, one must consider municipal storage of water. As previously discussed, storage of water is a critical aspect of a municipal water system, allowing for year-round use by the municipality and protecting a municipality from drought conditions over a multi-year

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http://www.usbr.gov/gp/ecao/wgfp_feis/.

263. COLO. REV. STAT. § 30-28-133(3)(d).

264. DOUGLAS COUNTY, DOUGLAS COUNTY ZONING RESOLUTION, NO. 1805A.01.2, http://www.douglas.co.us/zoning/zoning-resolutions/section_18a_water_supply_-_overlay_district/.

265. *See, e.g.*, W. RES. ADVOCATES *supra* note 262, at 35-36.

266. *See, e.g.*, Stibrich, *supra* note 113, at 1 (Discussing a fifty-year planning horizon). Such fifty year planning periods derive in part from legal rulings in Pagosa Area Water & Sanitation Dist. v. Trout Unlimited, 219 P.3d 774, 777 (Colo. 2009) (holding that a fifty year planning period is reasonable).

267. Winner & Smith, *supra* note 249, at 157,161.

timeframe.[268] It is, however, considerably more difficult, costly, and time-consuming to build and permit storage reservoirs now than it has been in the past.[269] Municipal water suppliers will not be interested in building new reservoirs that will only see five to ten years of use.

Moreover, for a municipal supplier to rely on temporarily leased water as firm yield, it is unlikely the mechanism for such transfers could be an IWSA. Under the 2012 amendments, the SEO cannot approve any renewal application that would allow a "borrowing water right user to rely on the exercise of multiple [IWSA]s as its primary source of supply."[270] Instead, a water court decree is required.

Accordingly, while alternative transfer mechanisms may have value, and can probably be folded into a municipal water provider's collection of longer-term water supplies, agricultural users will need to demonstrate that they are willing to enter into long-term agreements before municipal suppliers will start treating leases as a source of firm yield. The authors believe this situation is analogous to the viability of wind power. Wind power can meet energy demand at certain times (when the wind blows), and therefore is a useful source of energy. However, wind power alone cannot provide reliable energy all the time; when the wind stops, so does the supply of energy. Similarly, water leases providing intermittent supplies of water are fine as an occasional source of supply, but municipalities must rely on something else the rest of the time.

D. NOT ALL IRRIGATED LAND IS CREATED EQUAL, AND SHOULD NOT BE LEASED OR PRICED EQUALLY

Assuming that every acre of irrigated land is worthy of a temporary change is flawed. Particularly in the context of IWSAs and other short-term transfers of water, water users must recognized that leasing the most junior water rights on a ditch or leasing water used on the least productive lands is a low-value transfer of water.

A lessee cannot use junior water rights if they would not be in priority at their permanent place of use.[271] This rule similarly applies to temporary changes such as IWSAs.[272] A lease of junior water rights is not usually desirable to municipalities, because they will need to exercise any temporary lease precisely when those junior rights are most likely to be legally unavailable for use. Because junior water rights may be nearly useless in dry years, parties to such transactions need to understand a dry-year lease of a senior water right may represent a lease of all of the water at that place of use, which may affect the lease price.

Similarly, transfers of water from low producing acreage are less desirable

268. *See supra* notes 255-60 and accompanying text.

269. *See* Neil Grigg, *Water Storage in Colorado: How it Developed-Toward the Future*, 30 COLO. WATER: NEWSL. OF THE WATER CTR. OF COLO. ST. U. 3, 5 (2013), *available at* http://wsnet.colostate.edu/cwis31/ColoradoWater/Images/Newsletters/2013/CW_30_6.pdf.

270. COLO. REV. STAT. § 37-92-309(6)(f)(I) (2013).

271. *See* Empire Lodge Homeowners' Ass'n v. Moyer, 39 P.3d 1139, 1149 (Colo. 2001).

272. § 37-92-309(2)(II).

to potential lessors because, compared to higher producing acreages, those areas likely produce a less transferable consumptive use.[273] As a result, municipalities will not be interested in leasing water from a ditch company if the leased water only represents a collection of the lowest production areas on a ditch system. It is reasonable, however, for municipal providers to understand that when they enter into temporary leases with agricultural water users it may be difficult for the agricultural users to only lease water used on high producing ground.[274]

Agricultural water lessors and municipal water lessees need to have realistic expectations of which irrigated lands are useful to lease. As the two examples above illustrate, neither party to a lease can expect a "free lunch." Agricultural water users must be willing to lease the valuable portions of their water, and potential lessees must be willing to pay the full costs associated with the lease.

Even when the parties are willing, however, not all irrigated lands can participate in such temporary transfers. Orchards and vineyards are the starkest example of irrigated lands that cannot participate in temporary transfers, because such crops cannot be temporarily dried-up.[275] Other situations may also prohibit leases of irrigated lands, including: prohibitively high dry-up costs, high groundwater levels, poor soil types, necessity to utilize certain crop rotation practices, weed management costs, crop replacement costs, or high dry-up labor costs.[276]

E. UNDERSTANDING WHAT A TEMPORARY LEASE IS PAYING FOR

Parties to a temporary transfer need to understand what they are buying and selling. Temporary transfers pay for temporary dry-up, which is not priced the same as an outright purchase of the water rights. As an example, parties must consider the costs of temporary dry-up in the lease price, including the costs associated with fallowing, erosion control, weed control, and ongoing irrigation infrastructure costs.

One study, surveying agricultural water users, determined that seventy-seven percent of South Platte River Basin agricultural users would expect a temporary water lease rate between $225 and $575 per acre.[277] The article concluded that such amounts fairly represented the market value of forgoing irrigation for a season.[278] But, another group (approximately ten percent of the survey participants) expected a lease payment of more than $1,000 per acre.[279] The study noted that this amount is approximately equal to market value for recent permanent water sales.[280] Thus, the study's authors concluded: "Perhaps, then,

273. *See generally* COLO. REV. STAT. § 37-92-309(1) (2013); *Limited Irrigation Management-Getting the Most Crop Per Drop*, AGRONOMY NEWS (Extension Unit, Dep't of Soil & Crop Scis., Colo. State Univ.), April 2007, *available at* http://www.extsoilcrop.colostate.edu/Newsletters/documents/2007/2007_irrigation.pdf (analyzing amount of consumptive use in relation to type of crop grown).

274. *See* Winner & Smith, *supra* note 249, at 158, 160.

275. COLO. WATER CONSERVATION BD., *supra* note 248, at 3-13, 3-15.

276. *Id.*

277. Pritchett, et al., *supra* note 5, at 3-4.

278. *Id.*

279. *Id.*

280. *Id.*

these farmers are calculating a market value for their water rather than a minimum payment to forgo irrigation."[281] A potential lessee will not lease a water right for the same price the lessee would pay to buy the water right.

F. INFRASTRUCTURE, INFRASTRUCTURE, INFRASTRUCTURE

Municipalities need infrastructure to transport the leased water to its temporarily changed place of use. Although this issue is consistently discussed as an impediment to temporary transfers,[282] the authors of this article believe that infrastructure development is a significantly underappreciated impediment to widespread utilization of temporary changes.

By way of example, the City of Aurora recently constructed its Prairie Waters Project, at a price tag of over $600 million.[283] Aurora largely funded the project through bonds, which will continue to require payment for many years to come.[284] The project has an initial capacity of ten thousand acre-feet per year,[285] and an anticipated capacity of forty-six thousand acre-feet per year.[286] Much of the water used in the system is the recapture and conveyance of Aurora's existing fully consumable water rights.[287] The system conveys water over thirty-four miles, and includes a state-of-the-art water treatment system.[288]

The large cost of the Prairie Waters Project demonstrates why many municipalities may feel reluctant to build costly infrastructure for a temporary source of supply. The Prairie Waters Project allowed Aurora to recapture and treat water the city already owned and, comparatively speaking, only transports the water a relatively short distance.[289] It should be no surprise that a municipal water supplier might balk at permanent infrastructure costs of these magnitudes, which would only provide temporary access to water owned by another entity and leave that same expensive infrastructure unused for long periods of time.

The authors do not see any good resolutions to this issue. It is likely that short-term leases will be limited in geographical scope or limited to a small number of participants who are able to integrate certain leased water rights into their infrastructure at low costs. In the context of the Aurora High Line Canal Lease, Aurora was able to effectuate a short-term lease through its existing water conveyance structures.[290] Many of Aurora's neighboring municipal water suppli-

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281. *Id.*

282. COLO. WATER CONSERVATION BD., *supra* note 248, at 3-13, 3-15; COLO. WATER CONSERVATION BD., *supra* note 232, at 5-4; W. GOVERNORS' ASSOC. & W. STATES WATER COUNCIL, WATER TRANSFERS IN THE WEST 15, 64 (Dec. 2012), *available at* http://www.westgov.org/reports/cat_view/95-reports/263-2012.

283. AURORA WATER, PRAIRIE WATERS PROJECT, https://www.auroragov.org/cs/groups/public/documents/document/002347.pdf (last visited Feb. 21, 2014).

284. Sara Castellanos, *Bond Rating Upgraded on Aurora Water Debt*, AURORA SENTINEL, July 19, 2012, http://www.aurorasentinel.com/news/bond-rating-upgraded-on-aurora-water-debt/.

285. AURORA WATER, *supra* note 283.

286. *Aurora - Prairie Waters Project*, DEERE & AULT CONSULTANTS, INC., http://deereault.com/water-resources/aurora-pwp.php (last visited Feb. 1, 2014).

287. AURORA WATER, *supra* note 283.

288. *Id.*

289. *Id.*

290. *See* AURORA WATER, WATER SUPPLY FACT BOOK 2, 14-15 (2010-2011), *available at* https://www.auroragov.org/cs/groups/public/documents/document/002337.pdf.

ers, without that existing infrastructure, would have been unable to even consider such a lease. Some agricultural water users will find it much easier than others to temporarily transfer water, based solely upon their proximity to existing municipal water infrastructure.[291]

All other circumstances being equal, longer-term temporary transfer agreements have a better chance of convincing municipal suppliers to invest in infrastructure, as the cost of such investments will produce a greater water supply. Thus, isolated agricultural water lessors should expect longer-term agreements than agricultural producers located near municipalities. Moreover, if infrastructure costs are sufficiently large, municipalities will begin to favor alternative transfer mechanisms with greater certainty of long-term access to water, such as "Purchase and Leaseback." Purchase and Leaseback occurs when a municipality buys and owns the water rights, but temporarily leases the water back to agricultural users during wet and average years.[292]

G. WATER COURT VERSUS SEO APPROVAL

The discussion of this topic could be an article unto itself. Nonetheless, as Colorado has established the water courts as the venue and authority for deciding water matters,[293] any transfer of authority to the SEO over certain water matters is likely to be contentious. The authors do not believe that the SEO should administratively approve every temporary transfer; alternative transfer methods that seek to dry-up certain amounts of acreage permanently should obtain water court approval. The authors also believe, however, that the SEO can effectively administer temporary changes, and that such temporary transfers allow flexible and time-sensitive management of a dynamic resource. The key, of course, is gaining consensus among Colorado water users as to which changes are "temporary." On that issue, the devil is in the details.

VI. CONCLUSION

As Colorado continues to explore the role of temporary changes and alternative transfers of water, it will have many opportunities to more effectively manage the State's limited water resources. Temporary transfers, like the existing Interruptible Water Supply Agreements, are a necessary advancement to the modern use and administration of water. Legally recognizing these kinds of plans will allow water users to collectively share a limited and dynamic resource.

Colorado should embrace these new opportunities and utilize the new legal frameworks when such temporary transfers are needed. The experiences of the City of Aurora and the High Line Canal indicate that temporary transfers of water will be a successful tool for both municipal and agricultural water users. However, Colorado water users should also understand the limitations of temporary changes, and not view them as a silver-bullet-solution to Colorado's projected water deficits. Nuanced and flexible adoption of temporary transfers will

291. *See* DINATALE WATER CONSULTANTS, INC., WATER PARTNERSHIPS: AN EVALUATION OF ALTERNATIVE AGRICULTURAL WATER TRANSFER METHODS IN THE SOUTH PLATTE BASIN 17 (March, 2012), *available at* http://dinatalewater.com/pdf/water_partnerships.pdf.

292. COLO. WATER CONSERVATION BD., *supra* note 10, at 10.

293. COLO. REV. STAT. § 37-92-203(1) (2013).

be the key to their success.

For instance, such temporary transfers are good at resolving water demands associated with drought protection and drought recovery, but temporary transfers will not be a useful source of water that municipalities can rely upon for long-term firm yield. Much like the role of wind power in the context of energy supply, temporary transfers will work well as a part of a municipal water supply, but will not provide enough water at the right times to become a reliable base supply.

While the current IWSA statute facilitates such temporary transfers, it has yet to be widely utilized in Colorado. Recent amendments to that statute are good improvements, allowing, for example, renewals of IWSA plans.

Impediments continue, however, to block widespread utilization of temporary changes. From an agricultural water user's perspective, uncertainty regarding the outcome of a historic consumptive use analysis appears to discourage interest in temporary transfers. From a municipal water supplier's perspective, the uncertainty of whether such temporary supply will be available in twenty to thirty years, even on an occasional basis, appears to discourage interest in temporary transfers. On those issues, Colorado should expect further proposed legislation, as some water users will perceive legislative action as the best means to a resolution. The authors caution that any legislative changes on these issues should not solve a problem for one water user at the expense of other water users.

Other impediments – like the lack of necessary infrastructure, or the inability to lease water associated with junior rights or low producing irrigated lands – will probably hamper, or even preclude, the ability of certain water users to temporarily lease their water for new uses.

What may better serve some water users is establishing good relationships between municipal and agricultural water users. Such relationships will help both parties determine the role of a proposed temporary transfer by understanding what water can be leased, what water cannot be leased, what lands can be dried-up, what the resulting transferable yield will be, and what the temporary dry-up of land is monetarily worth.

In consideration of the opportunities, and despite the impediments, it is likely that Colorado will see an expansion of alternative transfer mechanisms in the coming years. Alternative transfer mechanisms, however, will not solve every water demand issue in Colorado. Colorado should recognize the proper role of alternative transfer mechanisms, and tailor the legal frameworks governing those transfers accordingly. Doing so will result in better water management for the state, reductions in the magnitude of projected water supply deficits, and continued respect for Colorado's unique water rights system and its individual water users.