

AGENDA

HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD

April 15, 2010 4 p.m.

**Pitkin County Courthouse Annex
Plaza One Conference Room
530 E. Main Street, Aspen**

- 1. Public Comment**
- 2. Board Comments**
- 3. Approval of the Minutes
March 15, 2010**
- 4. Appointment of Vice-Chair**
- 5. Discussion with the Colorado Water Trust
Amy Beatie**
- 6. Pitkin County Water Resources Investigation
Peter Nichols, Kerry Sundeen and Maria Pastore**
- 7. Frying Pan River Valley Economic Benefits study
Request for Proposal**
- 8. Boat Ramp Inspection Program at Ruedi Funding Request
Mark Fuller - Ruedi Water and Power Authority**
- 9. Executive Session
Acquisition of Water Rights
C.R.S. 24-6-402 4 a**

ADJOURN

Agenda is subject to change

HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD

Meeting Minutes

March 18, 2010

Pitkin County Courthouse Annex Plaza One Conference Room
530 E. Main Street Aspen, CO

Board members present: Ruthie Brown, Steve Hunter, Bill Jochems, Rick Neiley Jr.,
Greg Poschman

Board members absent: Lisa Tasker, Andre Wille

Others present: John Ely, Cindy Houben, Catherine Berg, Jane Achey
Phil Overeynder, Andy Rossello, Ken Neubecker, Tom
Moore

Public Comment

Tom Moore, President Salvation Ditch Company, introduced himself to the Board and stated he had come to observe.

Board Comments

Mr. Jochems is interested in a library for the River Board. He thought John Ely could select some law books and get some book recommendations from the scientists and engineers among the Board.

Approval of Minutes January 21, 2010 and February 18, 2010

Postponed until quorum present.

Appointment of Vice Chair

Postponed until all eligible members present.

Castle Creek Hydro Plant-Phil Overeynder, Director of Water Department for City of Aspen and Andy Rossello, Utility Engineer for the City of Aspen

Mr. Overeynder and Mr. Rossello presented a detailed slide show account of a project to replace the current hydroelectric water system covering the historical development of Aspen's hydroelectric plant from its establishment in 1892 to the present and the capacities, results and outlook for the new project.

Mr. Poschman joined the meeting at 5:15 p.m.

Water Diversions – Ken Neubecker

Mr. Neubecker with Colorado Trout Unlimited gave a power point presentation regarding trans-mountain diversions. He covered 12 trans-mountain diversions from the Colorado River and numerous projects. A discussion ensued regarding what percentage of water is diverted from the Roaring Fork and Frying Pan Rivers. Discussion continued with the consequences of increased diversions, growth and climate change.

The Board took a five minute break and the meeting reconvened at 6:15 p.m.

**Flood Plain Mapping – Catherine Berg and Cindy Houben – Pitkin County
Community Development Department**

The community development department would like to update the County's flood plain mapping which currently dates back to 1987 and requested support. The idea is to digitize the current system. There is currently no dollar amount associated with the project. Ms. Houben stated they are not asking for set amount, but will create a scope of work to link the project to Healthy Rivers and Streams.

Resolution Supporting the Roaring Fork Watershed

Discussion ensued concerning the format of the document drafted by Mark Fuller. Chairman Brown stated they will defer to John Ely to be their guide and asked if he would draft a new one. Mr. Ely will tweak Mr. Fuller's draft.

Mr. Poschman made a motion to approve the Resolution as edited. Mr. Jochems seconded. Motion passed 5 to 0.

Approval of Minutes January 21, 2010 and February 18, 2010

Mr. Jochems made a motion to approve the February 18, 2010 minutes. Mr. Hunter seconded. Motion passed 5 to 0.

Mr. Neiley made a motion to approve the January 21, 2010 minutes. Mr. Jochems seconded. Motion passed 5 to 0.

Mr. Neiley left the meeting at 6:43 p.m.

Executive Session

Mr. Jochems moved to enter into executive session pursuant to C.R.S. § 24-6-402 (4)(a), (b) and (c) for the purpose of discussing protection of instream flows. Mr. Hunter seconded the motion. Motion passed 4 to 0.

The Board returned from executive session and reconvened at approximately 7:30 p.m.

Adjourn

The Board meeting adjourned at approximately 7:30 p.m.

Approved:

Attest:

Ruthie Brown – Chair man
Healthy Rivers and Streams
Citizens Advisory Board

Lisa MacDonald

RiverBank: Water Trusts in the Western United States

**Amy W. Beatie
Executive Director, Colorado Water Trust
Denver, Colorado**

I. Introduction

It was a crisp fall day and I was heading over Cochetopa Pass from Saguache, Colorado to Gunnison, Colorado. I made the left-hand turn at the “Old Agency” sign, nosed my car south along the dirt road, and stopped. I opened my car door and stepped out, grasshoppers clack-clacking everywhere. I was in a high mountain valley—cattle country—overlooking a wide swath of land irrigated by a few ditches that pull water from a twisting, turning, tightly winding creek well-protected by willows, alders, and brush. And I was on private property.

I was also in the middle of a Colorado Division of Wildlife fishing easement covering approximately eight miles of three tributaries, all of which support wild trout. If you fish and you haven’t been to this area of Colorado, you are missing out. You are also missing out on a microcosmic example of a macrocosmic Colorado water challenge: the competition between consumptive water uses like irrigation and nonconsumptive uses like instream flows.

The State of Colorado has clearly recognized the importance of instream water uses in addition to more traditional water uses. The placement of an instream flow program in the hands of the Colorado Water Conservation Board (“CWCB”) in 1973 was its clearest pronouncement.¹ Yet, the commitment to instream flows is young, as are many of the water rights that the CWCB has secured to protect Colorado’s streamflows.² As a result, more work to balance consumptive uses like irrigation and the needs of aquatic ecosystems must occur. This sentiment—heard around the West a bit louder and more often lately—has fueled the rate at which water trusts are springing up in many prior appropriation states. Most—if not all—water trusts were formed to protect and enhance streamflows by using market-based, voluntary, cooperative transactions that put older, more defensible, more reliable water rights back into streams for the benefit of aquatic ecosystems, the flora and fauna that depend on them, and the people who enjoy them.

The water trust movement is premised on the notion that the tools necessary to improve streamflows already exist in the western state-by-state water allocation systems, that “change”—one from an outdated maximizing-diversions paradigm to a newer one of maximum use that includes instream uses such as recreation, piscatorial, and aesthetic uses—can be achieved within the “constants” of western water law.

¹ See generally COLO. REV. STAT. §§ 37-92-102(3) & -102(4) (2009) (setting forth the parameters of Colorado’s instream flow program).

² Jerd Smith, *State’s Money in the Banks*, ROCKY MOUNTAIN NEWS, Sept. 15, 2008, at 5.

This paper begins with a description of water trusts generally. It then describes in detail Colorado's instream flow program, a discussion that necessarily includes a description of the CWCB and the role the Colorado Water Trust ("CWT") plays in the context of the state's instream flow program. It then examines the challenges and opportunities facing the effort to improve instream flows statewide. The paper concludes with the idea that, while using water transactions to improve Western streamflows is not a panacea to solving the tension between diversions and aquatic ecosystem needs, working to create an active instream flow transaction market is a step in the right direction—and an important one.

II. What is a Water Trust?

For well over a century, the prior appropriation doctrine has determined how water is allocated in the Western states.³ Based on the principle of "first in time, first in right," prior appropriation allows the first person who puts water to a beneficial use a right to continue that use without interference from those who began using water later.⁴ The doctrine historically (and arguably, so some say) required that to obtain a defensible water right, one had to remove water from the stream system through a diversion.⁵ Primarily during the summer peak growing season, but also at other times of year, these legal water withdrawals stress the flow levels in stretches of many Western streams and rivers, forcing them to run critically low—and indeed sometimes dry—imperiling aquatic ecosystems.⁶

To mitigate these effects, every Western state maintains some form of instream flow program, a program that entitles water that remains in rivers to the same attributes of a diversionary water right, namely a defined volume, a place of use, a season of use, and a defensible priority.⁷ Some instream flow programs are nascent, some more established, but all

³ James N. Corbridge & Teresa A. Rice, VRANESH'S COLORADO WATER LAW at 3-7 (Rev. Ed. 1999) (describing the settlement of the West, the development of prior appropriation as the local custom for water allocation, and the formal adoption of the system in each of the seventeen mainland Western states).

⁴ See *id.* at 7.

⁵ Take, for example, recent and protracted litigation in Colorado over kayak courses (now called Recreational In-Channel Diversions, or RICDs), which pushed the debate in Colorado regarding diversions and instream water use to its height. Those who opposed the idea that water rights that remained in the stream to be used for play-boating in kayak parks (and other instream benefits) could constitute a defensible water right argued, among a litany of other arguments, that one was required to physically remove water from the stream in order to have a lawful water right. They argued that removal of water from its source as a requirement for a water right was a principle embedded in the prior appropriation doctrine. See Glenn E. Porzak et al., *Recreation Water Rights: "The Inside Story"*, 10 U. DENV. WATER L. REV. 209, 216 (2007) (discussing the opposition to Recreational In-Channel Diversions in the application for water rights of the City of Golden, Colorado in Case No. 98CW448 (Colo. Dist. Ct., Water Div. 1)).

⁶ For an example of a diversion structure that dries up a river in Colorado, see the photograph of the San Miguel River in Colorado at <http://www.coloradowatertrust.org/physical-solutions/detail/ccc-ditch/>.

⁷ See, e.g., 1967 Minimum Water Flows and Levels Act, WASH. REV. CODE § 90.22.010 (2008) ("Establishment of minimum water flows or levels--Authorized--Purposes. The department of ecology may establish minimum water flows or levels for streams, lakes or other public waters for the purposes of protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values of said public waters whenever it appears to be in the public interest to establish the same. In addition, the department of ecology shall, when requested by the department of fish and wildlife to protect fish, game or other wildlife resources under the jurisdiction of the requesting state agency, or if the department of ecology finds it necessary to preserve water quality, establish such minimum flows or levels as are required to protect the resource or preserve the water quality described in the request or determination. Any

seem to be ever-evolving.⁸

In addition to instream flow programs, the use of permanent sales or acquisitions,⁹ leases,¹⁰ soft-management solutions,¹¹ structural solutions,¹² and other incentive-based approaches to streamflow enhancement are improving the way streamflows are protected and improved in Western states. These efforts—the everything-but-new-instream-flow-appropriation efforts—are being pursued by water trusts throughout the West.

Water trusts, generally nonprofit organizations recognized as public charities under Section 501(c)(3) of the Internal Revenue Code, have been formed to help restore flows for existing habitat while working with water users to maximize the benefits of their water portfolios. They do this by encouraging voluntary, market-based transactions to put more senior, more defensible, more reliable water back in stressed segments of rivers while offering at the same time an alternative to selling water to, say, municipalities or local development. Although some water trust work requires working within a state's instream flow program, some does not.¹³ As described above, the tools used are as various as the location of each water right

request submitted by the department of fish and wildlife shall include a statement setting forth the need for establishing a minimum flow or level. When the department acts to preserve water quality, it shall include a similar statement with the proposed rule filed with the code reviser. This section shall not apply to waters artificially stored in reservoirs, provided that in the granting of storage permits by the department of ecology in the future, full recognition shall be given to downstream minimum flows, if any there may be, which have theretofore been established hereunder.”); C.R.S. § 37-92-102(3) (stating that “[f]urther recognizing the need to correlate the activities of mankind with some reasonable preservation of the natural environment, the Colorado water conservation board is hereby vested with the exclusive authority, on behalf of the people of the state of Colorado, to appropriate in a manner consistent with sections 5 and 6 of article XVI of the state constitution, such waters of natural streams and lakes as the board determines may be required for minimum stream flows or for natural surface water levels or volumes for natural lakes to preserve the natural environment to a reasonable degree”).

⁸ For some indication of the range of ages of different Western states' programs, it is helpful to note that an instream flow program was adopted in Washington as early as 1971, see <http://www.ecy.wa.gov/programs/wr/instream-flows/isfrul.html>, but in Texas not until 2001. See <http://www.twdb.state.tx.us/InstreamFlows/index.html>.

⁹ A sale is a permanent transfer of a water right for change to instream flow use. In Colorado, it requires separation of the water from the land and acceptance of the water by the CWCB. We at CWT can put together funding packages to buy the water, conduct any necessary engineering and other investigations including investigations into title, and will conduct the transaction with the CWCB. In some cases, we will also participate in a water court application to change the use of the acquired water to instream flows.

¹⁰ In Colorado, there are two options for leasing water to the CWCB. These are described in more detail *infra* Part IV.

¹¹ These include alternatives such as changes in points of diversion, changes in source (e.g., a surface diversion to a well), and exchanges. Other approaches include innovative agricultural technology and retimed storage releases or changes in reservoir management that can provide additional flows. In Colorado, these types of arrangements may have to go through water court, depending upon the plan.

¹² Water-short stream reaches can also benefit from physical solutions such as headgate and delivery-system upgrades and outlet structure and spillway renovation. These solutions may make more water available downstream.

¹³ In Colorado, use of acquired and leased water for instream flows must occur within the confines of Colorado's instream flow program. As described above, the CWCB is the only entity in Colorado that may hold water rights for instream flows. See C.R.S. § 37-92-102(3) (stating that “[i]n the adjudication of water rights pursuant to this article and other applicable law, no other person or entity shall be granted a decree adjudicating a right to water or interests in water for instream flows in a stream channel between specific points, or for natural surface water levels or volumes for natural lakes, for any purpose whatsoever”). On the other hand, soft-management solutions, structural solutions, and other incentive-based approaches may not need to involve the instream flow program. Sometimes, a

deal.

When considering water trust tools, one would be remiss in failing to mention that water trusts have drawn heavily from the institutional model of the private land conservation movement.¹⁴ Given that, their work is often described in shorthand as using tools that mirror the tools used in land conservation. But this description is, perhaps, too blunt an instrument to do the trick. A discussion about water trusts will wander into land conservation territory, to be sure, but only for a brief moment before moving into and spending most of its time lingering on points pertaining to the intricacies of Western water law and instream flow protection. The reason? The “constants” of Western water law have no analogue in land conservation except for the very obvious: a Western water right, like land, is real property.¹⁵

Different systems govern the use and allocation of land and water. Practical considerations are at play here as well.¹⁶ To add to the complexity, state-specific water laws and instream flow laws are the major determinants of what a water trust will look like and the programs each will pursue.¹⁷ Thus, even from water trust to water trust, the deals they pursue can and do look rather different.

There is also an element of perception at play here. As Dan Tarlock has noted, “instream flow protection rests on the twin bases of public acceptance and economic rationality.”¹⁸ This idea as it relates to the work of water trusts is best encapsulated in the following quotation from John Wilson, a rancher in Oregon:

When it comes to water challenges . . . , one thing most folks can agree on is that we'd like to solve them ourselves. I think one of the best ways to make sure water gets where it needs to go is to use the free enterprise system to give property owners some choices. That's what I like about the Columbia Basin Water Transaction Program.¹⁹

Mr. Wilson has it right on a number of levels. First, he has recognized that balancing consumptive and non-consumptive uses is a challenge, and one that is being taken on state by state. Development of traditional water rights (i.e., rights that divert water from the stream system for consumptive uses) typically came at the expense of healthy streamflows. Over the years, however, people in the West have come to recognize the social, economic, and

joint approach is warranted. The facts of each deal will determine whether the instream flow program must be used.

¹⁴ Mary Ann King, *Getting Our Feet Wet: An Introduction to Water Trusts*, 28 HARV. ENVTL. L. REV. 495, 507-511 (2004). The very success of land trusts encouraged the effort to apply the same kind of transaction- and incentive-based programs to water. Even more intriguing is the cross-pollination that is now occurring between land trusts and water trusts.

¹⁵ Tom Huhnle, *Note: The Federal Income Tax Implications of Water Transfers*, 47 STAN. L. REV. 533 (1995).

¹⁶ For example, land deals do not lend themselves neatly to temporary conservation arrangements. But temporary protection, or even intermittent protection, works well in the water context. Sometimes, water is needed in a particular system only in dry years. A dry-year lease arrangement is possible. Leasing in general is popular given the flexibility it provides. See *infra* Part IV.

¹⁷ See King, *supra* n. 14 at 505-506.

¹⁸ A. Dan Tarlock & Doris K. Nagel, *FUTURE ISSUES IN INSTREAM FLOW PROTECTION IN THE WEST* 137 (Lawrence J. MacDonnell, Teresa A. Rice, & Steven Shupe eds., 1989).

¹⁹ John Wilson, Wilson Cattle Company, as quoted at <http://www.cbwtp.org/about.htm>.

environmental importance of healthy streamflows. Accordingly, diverters, especially those drying up stream segments, are seeing a lot more pressure to mitigate the damage local aquatic ecosystems suffer as a result of their diversions. Although their diversions are lawful, the consequences to an ecosystem can be dire. Therein lies the challenge that water trusts aim to address every day: how can the needs of both the diverter and the aquatic ecosystem be met?

Second, he recognizes what most people who work at water trusts learn almost immediately: people prefer using free-market solutions to solve environmental issues. The top-down, mandated approach is often seen as offensive; you've probably heard it characterized as failing to recognize the extent to which people believe they are entitled to exercise—i.e., trampling on—their private property rights. Where a river system suffers from low flows and local water users' diversions are receiving attention, it becomes clear time and time again that people would rather work on a solution over which they have control as opposed to one that is mandated or imposed.

Lastly, Mr. Wilson has observed that a water transaction program (he refers to the Columbia Basin Water Transaction Program) offers a free-market choice to repairing streamflows. Because water trusts do indeed offer a voluntary solution and a financial benefit—a solution to which many water users are responsive—they are being formed all over the West.

The first to form was the Oregon Water Trust, which began operations in 1994.²⁰ The Washington Water Trust began operations in 1998.²¹ The Colorado Water Trust and the Montana Water Trust followed, in 2001²² and in 2002,²³ respectively. There are also a number of other water trusts with jurisdictions ranging from the very local to regional, and other organizations whose mission and programs are not tailored exclusively to transacting water deals for streamflow enhancement but who nonetheless work on water transactions as part of their watershed programs.²⁴

III. How Water Trusts Work: A Focus on Colorado's Instream Flow Program, the CWCB, and CWT

Many water trusts must work in collaboration with a state administrative agency. In some cases, the water acquired by a water trust may *only* be held by a state agency if it is to be used for instream flows. For example, as mentioned previously, Colorado's instream flow

²⁰ Janet C. Neuman, *The Good, The Bad, and The Ugly: The First Ten Years of the Oregon Water Trust*, 83 NEB. L. REV. 432, 433 (2004). The Oregon Water Trust merged with Oregon Trout this summer. See Memorandum from Joe Whitworth, Executive Director, Oregon Trout and Lynn Youngbar, Interim Executive Director, Oregon Water Trust to Oregon Water Trust & Oregon Trout supporters, members, and partners (re: Upcoming Merger of Oregon Water Trust and Oregon Trout) (June 24, 2008) (available at <http://www.owt.org/Merger%20Announcement.pdf>).

²¹ <http://www.thewatertrust.org/>.

²² <http://www.coloradowatertrust.org/about/>.

²³ <http://www.montanawatertrust.org/about-us/aboutus.html>.

²⁴ See, e.g., the Columbia Basin Water Transactions Program, <http://cbwtp.org/jsp/cbwtp/program.jsp>; the Trans-Pecos Water Trust, <http://www.transpecoswatertrust.com/index.html>; the Deschutes River Conservancy, <http://www.deschutesriver.org/>; the Scott Water Trust, <http://scottwatertrust.org/index.html>; Friends of the Teton River, <http://www.tetonwater.org/>; the Klamath Basin Rangeland Trust, <http://www.kbrt.org/>; The Nature Conservancy, <http://www.nature.org/initiatives/freshwater/>; and Trout Unlimited, <http://www.tu.org/site/c.kkLRJ7MSKtH/b.3022897/k.BF82/Home.htm>.

program is housed within a state agency, the CWCB. There are a number of different sections within the CWCB to manage its various programs.²⁵ The instream flow program is managed by the CWCB's Stream and Lake Protection Section. The Stream and Lake Protection Section's mission is "to correlate the activities of mankind with reasonable preservation of the natural environment" and "to preserve or improve the natural environment to a reasonable degree."²⁶ To accomplish the Stream and Lake Protection Section's mission, the CWCB adds water to the instream flow program in two ways. The first is through appropriating new water rights for particular stretches of river.²⁷ Currently, the instream flow program stewards more than 1,400 appropriations protecting nearly 9,000 river miles.²⁸ This is an incredible network of protected streams and rivers. But the CWCB's instream flow appropriations are quite junior. Remember that it was not until 1973 that the Colorado legislature created the instream flow program. As a result, the CWCB's instream flow appropriations are young, with priorities that date only from 1973 to the present. Often when a new, junior water right is obtained, regardless of its decreed use, it may have water available to it only infrequently and in inconsistent amounts. Because the CWCB's appropriated water rights are often quite junior, they cannot prevent the dewatering of stream reaches by senior water rights located above or in the instream flow reach; they can only protect conditions from worsening.²⁹

Of course protection from further decreases in flow for an already stressed segment of river has its benefits, but if *improving* streamflows is part of the plan, another tool must be used. The second arrow in the CWCB's quiver is the acquisitions program.³⁰ Acquisitions are an

²⁵ The CWCB is home to the Water Supply Protection section, "responsible for helping to maintain the State's ability to utilize and develop its entitlements under interstate compacts and equitable apportionment decrees in accordance with state water law," see <http://cwcb.state.co.us/WaterSupply/>; the Watershed Protection & Flood Mitigation, "directed to prevent flood damages, review and approve floodplain designations prior to adoption by local governmental entities, and provide local jurisdictions with technical assistance and floodplain information," see <http://cwcb.state.co.us/WatershedProtectionFloodMitigation/>; the Water Supply Planning & Finance section, "responsible for managing the Water Project Loan Program and the Non-Reimbursable Project Investments Program," see <http://cwcb.state.co.us/Finance/>; the Office of Water Conservation & Drought Planning, which promotes "water use efficiency while providing public information and technical and financial assistance for water conservation planning" and "drought planning by encouraging and assisting communities to prepare and implement drought mitigation plans and by monitoring drought impacts and informing the public, media, and state officials," see <http://cwcb.state.co.us/Conservation/>; Intrastate Water Management & Development section, which "focuses on helping prepare for and meet Colorado's future water supply needs," see <http://cwcb.state.co.us/IWMD/>; and the Stream and Lake Protection section, which "manages and administers the state's Instream Flow Program" and is "responsible for the appropriation, acquisition and protection of instream flow and natural lake level water rights to preserve and improve the natural environment to a reasonable degree." See <http://cwcb.state.co.us/StreamAndLake/>. With programs that encourage maximizing the use of the state's water and provide financing for water construction projects housed within the same agency as a program intended to improve streamflows, there can be mission conflicts.

²⁶ See *supra* n. 25.

²⁷ See *supra* n. 7.

²⁸ See CWCB Stream and Lake Protection Section, TABULATION OF INSTREAM FLOW AND NATURAL LAKE LEVEL WATER RIGHTS at 1 (January 2007).

²⁹ When water is available to newer, junior water rights, water is generally available to most water rights in the system and, as a result, to the stream system itself. For all water rights in the West, the times of plenty are not the times of crisis. The times of crisis are the shortages. Added to that challenge are stream reaches where the CWCB could not satisfy one of the elements of a new water right appropriation: water availability. On those reaches, it cannot appropriate a water right at all.

³⁰ See C.R.S. § 37-92-102(3) (stating that the CWCB "also may acquire, by grant, purchase, donation, bequest,

important mechanism by which the CWCB preserves or improves streamflows in critical areas of the state. It has at least two benefits that are not available to the appropriations program. First, the acquisitions program matches willing sellers (or lessors) with a willing buyer (or lessee). As a result, it represents a market-based approach to protection of streamflows. Second, it provides the CWCB with access to senior water rights.

Under the acquisition program, the CWCB can acquire water, water rights, or interests in water to preserve or improve the natural environment to a reasonable degree.³¹ It can acquire absolute direct flow or storage rights on either permanent or temporary bases.³² To determine whether to accept an offered water right, the CWCB evaluates proposed water acquisitions using a public process and established criteria.³³ Among the information it must consider, the CWCB must quantify the amount of water necessary to preserve or improve the natural environment.³⁴ It works closely with the Colorado Division of Wildlife to conduct these analyses.³⁵ Once it has determined to accept a water right into the instream flow program, under almost all circumstances, the CWCB must apply to water court to obtain a decreed right to use the water right for instream flow purposes.³⁶ The water court ensures that no injury will result to other water users from the change.³⁷

devise, lease, exchange, or other contractual agreement, from or with any person, including any governmental entity, such water, water rights, or interests in water in such amount as the board determines is appropriate for stream flows or for natural surface water levels or volumes for natural lakes to preserve or improve the natural environment to a reasonable degree”).

³¹ *Id.*

³² See C.R.S. § 37-92-102(3) (“The board also may acquire, by grant, purchase, donation, bequest, devise, lease, exchange, or other contractual agreement, from or with any person, including any governmental entity, such water, water rights, or interests in water in such amount as the board determines is appropriate for stream flows or for natural surface water levels or volumes for natural lakes to preserve or improve the natural environment to a reasonable degree.”). It is prohibited from acquiring conditional water rights. C.R.S. § 37-92-102(3)(c.5) (stating that “as to any application filed by the board on or after July 1, 1994, the board may not acquire conditional water rights or change conditional water rights to instream flow uses”).

³³ See generally C.R.S. § 37-92-102(3). See also 2 COLO. CODE REGS. 408-2 (“ISF Acquisition Rules”). These rules were revised in early 2009 to incorporate statutory changes in the program made under House Bill 08-1280 and accommodate the funding the CWCB now has available to its acquisition program, discussed in more detail *infra* Part IV of this paper. Under the revised rules, the CWCB must consider certain factors in evaluating a proposed acquisition, including: (1) the reach of the stream where acquired water will be used; (2) the historical use and return flow patterns; (3) the natural flow regime; (4) the location of other water rights within and near the reach; (5) the potential for material injury to existing decreed water rights; (6) the natural environment that may be preserved or improved by proposed acquisition; (7) the effect of proposed acquisition on interstate compacts and maximum utilization of the waters of state; (8) whether the water will be available for subsequent use downstream; and (9) costs associated with transaction.

³⁴ C.R.S. § 37-92-102(3)(c) (“Before initiating a water rights filing, the board shall determine that the natural environment will be preserved to a reasonable degree by the water available for the appropriation to be made; that there is a natural environment that can be preserved the board’s water right, if granted; and that such environment can exist without material injury to water rights.”)

³⁵ See C.R.S. § 37-92-102(3) (“Prior to the initiation of any such appropriation or acquisition, the board shall request recommendations from the division of wildlife and the division of parks and outdoor recreation.”).

³⁶ 2 COLO. CODE REGS. 408-2 (ISF Acquisition Rule 6i).

³⁷ In Colorado, all changes of water rights must meet the elements of what is called the “no-injury” rule. See *Handy Ditch v. Loudon Irrigating Canal Co.*, 62 P. 847, 848 (Colo. 1900). In *Handy*, the Colorado Supreme Court clearly articulated the no-injury rule, stating:

In addition to obtaining fee simple title to a water right, the CWCB has other options for putting acquired water in the instream flow program. Two common ones are temporary in nature. The first option is the negotiation of a loan under section 37-83-105, C.R.S. (2009) (a “3-in-10 loan”). Water rights placed in 3-in-10 loan may only be used for a period of 120 days in a given year, and only for three (3) years of use over a ten (10) year period.³⁸ A 3-in-10 loan may be used on any stream where the CWCB currently holds an appropriated instream flow right, and in an amount up to the decreed amount of the instream flow.³⁹ One of its most flexible attributes is that a 3-in-10 loan does not require a water court change case; the State and Division Engineers can approve the use of a 3-in-10 loan quickly as long as there will be no injury to other water rights.⁴⁰ The 3-in-10 loan is ideal for use in emergency circumstances such as drought.

The CWCB may also enter into long-term leases. These leases are controlled by section 37-92-102(3), C.R.S. (2009) (“HB 1280 lease”). Although long-term leases are not new to the instream flow program, the Colorado legislature recently established protections for a lessor with the passage of House Bill 08-1280 during the 2008 legislative session. The same process used to determine whether to accept fee simple title to a water right for instream flow purposes is used to evaluate water proposed for use under an HB 1280 lease,⁴¹ in addition to a few additional considerations.⁴² For all HB 1280 leases, the CWCB must file a change of water right application or other application with the water court to obtain a decreed right to use the leased water for ISF purposes.⁴³

The general rule is that an appropriator of water for any beneficial purpose may change the place of diversion at his pleasure, provided the rights of others are not injuriously affected. . . . [This rule] is peculiarly applicable to subsequent appropriators. . . . The rights of a prior appropriator, as against a subsequent appropriator who changed the place of diversion, are already sufficiently safeguarded by the fundamental doctrine of so-called irrigation law: He who is first in time is first in right. A subsequent appropriator has a vested right, as against his senior, to insist upon the stream continuance of the conditions that existed at the time he made his appropriation[.]

Id.

³⁸ See C.R.S. § 37-83-105(2)(a) (stating that “[a] water right owner may loan water to the Colorado water conservation board for use as instream flows pursuant to a decreed instream flow water right held by the board for a period not to exceed one hundred twenty days”); see also § 37-83-105(2)(a)(IV) (stating that a 3-in-10 loan “shall not be exercised for more than three years in a ten-year period, for which only a single approval by the state engineer is required”).

³⁹ See C.R.S. § 37-83-105(2)(a) (stating that “[a] water right owner may loan water to the Colorado water conservation board for use as instream flows pursuant to a decreed instream flow water right held by the board for a period not to exceed one hundred twenty days”) (emphasis added).

⁴⁰ See C.R.S. §§ 37-83-105(2)(a)(III), -105(2)(a)(V), & -105(2)(b). The approval process requires the filing of a request for approval with Division Engineer. Written notice of the proposed loan is sent to all parties that have indicated they would like to be notified of such requests. The process includes time for the filing of a protest, and instructions for the circumstances under which Division Engineer can approve.

⁴¹ See *supra* n. 35.

⁴² C.R.S. § 37-92-102(3). To use water under an HB 1280 lease, the CWCB must maintain records of how much water the CWCB uses under the contract each year it is in effect and must install any measuring device(s) deemed necessary by the Division Engineer to administer the lease of water and to measure and record how much water flows out of the reach after use by the Board under the lease.

⁴³ *Id.*

Of the CWCB's two instream flow arrows in its proverbial quiver (appropriations and acquisitions), the acquisitions program is the less utilized.⁴⁴ There seem to be several reasons for this. Running an acquisition from start to finish is a more time-consuming process than the initiation of an appropriation. Among other time-consuming efforts, it requires identifying willing sellers in areas identified as critical stream reaches, conducting an engineering analysis to determine the utility and health of the water right for sale, conducting a title analysis, allowing for the time to negotiate and execute the acquisition, preparing for the CWCB's acceptance process, and running a water rights change application through water court. The CWCB has lacked adequate staff time to target, negotiate, and process transactions. However, although institutional capacity is a factor that contributes to the lack of acquisitions conducted by the CWCB, by far the biggest hurdle is funding. The acquisition program requires money for acquisitions which, until 2008, the CWCB did not have. Until 2008, it relied on donations.

Given the difference in use between the appropriation program and the acquisition program, the institutional and funding issues faced by the CWCB, and the utility of putting solid, senior water rights in the instream flow program, the Colorado Water Trust was formed to hammer out instream flow acquisitions for the CWCB.⁴⁵ In essence, CWT works as a broker of water rights for the CWCB. The relationship between the CWCB and CWT can broadly be described as collaborative governance. CWT relies on and works within the state's program, and the state gains benefits from the work CWT does in the form of increased acquisitions. CWT targets (or responds to offers of) water, negotiates the deals, processes the instream flow water right transactions, raises the funds, puts together an acquisition package, and then contributes the water to the instream flow program.

IV. Challenges and Opportunities in Colorado

The Western states, with unique approaches to the prior appropriation doctrine, present their own, discrete opportunities and challenges for water trusts. This section focuses on Colorado and the challenges and opportunities that affect the efficacy of a working water trust in the state.

A. Opportunities

There are a number of opportunities that are improving the ability to find and acquire water rights for instream flows. These opportunities range from legal to technical to practical to political opportunities.

⁴⁴ Since 1973, the CWCB has completed a few more than twenty water rights acquisitions, *see* <http://cwcb.state.co.us/StreamAndLake/WaterAcquisitions/>, as compared to over 1,400 appropriations. *See supra* n. 29.

⁴⁵ CWT actually has three different program areas it pursues in order to further its mission to protect and enhance streamflows in Colorado. Working in coordination with the agricultural community and other water users, governmental entities, land trusts, watershed groups and other non-profit conservation organizations, CWT pursues and supports the following program areas: (1) conducting water rights acquisitions; (2) implementing physical, structural, and management solutions to improve streamflows; and (3) providing technical support for land trusts with water issues that often arise in connection with their land conservation activities.

1. House Bill 08-1280

House Bill 08-1280 (“HB 1280”) provides two significant new protections for those who enter into long-term leases of water for instream flow purposes with the CWCB. In Colorado, a change of water right almost always requires an analysis of the historical consumptive use.⁴⁶ If a water right is not used for a consumptive purpose in a given year, it receives no credit for consumption and a zero is factored into an analysis of annual diversions for each year the water right is not used consumptively. Rather than penalizing a water user by factoring zeroes into a consumptive use analysis for the time the water right spends in the instream flow program under an instream flow lease (a non-consumptive use), HB 1280 fixes the historical consumptive use at the time the lessor *places* the water right in the instream flow program.⁴⁷ This protection removed the single biggest reason why water users were reluctant to lease water to the instream flow program.

Second, HB 1280 allays abandonment concerns.⁴⁸ Many see this as less consequential than the removal of the historical consumptive use penalty because, under an HB 1280 lease, instream flows must be added as a beneficial use in a change of water rights case in water court. Abandonment occurs only when a water user fails to use his or her water right for its decreed purpose for the statutory period.⁴⁹ With instream flow added as a beneficial use in water court, an abandonment argument would fail. Although a sleeves-from-the-vest-concession to those who requested it, this provision’s inclusion in the statute will prevent an avenue of challenge to use of a water right temporarily in the instream flow program.

The passage of HB 1280 has generated a significant amount of interest in instream flow leasing. The new protections help preserve the value of the water right for the lessor, yet still allow the CWCB to pursue terminable uses of water for instream flow purposes. The end result is greater flexibility for all, and improvement of the instream flow program. Everybody wins.

2. House Bill 09-1067

Instream flow tax credits are another new tool available to help Colorado water right holders protect the state’s streams and rivers. House Bill 09-1067 (“HB 1067”) provides a financial incentive for water right owners to donate water to the state in order to improve the long-term health of important stream reaches. For income tax years commencing on or after January 1, 2009, but prior to January 1, 2015, this bill authorizes the CWCB to award tax credit certificates to qualifying taxpayers who donate water rights. In order for the water rights to be

⁴⁶ A change of water right must be approved if it “will not injuriously affect the owner of or person entitled to use water under a vested water right or decreed conditional water right.” § 37-92-305(3)(a) (2009). A change of water rights does not cause injury if the change of water rights decree maintains the same stream conditions that existed at the time a junior appropriation commenced. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 80 (Colo. 1996). The historical use limitation reflects the hard-and-fast rule that application of water to the decreed beneficial use is required to perfect a water right. *Weibert v. Rothe Bros.*, 618 P.2d 1367, 1372 (Colo. 1980). If the amount used is less than the decreed amount, only the amount used ripens into a water right and is available to change.

⁴⁷ C.R.S. § 37-92-102(3).

⁴⁸ *Id.*

⁴⁹ See CORBRIDGE & RICE, *supra* n. 3, at 252-57.

accepted as a donation in exchange for a tax credit, the CWCB must first conduct a public review process and reach a determination that the proposed donation will preserve the environment to a reasonable degree. The passage of HB 1067 has generated interest in instream flow donations for tax credits.

3. Money: Species Conservation Trust Fund and Construction Fund Instream Flow Acquisition Funds

The 2008 legislative session secured two different pots of funds for the CWCB's instream flow acquisition program for the first time in the program's history. The first pot, contained in House Bill 08-1346 (the annual "projects bill" for the CWCB), was an appropriation from the Severance Tax Trust Fund Perpetual Base Account in the amount of \$1 million. This money is specifically earmarked for instream flow acquisitions.⁵⁰ The second, Senate Bill 08-168, allocated \$500,000 from the Species Conservation Trust Fund for instream flow acquisitions.⁵¹ This new infusion of \$1.5 million will serve as the heart of the acquisitions program and can ensure its success. With it, the CWCB's instream flow program has become a concrete option for those wanting to place their water rights in a conservation program, keep them in their local communities, and obtain compensation. The decision to allocate the requested money to instream flow acquisitions when that money could have been used in other programs, e.g., for construction projects, showed a commitment to the vitality of the instream flow program never before seen in the history of the program.

4. Changing Use of Western Lands

The changing use of land in the West is also creating opportunities for instream flow water rights acquisitions. The modern population explosion in the West reflects a sustained passion for living in this landscape at the same time it changes that very landscape.⁵² What were formerly working farms and ranches are now exurbs, suburbs, and ranchettes.⁵³ With the decline in the agricultural economy and children no longer interested in running family farm and ranch lands, one of the most common questions farmers and ranchers are now asking themselves is what to do with their land and water. A growing conservation ethic in the West has led to the increase in land conservation; water is finally catching up and becoming part of the conversation. When there is pressure on a farm or ranch to sell to developers, in Colorado, there are viable alternatives. The alternatives allow for maintaining the historical use of the land and

⁵⁰ See C.R.S. § 37-60-123.7 (2009). These funds are available to pay for the costs of acquiring water, water rights, and interests in water for instream flow use. The primary priority for expenditures of these funds shall be the costs of water right acquisitions for existing or new instream flows. They may be used in limited circumstances for the costs of water acquisitions to (1) preserve the natural environment of species that have been listed as threatened or endangered under state or federal law, or are candidate species or likely to become candidate species; (2) support wild and scenic alternative management plans; or (3) provide federal regulatory certainty. *Id.*

⁵¹ Senate Bill 08-168 was the annual appropriation to the Species Conservation Trust Fund, a fund designed to permit water development to continue by mitigating endangered species and habitat issues. The bill included \$500,000 for instream flow acquisitions.

⁵² William R. Travis et al., *Western Futures: A Look into the Patterns of Land Use and Future Development in the American West* at 3, CENTER OF THE AMERICAN WEST (Report from the Center #6, 2005).

⁵³ *Id.*

water and making some money at the same time: the placement of all or part of the land in a conservation easement, tying some or all of the water to the land through that process, or selling some or all of the water for use in the instream flow program.

5. Other Opportunities

These are only a few of the opportunities available to those conducting water transactions to improve streamflows. Others include the exemption for municipalities from the strict application of the anti-speculation doctrine.⁵⁴ The exemption allows a municipality or other water provider to obtain more water than it currently needs. This translates to a surplus that can be placed in a lease for use in the instream flow program. CWT has in fact been contacted by several municipal water suppliers about putting excess water into a HB 1280 lease. These discussions are ongoing.

In general, each opportunity is derived from an increasing conservation/green ethic that is spreading throughout the West. These opportunities have not yet translated into water flooding into Colorado's instream flow programs, but they have certainly increased the opportunities available to put together creative packages and have diversified the options for improving the state's streamflows. Still, though, there are challenges.

B. Challenges

While instream flow water right markets are emerging all over the West, they are in their relative infancy. Thus, they face several challenges, ranging from the difficulty in finding available water to lack of information to lack of standardization in negotiations.

1. Lack of Information

Lack of information is one problem common across all water markets. First of all, finding water for sale is often hard. CWT has been working on water transaction since 2001 and water is certainly available to acquire, but it has been hard to target a stream reach and find readily available water. CWT has found that the "low-hanging fruit" is the most available. For example, water rights that are close to being abandoned are offered fairly regularly. High-volume, senior water in critically water-short stream reaches is hard to find, and harder to afford.

Limited market information to assist in determining price adds to the challenge. For example, CWT is working on a transaction in which an appraisal was necessary because the parties were wildly apart on pricing. Part of the problem was the lack of comparable sales and

⁵⁴ Under the express terms of Colorado water law, an appropriation is speculative "if the purported appropriator of record does not have either a legally vested interest or a reasonable expectation of procuring such interest in the lands and facilities to be served by such appropriation *unless such appropriator is a governmental agency or an agent in fact for the persons proposed to be benefitted by such appropriation.*" See C.R.S. § 37-92-103(3)(a)(I). (emphasis added). This is sometimes called the Great and Growing Cities Doctrine.

the difficulty in extrapolating certain comparables to the transaction being pursued. The low end of the comparables for this transaction was water available by contract from a reservoir. Water can be leased from this reservoir for a renewable term for about \$110 per year per acre-foot. Assuming a thirty-year term for repayment, and an interest rate of 5.5%, the present value of annual payments for this water is approximately \$1,566 per acre-foot. In the appraisal at the other end of the spectrum was water that was acquired for \$15,000.00 per acre-foot of firm yield. When you begin talking about the amount of water we were negotiating (about 100 acre-feet), the range of pricing was from \$150,660 to \$1.5 million. Assumed in this scenario, too, is that a temporary contract for water can even be used as a comparable for an outright sale. And yet such contracts are available, are often used in lieu of outright acquisitions, and can oftentimes *be* (read: completely occupy) the market. Ultimately, markets may not yet be sufficiently developed for fair market value to be determined if the transaction so requires. This makes negotiations tricky.

2. Contract Terms: What's Fair?

Another reason water rights deals for instream flows can be challenging is that there are no set standards for the terms of the transfer. The terms are negotiated among the parties. As a result, there are limitless permutations and combinations of contract terms, some that make little difference to the transaction, and others with very real consequences. Take, for example, a deal in which the price of the sale is based on the water right prior to a water court change application, a take-it-or-leave-it proposition where the buyer bears all the risk of the change case but can also gain a benefit if more water is available to change than was initially thought. Then examine the alternative: a transaction where the price is dependent upon how much water is ultimately decreed after a change application is prosecuted. For a water trust, one of the benefits is that it looks and feels just like any other water user except that end use of the water is instream flows. Negotiations occur in the same way as negotiations from one traditional water user to another. The problem, however, is that often with a water trust, public funds are used and risk taking is not part of the model. That can complicate the process.

3. Complexity of the Transactions

As with any water right transfer, instream flow water rights acquisitions require complex analyses to determine: (1) the exact identity of the water right to be transferred, (2) title to the water right, (3) the current validity of the water right from a use perspective, (4) how the water right has been administered, and (5) possible restraints on change.⁵⁵ Unlike a more typical water rights transfer, however, an analysis of the suitability of the water right for instream flow purposes must also be conducted. If there is an existing instream flow on the reach where the acquired water is to be used, the priority date of the instream flow appropriation, the location of the instream flow reach, the amount decreed, the type of natural environment preserved, the water availability to the instream flow, whether there are multiple flow periods or a terminus at a headgate, and whether the decreed amount for the instream flow is already adequate or has been reduced from original biological recommendation based upon a water availability analysis all must be considered to determine the suitability of the acquired water. The offered water right

⁵⁵ Amy W. Beatie and Arthur R. Kleven, *The Devil in the Details: Water Rights and Title Insurance*, 7 U. DENV. WATER L. REV. 381, 383 (2004).

must also be examined for its potential use (i.e., how it will benefit the existing instream flow). Will it firm up the physical supply? Improve the existing instream flow's priority? Increase the level of protection?

Another challenge is the complexity of the process to change a water right to instream flow use. Every water acquisition for instream flow purposes must have the imprimatur of the CWCB in addition to a change of water rights decree that adds instream flow as a beneficial use or permanently changes the use of the water to instream flow. The CWCB has its own rules, required investigations, and procedures for the acceptance of a water right for instream flow. This preliminary process is time-consuming and, if pursued by an individual, could be quite costly and overwhelming.

The next step is water court. With the exception of a 3-in-10 loan, any water use, including HB 1280 leases, must go through water court. The very fact that a water right must go through water court is a significant transaction-inhibitor. Going to water court is perceived, fairly or not, as a complicated, expensive, uncertain, and even risky process. If an entire water right is the subject of a transaction, the fact that it must go through water court may not matter so much. But in the case of partial rights, the entire water right is opened to scrutiny and a standard is set for future changes of the balance of the water right retained by the seller. A number of deals CWT has spent time negotiating have been unsuccessful once the interested seller learned that water court would be part of the process. The risk of water court scrutiny in addition to the cost of water court can complicate the process of convincing a possible seller to part with his or her water rights.

4. Dry-up

In Colorado, as previously explained, a change of water rights cannot injure other water users. One way to prevent injury is to distill the water right to its historical consumptive use and allow only the historical consumptive use to be changed. That way, a water user cannot expand his or her previous use to the detriment of other water users in the system. Typically, with irrigation rights, a change of water right will require the dry-up of irrigated land. CWT has found that many people do not understand this concept. They believe that their flow rate will form the basis of a transaction.

Take, for example, the following scenario recently encountered by CWT. In the fall of 2007, CWT was contacted by a watershed advocate about talking to a family that was interested in selling one of their water rights. The water right for sale was decreed to a senior priority ditch that diverts from a severely water-short section of river on the Western slope of Colorado. The initial idea was that the landowners would sell half of the 9.6 c.f.s. water right to us. They irrigated about 260 acres with the water right and the 9.6 c.f.s. was far more water than they could use on the land the particular ditch services. Therein was the problem. The sellers were under the impression that they could sell 4.8 c.f.s. to CWT and not change their irrigation practices at all. CWT had a very difficult time explaining the no-injury rule to them, including why dry-up was necessary. In the end, they did not want to conduct the transaction.

5. Overcoming the Mythology

Part of the problem is a mythology about water rights that people have come to believe, a mythology that is the result of a synergistic effect of two separate beliefs: (1) that a water user can get something for nothing (in the transaction above, obtaining money for selling a water right that would not affect one acre of historical practices); and (2) that a water right is *the* most valuable asset a person owns. That may be true if the water is used in a way that maximizes the historical consumptive use, is very senior, and is in a local market that justifies a high price tag, but it is not so for every locality or every right. The process of disabusing people of the notion, long-held in the family, that their great-great-grandfather's 9.6 c.f.s. water right is worth millions of dollars can be hard, especially when one is the opposing party to a transaction.

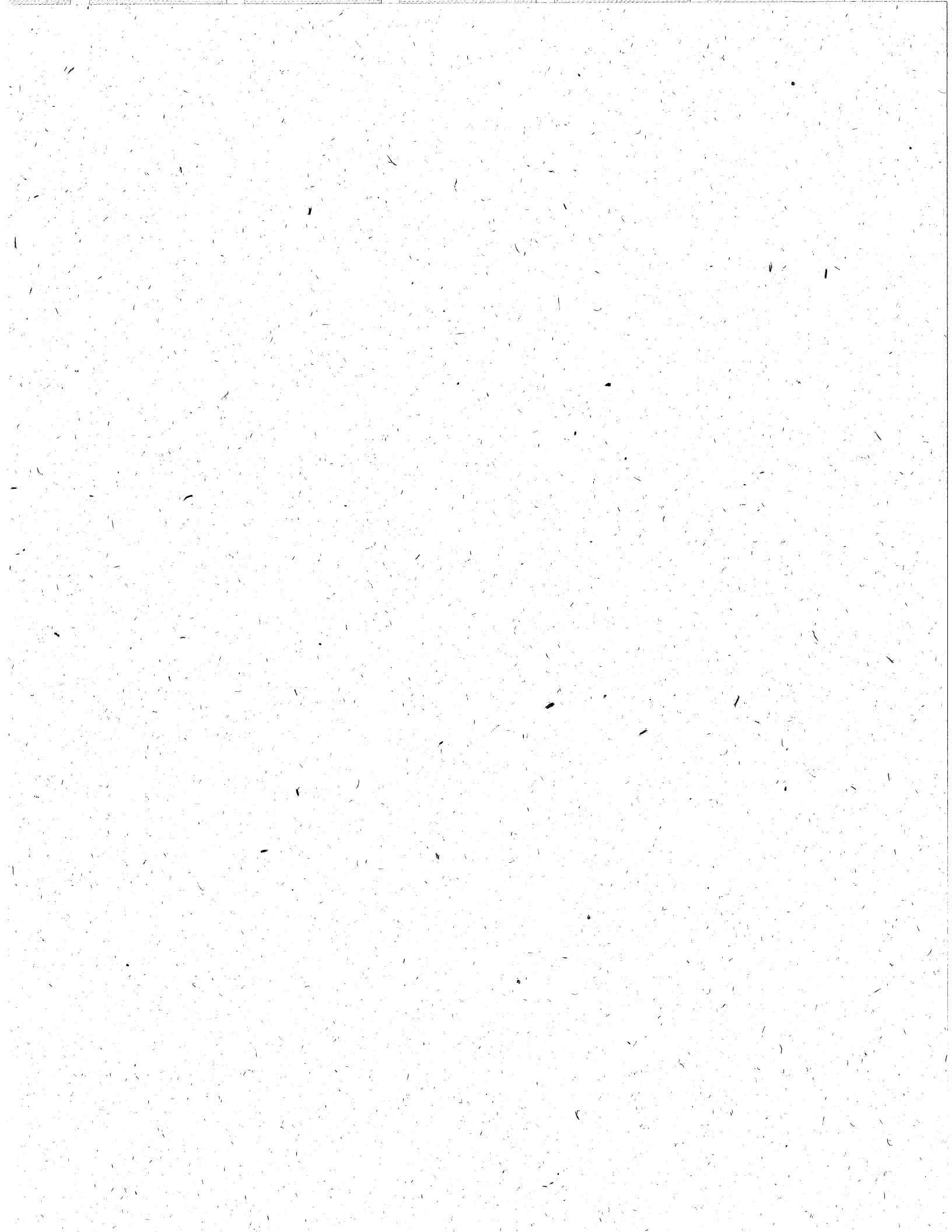
6. Other Challenges

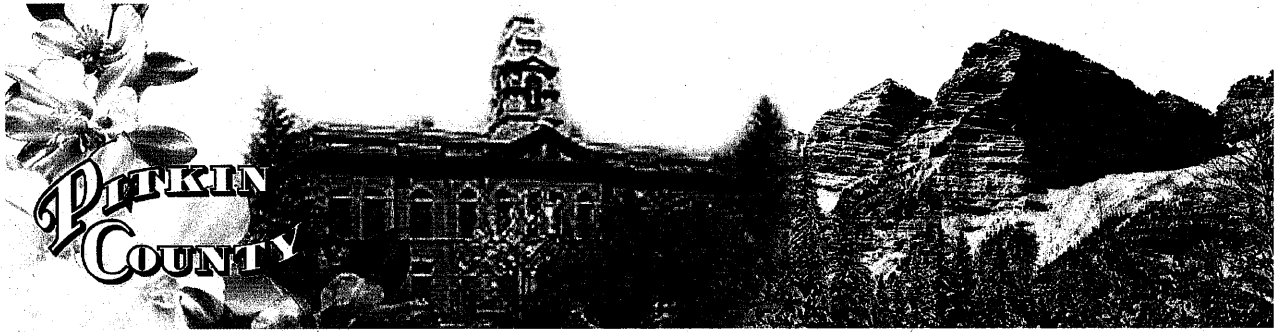
These are only some of the challenges faced by those who conduct water transactions to improve streamflows. Others include the difficulty in convincing the seller to obtain a lawyer to help with the transaction if it looks as though it will be complicated or if the seller is having trouble understanding the consequences of the deal; financing transactions; financing an organization's day-to-day operations; and the time and resources involved in investigating every lead.

V. Conclusion

Notwithstanding the obstacles and challenges facing the development of an instream flow water market, you now have information to share with your water clients about new options available for diversifying and maximizing the use of their water portfolios: selling or leasing water for instream flows. These options, while functioning clearly within the prior appropriation system, have the added benefits of: (1) improving local watersheds; (2) keeping water in local communities and within families; (3) maximizing the use of valuable, senior water rights; (4) allowing adaptation to changing circumstances; and (5) in many cases, generating additional income for water users.

Some may believe that the idea that water trusts are satisfied with the prior appropriation system is an overstatement. Perhaps water trusts are simply operating within the existing system—within the “constants” of Western water law—because it is practical and effective even if not ideal. There may also be those who believe that the water trust movement can be a powerful part of the solution to balance the playing field, that it can “be the change.” Whatever a person's beliefs, water transactions to improve streamflows are likely to neither solve all of the West's streamflow problems nor fit the needs of every water user. But, as economically rational, equitable, environmentally sound, and sustainable as instream flow water transactions are, they represent a step—and a pretty good one—in the right direction.





PUBLIC NOTICE
REQUEST FOR PROPOSALS

REQUEST FOR PROPOSALS TO PROVIDE:

The preparation of a study describing the economic benefits of recreational and tourism activity in the Frying Pan River Valley to host communities within the Roaring Fork Valley.

Contract # # 96-2010

A consultant to prepare a study describing the economic benefits of recreational and tourism activity, including but limited to fishing, in the Frying Pan River Valley to host communities within the Roaring Fork Valley.

Such a study should account for the economic benefits experienced in all sectors of the local economy, including an examination of real property values, as a proximate result of healthy river flows in the Frying Pan River Valley. The number of years examined can be limited but should include at least one optimal (non-drought) year.

The study should separately address the number of jobs associated with, and activity days generated by, recreation and tourism in the Frying Pan River and its tributaries. The estimate should address the time and costs associated with the preparation of the study.

John Ely
Pitkin County Attorney
530 E. Main Street, Suite 302
Aspen, CO 81611
(970) 920-5190

Proposals must be received at the above address no later than **2:00 P.M. MST, on May 28, 2010** to be considered.

Published in the Aspen Daily News.

REQUEST FOR PROPOSALS

The preparation of a study describing the economic benefits of recreational and tourism activity in the Frying Pan River Valley to host communities within the Roaring Fork Valley.

**Board of County Commissioners
Pitkin County, Colorado
530 E. Main Street, Suite 302
Aspen, CO 81611**

Contract # 96-2010

INTRODUCTION

Pitkin County is attempting to quantify the economic benefits generated by a healthy Frying Pan River. A cursory analysis reveals that fishing activities generate income and sales tax for citizens and communities in and near the Frying Pan River Valley, and this fact cannot be discounted, however, the Frying Pan River Valley represents more than a fishery resource.

The Frying Pan River is, and has been classified as a Gold Medal Fishery by the Colorado Division of Wildlife for many years and indeed the fishery enjoys a world wide reputation and attracts visitors from around the globe annually.

The fishery is only one reason visitors come to the Frying Pan Valley and residents have invested in it. The Frying Pan Valley attracts a number of different recreationalists and in fact, the positive affects created by the river flows in the Frying Pan River extend downstream into the Roaring Fork Valley until those flows become part of larger Roaring Fork River system.

Likewise, sales tax revenues and a thriving community of small businesses are only two economic indicators related to a healthy river. Many economic sectors are affected by a healthy river, with perhaps the most dramatically noticeable economic benefit realized in increased real property values that are also attributable to a healthy river flow.

Increased growth and demands upon the river for a variety of needs as well as decreased flows occasioned by climate change threaten the river and the economies that depend on its regular, natural flows.

I. SCOPE OF WORK

Pitkin County is seeking qualified individuals or firms to assist in conducting an analysis of economic benefits generated by a healthy frying pan river and its associated stream flows and mountain environment. This analysis should consider all economic sectors from fishing, recreation and tourism, to a viable larger retail sector consequenced by the number of people and visitors drawn to the valley for reasons other than tourism and recreation, as well as the affect of a healthy river on real property values that are a result of the present condition of the Frying Pan River.

The studies conclusions should be such that the economic benefits identified and associated to the river could be said that but for a healthy river environment, these economies or economic benefits would not be present.

Other mountain communities with less healthy river environments may be examined and contrasted to the Frying Pan River.

Communities along the Frying Pan River should be considered but also those areas within the Roaring Fork Valley that experience a positive economic affect to due to Frying Pan River should also be examined.

The quantifications and conclusions of the study should be sufficient to allow for a reliable extrapolation of results or consequences should the flows in the river diminish or are altered beyond a normal hydrology based upon past flow experiences.

To accomplish this analysis real data for a number of years should be examined and should include the experiences of at least one drought year and at least one average or above average stream flow year.

II. QUALIFICATIONS

- ❖ Demonstrated experience designing and constructing similar economic studies
- ❖ Experience in working with local governments and local residents in obtaining consensus on design issues.
- ❖ Ability to meet schedules and provide deliverables as required within time and budgetary constraints.

III. SUPERVISION The selected designer(s) will work under the direct supervision of the County Attorney.

IV. SELECTION PROCESS

A. Submittals

1. Proposer shall submit an **original** and **three (3)** copies of their proposals for this project as outlined in the Request for Proposals and Scope of Services, or an alternately developed plan as developed by Proposer in response to and in accordance with this Request for Proposals and Information to Proposers attached hereto. The format for such proposals shall be as follows:

a. The proposal must contain name, address, and daytime phone number(s) for person(s) to whom additional selection process requests should be communicated;

b. A proposed approach (basic description of how Proposer will proceed with this project), time-table for the project, and proposed method of compensation for services rendered;

c. A statement of Qualifications of the Proposer;

- d. Professional References;
 - e. Project development strategy and work plan;
 - f. List of pertinent benchmarks and a proposed schedule for completing project.
 - g. Summary of local, state and federal land use and environmental permits required to complete the project.
 - h. Examples of work on similar projects.
 - i. Demonstration of adequate errors and omissions insurance in the amount of \$1,000,000.00.
2. Proposer may be required to supply additional information upon request, or to make additional submissions under secondary selection criteria, if necessary.
3. All Proposals shall be sent, and any and all questions or comments directed to the Procurement Officer as follows:

John Ely
Pitkin County Attorney
530 E. Main Street, Suite 302
Aspen, CO 81611
(970) 920-5190
John.Ely@co.pitkin.co.us

4. All proposals must be in a sealed envelope and clearly marked in the lower left-hand corner: **Proposal for Frying Pan River Valley Economic Study**

All proposals must be received by May 28, 2010 no later than 2:00 P.M. MST 530 E. Main Street, Suite 302, Aspen, CO 81611 at which time they will be publicly opened. The County will not accept facsimile (faxed) proposals unless such a proposal is delivered as follows:

If a proposal or part of a proposal is to be delivered to the above address via a facsimile transmission (fax machine), it will be the responsibility of the Proposer to provide personnel to insure that the fax transmission is delivered in the required sealed envelope directly to the Procurement Officer by or before the date and time of proposal opening. The Procurement Officer or other staff members will not be responsible for insuring this timely delivery. In the event of such fax transmission, the Proposer will be additionally responsible for providing an original, signed copy of the document transmitted to the Office of the Procurement Officer no later than two (2) working days after the date of

Procurement Officer no later than two (2) working days after the date of transmission, and for the production of the required set of three (3) copies.

5. During the Request for Proposal selection process, all proposals shall remain confidential. The entire selection process (procurement) file shall be opened to the public (which includes all proposers) after an agreement is approved by the County, except those items for which confidentiality has been requested in writing by the Proposer, and providing that the County Attorney has reviewed and determined this to be the properly confidential under the State Open Records Act and other relevant statutes and regulations.

V. RESPONSE TO QUESTIONS Questions that arise during the response preparation period regarding this solicitation should be directed in writing via e- mail, FAX or U.S. Mail to John Ely, Pitkin County Attorney's Office, 530 E. Main Street, Suite 302, Aspen, CO 81611, FAX (970)920-5198, or John.Ely@co.pitkin.co.us. All questions shall be received by May _____ 2010 at 5 pm MST.

VI. EVALUATION CRITERIA

- A. **Approach to Project 20%**
The Proposer shall prepare a brief statement as to how he intends to handle:
- ❖ the Project;
 - ❖ the Project schedule;
 - ❖ the personnel assignments, including qualifications and experience of those personnel;
 - ❖ the time estimates of personnel assigned to the Project; and
 - ❖ other pertinent facts
- B. **List of Similar Work 20%**
The Proposer shall submit examples of work with governmental agencies and work of similar size and type.
- C. **Availability 20%**
The Proposer shall affirmatively state that all necessary staff is available to complete the Project within the time indicated on the proposed schedule.
- D. **Estimated Cost of Services, including Reimbursables 20%** –
List of Reimbursables should be submitted with a top-set
- i. The Proposer shall list all costs assumed necessary to provide a completed product, including costs of sub-consultants, reimbursables, and miscellaneous.
 - ii. The Proposer shall provide a list of standard hourly rates for personnel necessary to complete the Project.

- E. **References 20%** : the Proposer shall provide a list, including contact name and information, of References, prior clients, especially, Local, State, and Federal Government

VII. TIME LINE

The County will endeavor to use the following timetable:

May 28, 2010 2:00 pm MST Submittals returned to the County.

May 15, 2010 5:00 pm MST Questions from Proposers received by

The selection committee meets to review and evaluate proposals; requests additional information if necessary; checking of references.

Set interviews with short-list proposers if necessary.

Announce top-ranked proposer.

Begin contract negotiations.

Communications between proposers and any members of the selection committee during the selection process, except when and in the manner expressly authorized by the proposal documents, is strictly prohibited. Violation of this requirement is grounds for disqualification from the process.

VIII. MISCELLANEOUS

A. The entire selection process (procurement) file shall be open to the public after the contract is approved, except as to the those items for which confidentiality has been requested in writing by the proposers and has been reviewed and determined by the County Attorney to be properly confidential under the State Open Records Act and other relevant statutes and regulations.

B. All proposal documents submitted and not withdrawn prior to the public opening shall become the property of the County and may, thereafter, be used by the County without compensation to the proposer for any lawful purpose.



Memorandum

TO: RWAPA Board
FROM: Mark Fuller
RE: Invasive Species Inspection Program
Date: October 20, 2009

This is to respond to your request made at the last RWAPA meeting to provide you with some cost estimates for an invasive species inspection program at Ruedi. These estimates have been prepared by Elizabeth Brown, Invasive Species Coordinator for the DOW. The background material prepared by Elizabeth is attached for your reference. Elizabeth has provided a range of costs based on the size of the program. That range is as follows:

Minimum Program

(1-2 people at one ramp, May 15 – October 15,
16 hrs/day, assume grant to cover some
equipment costs)
STAFF- \$40,000
EQUIPMENT - \$10,000
TOTAL - \$50,000

Maximum Program

(2 people @ two ramps, same dates
& hours, assume no grant support)
STAFF - \$150,000
EQUIPMENT - \$20,000
TOTAL - \$170,000

The cost of the minimum program could be reduced if, for instance, hours of operation were limited to 12 hours/day and dates were limited to weekends only. A "bare bones" program that staffed the main boat ramp with 1-2 people from 8 AM – 8 PM on weekends only would have a cost of approximately \$12,000 for staff and an equipment cost of \$10,000 for a total of \$22,000.

If the eight members of RWAPA contributed equally to a program such as those outlined above, the cost per member would range from \$2,750 for the "bare bones" program to \$21,250 for the Maximum program. If other agencies, businesses, etc, were brought in as funding partners, these contributions could conceivably be cut by 25 - 30%. Based on these very rough estimates, I would propose that we could put together a "bare bones" program with a contribution of \$2,000 from each of the RWAPA members plus contributions from other supporters including possibly the River District, the Basalt Water Conservancy District, the Roaring Fork Conservancy, the Aspen Yacht Club, Trout Unlimited, local fishing outfitters and guides, local rafting companies and private individuals. If we got \$16,000 from RWAPA members and \$500-\$1,000 from the other entities listed above we could reasonably expect to raise \$22,000 for a starter program. I hope this is timely in terms of your various budget processes. Please let me know if I should be forwarding this summary to specific staff people or if you would like further information.

MEMORANDUM

To: Mark Fuller, Ruedi Water and Power

From: Elizabeth Brown, Invasive Species Coordinator

Date: October 17, 2009

Regarding: Cost Estimate for Ruedi Reservoir Zebra/Quagga Mussel Boat Inspection Program

Per your request, below is a summary of estimated costs for implementing a watercraft inspection and decontamination (WID) program at Ruedi Reservoir. The estimate is based on the criteria described in the Ruedi Reservoir Zebra/Quagga Mussel Management Plan (Draft – October 16, 2009). The figures below are simply estimates and are in no way a guarantee of costs, which will vary depending on the entity that chooses to manage and oversee the inspection program, in addition to the operational plan of the station. Expenditures listed below are based on existing WID programs at comparable reservoirs to Ruedi in Colorado.

WID STATION EXPENDITURES:

I. Staffing:

Assuming that the WID station opens on May 15, 2010 and closes on October 15, 2010, and is open 7 days a week from 6am-10pm (16 hours a day), 3 staff members are needed to staff the 112 hour work week. In total, over the 22 week season, the station would be open 2464 hours. Assuming a pay rate that is comparable to the CDOW Tech I base rate of \$13.505/hour, and including 12.45% in overhead, the budgeted hourly rate needed is \$15.19/hour.

The staffing cost of having 1 person at 1 ramp, based on the above parameters and schedule, is \$37,428.16. The staffing cost of having 2 people at 1 ramp, based on the above parameters and schedule, is \$74,856.32.

Similarly, the staffing cost of having 1 person at 2 ramps, based on the above parameters and schedule, is \$74,856.32. The staffing cost of having 2 people at 2 ramps, based on the above parameters and schedule, is \$149,712.64.

Alternate budgets, such as the bid provided by Colorado Watercraft Inspectors on June 17, 2009 documented the staffing costs for 1 person at 1 ramp from June – October to be approximately \$44,000.00. The Ruedi Mussel Management Plan documents a cost of approximately \$120,000 for USFS to staff an inspection station at 1 ramp.

The range of cost for staffing an inspection station is between \$37,000 and \$150,000 depending on length of program, hours of operation, numbers of ramps and staffing density.

II. Equipment and Supplies:

The following items are needed to staff an inspection and decontamination station:

1. Supplies as listed on page 14 of the State ANS Inspection Handbook = \$1500.00
2. Shelter (i.e. Tough Shed) and chairs = \$3000.00
3. Decontamination Unit = \$12,500.00 (average cost)
 - a. A cost-share opportunity for purchasing a decontamination unit exists by obtaining a grant from the Motorboat Colorado Grant Program with CDOW.
 - b. A water source will need to be identified for the decontamination unit.
 - c. Most decontamination units are gas powered so an electrical source is not needed.
 - d. Secure storage for decontamination unit will need to be identified. In many cases, the inspector shelter serves as overnight secure storage for the decontamination unit.
4. Signage = \$500.00
 - a. Standard boat ramp and "inspection ahead" signs will be provided by CDOW, but any site specific signs for directions or rule posting should be budgeted for.
5. Brochures and Forms = \$0 (Provided by CDOW)
6. Average Operating Budget = \$2000
7. Vehicles and Mileage = optional, not included in totals

The range of cost for equipment and supplies for a WID station is between \$10,125 and \$19,500 pending the application and approval of a Motorboat Colorado Grant for a portion of the decontamination unit cost.

III. Conclusion

The cost of a watercraft inspection and decontamination station to prevent the introduction of invasive zebra and quagga mussels will range in costs depending on the operational plan for the station. Based on Sections I and II above, the low end cost for staffing and equipment total approximately \$47,553.16, while the high end cost for staffing and equipment total approximately \$169,212.64.

Based on the recommendations in the Ruedi Mussel Management Plan, which outline staffing 1 ramp utilizing 1-2 people per shift, and the future application and approval of a Motorboat Colorado Grant for a decontamination unit, the cost of implementing a preventative WID station at Ruedi should be approximately \$50,000.00.

June 17, 2009

Colorado Division of Wildlife
6060 Broadway
Denver, CO
Attn: Elizabeth Brown Invasive Species Coordinator

RE: WID Inspections at Ruedi

Elizabeth,

Thank you for this opportunity to be of service in this most important effort. CWI is committed to do all we can thru prevention and education to halt the spread of Zebra and Quagga Mussels in Colorado, as I know you are aware. Following is a brief outline of costs associated with CWI setting up and maintaining a WID location on the West ramp of Ruedi as outlined in the management plan provided to us. Knowing that this is new to everyone please note that nothing is written in stone and we are open to negotiations.

Station would be manned by a single person 7 days per week from 6:45 a.m. to 7:45 p.m. Monday thru Sunday starting July 1st and ending October 2nd. This equals approximately 14 weeks totaling 1,274 man hours. CWI would provide all stage 1 training for employees and would provide an on-site or on call stage 2 inspector during all operation times. Our prices also include a state of the art decontamination unit on site at all times that all employees are trained to properly use.

Our cost for the 14 week schedule in 2009 is \$44,000. This represents a savings of \$19,700 from the USFS estimated costs listed in the plan. We would need two weeks notice to proceed as well as an area to place a RV to work from and a water source for decontaminations. We would break the bid amount into three installments with the first invoice originating after operations are up and running.

Again, I thank you for the opportunity to be of service in this effort. I am confident that you will be satisfied with our level of customer service in your unique location, and also our commitment to preventing these invasive species from entering your waters.

Regards,

Mark C. Wright
President
Colorado Watercraft Inspectors, Inc.

INVASIVE ZEBRA & QUAGGA MUSSEL MANAGEMENT PLAN

Ruedi Reservoir

Fryingpan - Arkansas Project, Colorado



DRAFT- Revised October 16, 2009

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INTRODUCTION

Zebra and quagga mussels (mussels) are an aquatic nuisance species that were first confirmed in Colorado in January 2008. They have since spread to other reservoirs in various watersheds in the state by hitchhiking on recreational watercraft. The mussels have severe negative impacts on natural resources, fisheries, recreation, economics and water distribution infrastructure for municipal, industrial and agricultural supply.

The purpose of this site-specific management plan is to outline a strategy to prevent an introduction of mussels. If mussels were to be introduced into Ruedi Reservoir in the future, this plan outlines the containment strategy for the potential future infestation of mussels into Ruedi Reservoir. It is being developed as part of a larger state-wide and national effort to take action against the further spread of mussels.

Recognizing that no one entity is solely responsible or has complete resources to implement prevention and containment management strategies, a stakeholder group has come together to develop recommendations for management and coordinate responsibilities as documented in this plan. In order to implement the actions identified, execution of separate agreements between parties may be needed to transfer funds, services, or property.

At the time of plan completion, funding sources to implement all components of this plan have not yet been identified. Implementation of actions and responsibilities outlined in this plan are solely dependent on funding.

STAKEHOLDERS

The following parties have pertinent ownership, management, or jurisdictional responsibility relative to Ruedi Reservoir.

U.S. Bureau of Reclamation (Reclamation)

Reclamation owns and operates Ruedi Reservoir and associated carriage features as part of the Fryingpan-Arkansas (Fry-Ark) Project.

U.S. Forest Service (USFS)

The Aspen/Sopris Ranger District of the USDA White River National Forest, headquartered in Glenwood Springs, CO, manages the public recreation surrounding Ruedi Reservoir annually, including the boating season from May through October. Little to no on-the-ground management occurs on site during the winter months. National Forest System lands surround Ruedi Reservoir on all sides.

Colorado Division of Wildlife (CDOW)

The mission of CDOW is to protect and manage wildlife and their habitat; and provide the opportunity for wildlife recreation in Colorado. CDOW coordinates the State ANS Program, which includes the statewide zebra and quagga mussel plan implementation.

Aspen Yacht Club (AYC)

AYC is a 39 year old private sailing club, with approximately 65 members, located on Ruedi Reservoir. The USFS permits the AYC to occupy Benedict Bay, a small scenic cove in the middle of the 3 mile long reservoir on a 15 acre property. Their mission is to promote the development of sailing and to promote and regulate class sailboat racing under uniform rules and in the spirit of good sportsmanship. The Annual AYC Regatta will be held on July 18-19, 2009 and will bring in 50+ boats from other states for two days of racing. Weekly races begin May 7, 2009 and are held every Sunday through September 27, 2009. The Club Regatta is held on August 15, 2009.

Ruedi Water and Power Authority

Local quasi-governmental association made up of representatives from the Municipal and County governments in the Roaring Fork Valley. The Authority acts as an information-sharing and management entity for issues and projects related to Ruedi Reservoir and local water resources.

Southeastern Colorado Water Conservancy District (SECWCD)

SECWCD is a raw water purveyor in the Arkansas River Basin and is responsible for the agricultural, municipal, and industrial components of the Fryngpan-Arkansas Project (Fry-Ark). The Fry-Ark Project utilizes a west slope collection system (not including Ruedi Reservoir) to divert water to the Arkansas River Basin. Ruedi was built as required mitigation for the west slope water users as part of the Fry-Ark Project. SECWCD does not divert any water from Ruedi Reservoir.

Colorado River Water Conservation District

The Colorado River Water Conservation District is concerned with conservation, use and development of the water resources of the Colorado River and its principal tributaries.

Eagle & Pitkin Counties

The physical location of the approximate north/south center of the Reservoir is bisected by the Eagle/Pitkin County line.

Permitted Concessionaire

A private concessionaire holds a permit to operate and maintain campgrounds and day use sites around the reservoir. In return for management of the sites, they collect and retain camping and day use fees charged to the public for recreational use at Ruedi Reservoir.

DESCRIPTION OF RUEDI RESERVOIR

Ruedi Dam is on the Fryingpan River about 15 miles east of Basalt, Colorado. It creates a reservoir with a total capacity of 102,373 acre-feet and approximately 1,000 acres in area. Ruedi is a rock and earth fill structure that stands about 285 feet high above streambed, has a crest length of 1,042 feet, and contains approximately 3,745,200 cubic yards of material. Ruedi Dam and Ruedi Reservoir provide storage for replacement and regulation of approximately 100,000 acre-feet of water for the western slope users (Figure 2). This water is used for irrigation, municipal benefits, recreation, and fish and wildlife enhancement.

Recreation facilities consist of 4 campgrounds accommodating 81 campsites, 3 designated day use areas and 2 public, and 1 private boat-launching ramps. Surface available for recreation includes 997 acres. Primary recreation activities include camping, motorized boating, sailing, and fishing. Game fish species available include rainbow trout, brown trout, and mackinaw trout. Facilities are closed in winter due to ice and snow, but ice fishing and snowmobiling occur throughout the winter months. Additionally, the land under the reservoir surface is managed by the USFS and is defined by an undulating landline (take line) that follows above the maximum water surface elevation (7,781.8 ft) in varying distances. The USFS allows public reservoir access for camping and day use in the spring and as the waters retreat in late summer.

Boating occurs when there is open water. The west boat ramp is opened and managed by a USFS concessionaire from spring through fall. However, boats can launch into the reservoir when the ramp is "closed". Highest use months are during the summer, June – August, and the majority of boats are on the water during the weekends. Furthermore, the Aspen Yacht Club hosts regattas that attract sailboats from multiple states. Fishing occurs year-round from the shore, boats, and on the ice.

Ruedi has two developed boat ramps (1) West Boat Ramp adjacent to most of the USFS campgrounds at the reservoir and (2) Aspen Yacht Club Boat Ramp. The West Boat Ramp is open to the public, while the Aspen Yacht Club Boat Ramp is a private ramp for use by the 65 members of the club and those participating in races or Regattas. Ruedi also has one primitive boat ramp, the East Boat Ramp located adjacent to Dearhamer Campground, which is open to the public. The East Boat Ramp is a gravel ramp that accommodates small watercraft. However, it is only usable when the reservoir is at full pool from late June through mid-September.

The following area campgrounds collect fees for over-night camping under the Federal Lands Recreation Enhancement Act of 2004: Little Mattie, Little Maud, Mollie B & Ruedi Marina. Additional fees are collected for day-use, boat storage, and season pass boat fees. Day-use is not limited to watercraft or boat ramp users.

RECOMMENDED MANAGEMENT ACTIONS

Education and Outreach

Reclamation drafted the Fry-Ark Project Public Information Outreach Plan (2008), which will be updated by Reclamation periodically with input from the stakeholders group. The plan focuses on key messages and talking points that can be used by all stakeholders when dealing with the public. It is important for all partners to deliver a unified message.

CDOW provided boat ramp signs in 2008 for the West Boat Ramp and the Aspen Yacht Club. In 2009, a sign will be posted at the East Boat Ramp also. These signs will alert the public to the impacts of mussels and instruct them to Clean, Drain and Dry their boats and equipment in between waters. If a WID program is established, additional signs directing the public to inspection areas, and signs notifying boaters of new shoreline launch restrictions should be posted. USFS is responsible for posting signage at the Reservoir.

Brochures and rack cards should be available at the reservoir for distribution. It is recommended that an educational kiosk be placed at the West Boat Ramp allowing a visible location to store brochures and rack cards and to highlight educational displays. All stakeholders should refer interested individuals and groups to the *Don't Move A Mussel* video available on CDOW's website

(<http://wildlife.state.co.us/WildlifeSpecies/Profiles/InvasiveSpecies/ZebraandQuaggaMussels.htm>).

USFS will brief local government officials and their constituents, particularly boaters and anglers, on the mussel issue and the need for their active participation in prevention.

Face to face conversation is always the best way to educate the public, including reservoir users, to the potential impacts of mussels in Colorado. It is very important that our boaters and anglers know they need to inspect, clean, drain, and dry their own boats and equipment in between uses. If every owner takes responsibility for their own vessel and equipment, the spread of ANS in Colorado can be slowed or even stopped. All stakeholders should pass this message on as opportunities present themselves.

The Aspen Yacht Club has a unique opportunity to effectively communicate the *Clean, Drain, Dry* message to their members and other visitors using Ruedi Reservoir. The club should remain well stocked with brochures, rack cards and signage. They can encourage sailors to be part of the solution by ensuring their vessels are cleaned and dry before entering Ruedi Reservoir.

Sampling and Monitoring

The CDOW coordinates the statewide sampling and monitoring efforts for aquatic nuisance species, including zebra and quagga mussels. CDOW will continue to sample Ruedi Reservoir as part of the larger statewide sampling effort. Reclamation is part of the microscopy confirmation team for mussels in Colorado and will continue to monitor the infrastructure for adult mussels. State standard protocols, per adoption on February 20, 2009 in the State ANS Regulations (as recommended by the Blue Ribbon Panel, Western Regional Panel and 100th Meridian Initiative) will be utilized. If mussels are verified to be present (State ANS Regulations require one positive microscopy and one positive PCR test to declare a

water positive for mussels), monitoring of the mussel population and water quality of reservoir/lake may be continued.

The State ANS Regulations require all persons conducting sampling for aquatic nuisance species, including zebra and quagga mussels, to be permitted by CDOW. Due to the prohibited nature of ANS, the CDOW Special Collections Permit for wildlife species collection does not apply. Any entity intending to conduct sampling for aquatic nuisance species must request a permit in writing. Only the Director of the Division of Wildlife can approve the permit request. The CDOW and Reclamation's Technical Services Center co-teach a sampling and monitoring training school in the spring for persons intending to apply for an ANS collection permit.

Facility Assessment

Reclamation plans to complete a facility assessment of Ruedi Reservoir by the end of calendar year 2009. The assessments will identify areas of risk to the water infrastructure, and will provide recommendations for future actions to be taken to better prepare for and deal with mussels relative to the infrastructure should they infest Ruedi Reservoir. The recommended actions may include modifications to structures and control methods such as reoperation of the reservoir. The report will be distributed to the stakeholder group upon completion. The water users may be able to apply the recommendations to their facilities.

Preventative Watercraft Inspection and Decontamination (WID) Program

Ruedi Reservoir is considered a medium risk for mussel introduction based on a risk assessment done by CDOW (June 2008). This is supported by the collective agreement of the stakeholders group. According to the Statewide Zebra and Quagga Mussel Management Plan, it is not mandatory for all trailered watercraft to be inspected prior to entering medium risk waters, although it is strongly recommended.

The State ANS Regulations **do** require all boats coming from out of state to be inspected prior to launching on any waters of the state. Any vessel coming to Ruedi from out of state must be inspected prior to launch. Boaters can get inspected at a variety of locations statewide, and should be referred to the CDOW website for a listing of certified locations and hours of operation.

In the absence of a permanent WID station at the Reservoir, CDOW's roving patrols will staff a temporary WID on a few random dates throughout the season to reinforce compliance with the Clean, Drain and Dry rules and to educate boaters recreating at Ruedi Reservoir.

The state regulations enable private companies and clubs to become certified in watercraft inspection and decontamination and operate Authorized Locations. Members of the Aspen Yacht Club were certified by CDOW to do inspections and decontaminations on June 29-30, 2009. AYC is conducting inspections as a service for their members and participants in the weekly races, the Annual Regatta and the Club Regatta. Sailboats and other complex vessels, especially those that travel from water to water, and those coming from out of state, pose the highest risk of introducing invasive mussels to Ruedi.

The CDOW Roving Patrol helps inspect boats prior to the Regattas, since many will be from out of state. In the future, a date/time/location should be predetermined for all boats entering the Regatta to get inspected and green sealed prior to entering Ruedi. Participants should be notified of this mandatory inspection when they register for the Regatta. At any other time, vessels coming from out of state should

be denied launch and sent to an Authorized Location for inspection and green seal prior to launching in Ruedi.

The state regulations require all persons performing watercraft inspection and decontamination in Colorado to successfully complete a certification course taught by the CDOW. The state certification enables an individual (regardless of employment jurisdiction: federal, state or local governments, non-governmental organizations or private industry) to operate a WID location and qualifies the individual as an "authorized agent" under the State ANS Law. Certified authorized agents have the authority to inspect, recommend decontamination, perform decontamination and detain boats for decontamination. If a boater is non-compliant, the authorized agent is required to call law enforcement (any state qualified peace officer, including CDOW Wildlife Manager, State Parks Ranger, County Sheriff, City Police or State Patrol) to order the decontamination or impound the watercraft.

Containment Watercraft Inspection and Decontamination (WID) Program

If, in the future, mussels are detected in Ruedi Reservoir, containment will be mandatory, as stipulated in the State ANS Regulations. All trailered watercraft leaving Ruedi will have to be inspected prior to exit. According to the state inspection protocol, infested reservoirs must give boats a date time stamp card on the way into the reservoir. Boats will still be inspected upon entry. There needs to be a clear "entrance" point to the reservoir for this to occur. Upon exit, boaters will go through inspection station and depending on how long they were on the Reservoir; they will receive an inspection and possible decontamination on the way out. Boats must be clean, drained and dried following use in any water, but especially infested waters. Ramps will need to be closed when inspectors are not available or outside operational hours.

The West Boat Ramp is the preferred location for the WID station due to its high use and large overflow parking lot. If funding is not available to have WID at both public ramps, the East Ramp may have to be closed to prevent use by watercraft avoiding the inspection station. WID sites may need to be evaluated for redirecting parking and overall travel management. Decontamination station will need to be located high and dry away from the water and on a semi-permeable surface such as dirt or gravel.

If Ruedi is found to be positive for mussels, and there is no funding for containment WID, an alternative is to close the boat ramps to trailered watercraft and only allow hand launch vessels at Ruedi. Closures need to have physical barriers and signage. Closure of the west ramp would require significant investment in some sort of concrete jersey barrier wall and gate system. Closure on the east end would require installation of a permanent gate. Since boats often stay overnight on the reservoir, a plan for evacuation would be required in case of emergency when the ramp access is locked at night. The Aspen Yacht Club Boat Ramp would only be closed through administration of the permit since there is no public access. Closure of the Aspen Yacht Club Boat Ramp is not necessary assuming AYC maintains their state certification to inspect their member's and Regatta participant's vessels. All closures require a Forest Supervisor's Order and funding for enforcement.

Table 1. Estimate of costs for USFS to staff 1 boat ramp (West) at Ruedi Reservoir,

Items	Annual Cost
Salaries for 4 ramp attendants.	\$92,507.84
Salaries for GS-06 and GS-09	\$ 5,760.00
Holiday pay for 3 X 4 ppl/holiday	\$ 1,508.28
Annual leave @ 4 hrs./employee/pay period	\$ 3,267.94
Sick leave @ 2days/employee/yr	\$ 1,005.52
Sick leave replacement staff	\$ 1,005.52
Annual leave replacement staff	\$ 1,005.52
Vehicle mileage	\$ 7,065.60
Vehicle FOR	\$ 2,652.00
Misc. supplies	\$ 300.00
Uniforms @ \$186/ea.	\$ 744.00
Training @ \$1000/employee	\$ 4,000.00
Safety awards @ \$35/ea.	\$ 140.00
Total Cost/yr	\$120,962.22

*WID season: May 1 to Oct 31, 7 days/wk, 0645am to 0745pm, 184 days.

ROLES AND RESPONSIBILITIES

U.S. Bureau of Reclamation (Reclamation)

- Update Fry-Ark Project Public Information Outreach Plan
- Complete and Distribute Ruedi Reservoir Facilities Assessment
- Participate on microscopy confirmation team, monitor infrastructure, and co-teach a sampling and monitoring training school
- Place Ruedi program information and web links to CDOW zebra and quagga mussel page on Ruedi Reservoir Reclamation website.

U.S. Forest Service (USFS)

- Become a state certified “authorized agent” in both inspection and decontamination.
- Post signage and distribute educational materials at Ruedi Reservoir.
- Place Ruedi program information and web links to CDOW zebra and quagga mussel page on Ruedi Reservoir USFS website. Also place information on National Campsite Reservation Webpage.
- In the event that Ruedi becomes positive for mussels, either supervise temporary watercraft inspection and decontamination workforce, inspecting boats as they enter and exit the reservoir, or administer the contract(s) for services.

Colorado Division of Wildlife (CDOW)

- Coordinate site specific and statewide planning, implementation and facilitate continued communication.
- Provide educational materials (signs, brochures and rack cards) to USFS and Aspen Yacht Club.
- Conduct sampling and monitoring for ANS, specifically zebra and quagga mussels, at Ruedi Reservoir. Specimen identification services provided by the CDOW Aquatic Animal Health Lab.
- Continue to educate and certify watercraft inspection and decontamination staff with the USFS, Aspen Yacht Club or an alternate entity. Maintain quality control of certified Ruedi Reservoir program.
- Provide law enforcement support, as needed, through the CDOW Area and District Wildlife Management Officers.

Aspen Yacht Club (AYC)

- Post signs at the Club and boat ramp. Hand out brochures and rack cards. Conduct 1-on-1 educational contacts with members, local residents and visitors.
- Maintain state certification as an “authorized agent/location” in both inspection and decontamination, as issued by CDOW on June 30, 2009.
- Obtain a decontamination unit through the CDOW Motorboat Colorado Grant Program.
- Conduct inspections and decontaminations according to the state protocol on boats entering the reservoir through the Club, specifically out of state boats.
- Inform registrants for Regattas and visitors of the mandatory inspection requirement for out of state boats and direct them to a state Authorized Location. Coordinate with CDOW inspection times for race participants prior to Regattas.
- Place web links to CDOW zebra and quagga mussel page on AYC website.

Ruedi Water and Power Authority

- Provide education on ANS, specifically zebra and quagga mussels, to customers.
- Place Ruedi program information and web links to CDOW zebra and quagga mussel page on Ruedi NCWCD’s website.

Southeastern Colorado Water Conservancy District (SECWCD)

- Provide education on ANS, specifically zebra and quagga mussels, to customers.
- Place Ruedi program information and web links to CDOW zebra and quagga mussel page on Ruedi NCWCD’s website.

Colorado River Water Conservation District (River District)

- Provide education on ANS, specifically zebra and quagga mussels, to customers.
- Place Ruedi program information and web links to CDOW zebra and quagga mussel page on Ruedi NCWCD’s website.

Eagle & Pitkin Counties, Colorado

- Provide education on ANS, specifically zebra and quagga mussels, to residents and visitors. Put links on website.

Permitted Concessionaire

- Provide education on ANS, specifically zebra and quagga mussels, to residents and visitors.
- Post signage and distribute educational materials at Ruedi Reservoir.

- Potentially become a state certified “authorized agent” in both inspection and decontamination to assist in WID program.

ACKNOWLEDGEMENTS

Many people have put a great deal of time to help with the mussel response in Colorado and specifically at Ruedi Reservoir. Those that contributed to this site-specific planning process are listed alphabetically below:

Elizabeth Brown, Colorado Division of Wildlife

Jon Ewert, Colorado Division of Wildlife

Sherman Hebein, Colorado Division of Wildlife

Christine Hirsch, United States Forest Service

Davine Lieberman, Bureau of Reclamation

Mike Kenealy, United States Forest Service

Anita Martinez, Colorado Division of Wildlife

Carlie Ronca, Bureau of Reclamation

Kendell Ross, Colorado Division of Wildlife

Howard Scott, United States Forest Service

Lyle Sidener, Colorado Division of Wildlife

Brad Wind, Northern Water Conservancy District

David Winters, United States Forest Service