

River Board Meeting Agenda

Pitkin County Courthouse Plaza 1, Aspen, CO

February 20 , 2014

Time	Description
4:00 PM	<ul style="list-style-type: none">• Board Comment• Public Comment• Additions – Deletions to Agenda
4:05 PM	<ul style="list-style-type: none">• Approval of Minutes January 16, 2014
4:10 PM	<ul style="list-style-type: none">• Grant Opportunities Staff
4:30 PM	<ul style="list-style-type: none">• Comprehensive Lower Fryingpan Assessment- Request for Funding Heather Tattersall Lewin & Sharon Clarke Roaring Fork Conservancy
4:50 PM	<ul style="list-style-type: none">• Trans Basin Conditional Water Rights Laura Makar
5:10 PM	<ul style="list-style-type: none">• Revision of Grant Procedure Rick Neiley

Future meeting dates 2014:

March 20

April 17

May 15

June 19

HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD

Meeting Minutes

530 E. Main St Plaza 1

Aspen, CO 81611

January 16, 2014– 4:00 p.m.

River Board members present: Lisa Tasker, Bill Jochems, Andre Wille, Ruthie Brown, Greg Poschman

River Board members absent: Rick Neiley, Greg Poschman

Others present: Lisa MacDonald, John Ely, Laura Makar

Board Comment – Mr. Nixa attended the 40 Year Celebration of Colorado's instream flow program and reported to the board on the event.

Ms. Brown updated the Board on the efforts towards the image identification process.

Mr. Jochems will be attending the Colorado Water Congress in Denver at the end of the month.

Public Comment - None

Additions/Deletions to Agenda – None

Approval of the Minutes

Mr. Nixa moved to approve minutes of November 20, 2013 meeting with corrections. Ms. Tasker seconded the motion. The motion passed 5/0.

Appointment of Chairman and Vice-Chair for 2014

Andre Wille volunteered to Chair the Board. Approval by unanimous acclamation.

Dave Nixa volunteered to be the Vice-Chair. Approval by unanimous acclamation.

Basin Roundtable White Paper – Ken Neubecker

Mr. Neubecker presented the Colorado Basin Roundtable's Vision Statement that will serve as a guide for how they see the Basin's future and water needs.

No formal action, informational only.

Formation of Future Committee Bill Jochems

Mr. Jochems presented ideas to the Board about the formation of a future committee, the objective would be to see where will be going over the next five years. The committee would gather ideas from both within and without and report back to the Board with its vision.

Mr. Jochems moved to authorize the formation a future committee, Mr. Wille seconded the motion. The motion passed 5/0.

Aquatic Nuisance Species Inspection Program Funding Request – Mark Fuller RWAPA

Mr. Fuller briefed the Board on the Inspection Program at Ruedi Reservoir and his efforts to secure funding for the 2014 season for the program due to the pull out of the USFS and the State of Colorado funds.

Ms. Brown moved to authorize the expenditure of funds of \$10,000 for support of the Aquatic Nuisance Species Inspection Program at Ruedi Reservoir. Ms. Tasker seconded the motion. The motion passed 5/0.

Revision of Grant Procedure –

Mr. Neiley was unable to attend the meeting and will present this to the Board at the Feb. 20, 2014 meeting.

Approved:

Attest:

Andre Wille– Chairman
Healthy Rivers and Streams Board

Lisa MacDonald

DRAFT

Agenda Item Summary
February 20, 2014

TO: River Board

FROM: Tia Cavendar – Chase Park Grants

SUBJECT: Grant Funding Opportunities

Information: At the September 19, 2013 meeting, the Board heard a proposal from Chase Park Grants related to grant funding opportunities available for future projects. The Board asked Ms. Cavendar to come back with an amended proposal once the 2014 project list was complete. Ms. Cavendar has reviewed grant opportunity options for both Northstar and the Basalt River Park and has drafted a proposal for the Board.

Requested Board Action – Motion to contract with Chase Park Grants for grant services as they relate to Northstar and the Basalt River Park.

Attachments: Proposal from Chase Park Grants



Proposal for Grant Services

Prepared for: the Healthy Rivers & Streams Board
Prepared by: Chase Park Grants, LLC
2/15/14

The following proposal outlines our recommended approach to helping the Healthy Rivers Board (Board) find and secure grant funding for two of its priority projects:

- 1) Northstar stream and wetland restoration activities, and
- 2) Implementation of the 2009 River Park Plan.

These recommendations were made based upon results from the *2013 Pitkin County Funding Assessment Report*, in addition to input from the Healthy Rivers Board and County staff. A description of our recommended approach follows.

Project Approach

First, we recommend the County submit at least one grant application for the Northstar project. Our team of grant experts will identify the best funding prospect to pursue first, and then prepare and submit a competitive grant application on behalf of the County and its Healthy Rivers Board.

Second, we recommend the Board compile a comprehensive inventory of funding programs to potentially pursue in support of the River Park Plan. This process will help inform overall funding potential, and will help guide the Board's grant-seeking efforts. Specific details about the work are listed below.

Task 1: Pursue Grant Funding for Northstar Restoration

The objective of this task is to pursue grant funding to help support restoration activities at the Northstar Preserve in Aspen. This work builds upon initial research that identified potential grant prospects the County could pursue for river restoration activities in Pitkin County.

Approach:

- Confirm eligibility for the top prospects identified in Table 1.
- Make pursuit recommendations about the Top Prospect.
- Correspond with funding agencies and program officers on behalf of the County.
- Conduct a site visit to host a "funder cultivation meeting" with target funders.
- Facilitate grant planning sessions and discussions with target funders.
- Assess leverage potential and make recommendations.

- Identify ways to maximize competitiveness.
- Prepare narrative content and auxiliary materials for one government grant program.
- Help navigate the pre-award process and post-award stewardship process.

Task 1 deliverables will include:

- 1) Grant application materials and technical assistance documents for one Top Prospect,
- 2) Pursuit Plan for one Top Prospect,
- 3) Grant narrative content for one government grant application, and
- 4) Corresponding auxiliary materials (i.e., budget forms, budget justification, letters of support, photos, diagrams).

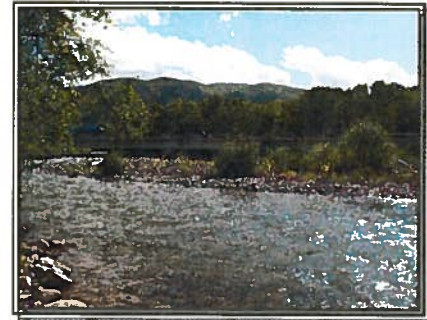
Table 1 Potential Funding Opportunities for the Northstar Restoration				
Funder	Program Name	Purpose	Amount	Deadline
Great Outdoors Colorado (GOCO)	Riparian Restoration Grant	To help improve and restore Colorado's rivers and streams, engage youth and families, and fund habitat improvement projects along the state's waterways. Eligible projects might include: erosion mitigation, habitat protection and eradicating thirsty non-native plants and trees.	\$50,000	Mar 2014
Colorado Parks & Wildlife	Fishing is Fun Grants	Funding is available to improve angling opportunities including stream, river, pond, and lake habitat improvements; access improvements; perpetual easements for public access; fish retention structures; development of new fishing ponds, and amenity improvements.	\$400,000	Apr 2014
Great Outdoors Colorado (GOCO)	Local Gov't Park & Outdoor Recreation (LPOR) Grant	To help entities acquire, expand and improve local parks, and outdoor recreation and environmental education facilities.	\$350,000	Apr 2014
Colorado Office of Economic Dev. & International Trade	Regional Tourism Act Grant	Gives local governments the opportunity to apply with the EDC for a large-scale, unique regional tourism project anticipated to result in a substantial increase in out-of-state tourism, and that generates sales tax revenue by transactions with nonresidents.	\$1 million+ Varies by project	Jun 2014
Western Native Trout Initiative	Small Project Funding Grant	Funding for riparian or in-stream habitat restoration, barrier removal or construction, population or watershed assessments needed for prioritization and planning, evaluating stream flows or lake water levels, and community outreach and education.	\$50,000	Oct 2014
Colorado River District	Water Resource Grant	For projects that protect, enhance or develop water resources in the 15-county area covered by the District. Eligible projects must: Develop a new water supply, improve an existing system, improve instream water quality, increase water use efficiency, reduce sediment, implement watershed mgmt actions, or control pre-1922 Colorado River Compact water rights.	\$150,000	Jan 2015

Task 2: Prepare a Strategic Funding Report for the River Park Project

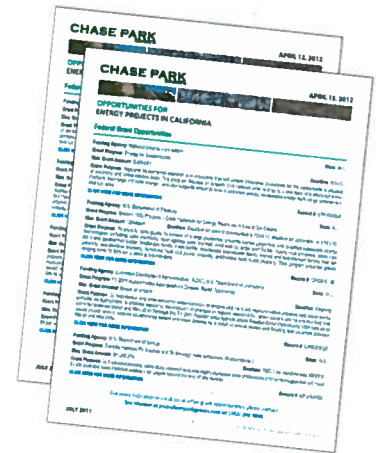
The objective of this task is to comprehensively search for grant opportunities to help implement activities recommended in the *2009 River Park Plan*.

Activities will include:

- Review planning documents and technical materials.
- Develop and refine inclusion and exclusion criteria
- Conduct key informant interviews of County staff, consultants, and target funders.
- Conduct iterative queries of the Chase Park database.
- Update relevant data from the *2013 Pitkin County Funding Assessment Report*.
- Evaluate identified grant programs for government and private funding
- Update data initially collected for the Roaring Fork Community Development Corporation and the Roaring Fork Conservancy
- Screen, filter, and evaluate top prospects to determine fit with project scope, eligibility, grant purpose, deadline, and budget
- Make recommendations about pursuit strategy and how to increase competitiveness



KAYAK PARK CENTER SELECTED LOCATION



The deliverable for Task 2 is a **Strategic Funding Report**, which will include recommendations to help guide the Board's grant seeking efforts in 2014 or 2015.

The report will include specific details about top prospects – including funder, program name, purpose, deadline and maximum grant amount.

TIMELINE AND FEE

The projected timeline is for a period of one year, beginning 3/1/14 and ending on 2/27/15 (unless otherwise agreed upon by both parties).

The cost to conduct both tasks is \$45,000, including all project and travel expenses (up to two site visits). Fees are payable in three installments, one-third upon project initiation, one-third at mid-point, and one-third upon completion of project.

SIMILAR PROJECT EXPERIENCE

Chase Park Grants (Chase Park) is a national research firm that specializes in government grant seeking for capital and infrastructure projects. The following section describes work we have conducted similar to the activities proposed in this document.

City of Fort Collins, CO – Strategic Funding Report for Stream Restoration. Chase Park worked with the City of Fort Collins, CO to identify top funding prospects to help design and construct capital improvements affecting public waterways.

Roaring Fork Conservancy, Basalt, CO – Strategic Funding Report for River Center Project. Chase Park worked with the Roaring Fork Conservancy to identify top funding prospects to design and construct a new River Center facility in Basalt, CO.

Bluff Lake Nature Center, Denver, CO – Technical Assistance. Chase Park is currently working with the Colorado Department of Public Health and Environment (CDPHE) and the Bluff Lake Nature Center to obtain funding for capital improvements at the lake facility. Specifically, funds to repair a failing dam, improve in-stream flow, and manage non-point source pollution, such as trash carried by stormwater.

Greenway Foundation, Denver, CO – Strategic Funding Report for River Implementation Plan. Chase Park is currently working with the Greenway Foundation and its partners to identify funding opportunities for the design and construction of river restoration projects on the South Platte River near downtown Denver.

QUALIFICATIONS OF CONSULTANT TEAM

Chase Park has assembled a qualified team of grant professionals and technical advisors to help the Board secure funding for its planned projects. The following describes the Consultant Team and the expertise our team will bring to Pitkin County for this work.



Tia A. Cavender, MA, GPC, President

As president and lead strategist for Chase Park Grants, Tia counsels municipal agencies, developers, and engineering firms on innovative ways to secure external funding. Before forming Chase Park, Tia was president and founder of BOCA Grants Solutions, an evaluator at the University of Colorado Denver, and Grants Director at Metro Health Hospital in Michigan. A frequent presenter at professional conferences, Tia has designed and led numerous grant-specific workshops, professional seminars, and keynote presentations.

She is a Certified Grants Professional (GPC) and member of the Grants Professionals Association. She holds two master’s degrees from the University of Colorado.

Jennifer L. Waltz, Grant Strategist

In her role at Chase Park, Jen serves as a project manager and grant strategist on water resource and community development planning projects. With more than 10 years of research and analytic experience, Jen has extensive experience managing projects, evaluating programs, securing research funding, and conducting usability testing. Jen excels in mixed-methods analysis and evaluation, and presenting results into clear written format that all readers can understand.





February 14, 2014

Lisa MacDonald
Pitkin County Attorney's Office
530 E. Main Street; Suite 302
Aspen, CO 81611

RE: Proposal for Grant Services

Dear Lisa:

Thank you for inviting us to submit a proposal for specialized services to the Pitkin County Healthy Rivers and Streams Board.

Our qualified team of grant professionals is *ready* and *available* to begin work immediately—an important step if the Board would like to pursue funding in 2014.

Timing is especially critical if the Board wants to pursue funding for restoration work planned at the Northstar site.

Many thanks to you for championing this effort on behalf of the Healthy Rivers Board and the citizens it serves. The potential for funding is strong, and we appreciate the chance to partner with the Healthy Rivers Board to bring new funding to the Roaring Fork Valley!

Sincerely,

A handwritten signature in black ink, appearing to read "Tia Cavender".

Tia Cavender, MA, GPC
President
Chase Park Grants, LLC

Agenda Item Summary
February 20, 2014

TO: River Board

FROM: Roaring Fork Conservancy

SUBJECT: Comprehensive Lower Fryingpan Assessment- Request for Funding

Information: Roaring Fork Conservancy is requesting \$38,000 towards the completion of the Comprehensive Lower Fryingpan Study

Requested Board Action – Motion to grant funding

Attachments: Letter, RFC Grant Criteria and Weighting, Updated Summary of Comprehensive Lower Fryingpan Assessment

ROARING FORK



CONSERVANCY

*Bringing People Together
to Protect Our Rivers*

Pitkin County Healthy Rivers and Streams Board
Courthouse Plaza
530 E. Main St, 3rd Floor
Aspen, CO 81611

RE: Request for Funding for the Comprehensive Lower Fryingpan Assessment's Economic Study, Didymo Assessment, and Synthesis of Lower Fryingpan River Biologic Studies

BOARD OF DIRECTORS

Ramsey Kropf
President
Rick Neiley
Vice President
Jennifer Sauer
Secretary
Ted Borchelt
Carter Brooksher
Stephen Ellsperman
Jim Light
Rick Lofaro
Executive Director
Don Schuster
Diane Schwener
Past President
Rivers Council Liaison
Jacque Whitsitt
Town of Basalt Representative
Larry Yaw
Valerie Alexander Yaw

PROGRAM STAFF

Rick Lofaro
Executive Director
Sharon Clarke
Watershed Action Director
Sarah Johnson
Education Outreach Coordinator
Heather Lewin
Watershed Action Coordinator
Christina Medved
Education Director
Holly Pagan
Office Manager
Chad Rudow
Water Quality Coordinator
Sarah Woods
Director of Philanthropy

Dear Board Members,

Roaring Fork Conservancy (RFC) has requested time on the agenda for Thursday, February 20, 2014 to update you on the progress of the Comprehensive Lower Fryingpan Assessment and request supplemental grant funding for the Fryingpan Valley Economic Study, Didymo Assessment and Comprehensive Biologic Report.

The total budget for the Comprehensive Lower Fryingpan Assessment is presently projected to be \$117,840. We have currently raised \$58,950. This includes \$28,950 from private donors, \$5,000 from Aspen Skiing Company's Environment Foundation, \$10,000 from Eagle County, \$10,000 from the Town of Basalt, and \$5,000 from RWAPA.

RFC is requesting \$38,000 in funds from Pitkin County Healthy Rivers and Streams. This would contribute to \$20,000 for the Economic Study and \$10,000 for the Didymo Assessment and \$8,000 for Synthesis of Lower Fryingpan River Biologic Studies to be completed pending results of each individual study.

Please find the updated study plan and discussion of grant criteria attached.

Thank you for your consideration.

Sharon Clarke
Watershed Action Director
Roaring Fork Conservancy



ROARING FORK CONSERVANCY

Comprehensive Lower Fryingpan River Assessment 2013-2015

Summary

Given current concerns over the health of the Fryingpan River and fishery, Roaring Fork Conservancy is pursuing a comprehensive study to better understand the current state of the Fryingpan, and create a long-term monitoring plan to track trends over time. Roaring Fork Conservancy’s initial aquatic studies will examine macroinvertebrates, flows, and water temperatures. In addition, we will conduct an assessment of the American dipper population, the extent of *Didymosphenia Geminata*, and update the 2002 Fryingpan Valley Economic Study to evaluate the role of the river in community vitality. Roaring Fork Conservancy will also work with Ruedi Water and Power Authority, Bureau of Reclamation, Colorado River Water Conservation District, and U.S. Fish and Wildlife Service to investigate how new and existing contracts for Ruedi Reservoir water can be managed to ensure river and associated economic health.



Upon completion of these studies, Roaring Fork Conservancy will disseminate the findings to federal, state and local government agencies and residents of the Fryingpan River Valley.

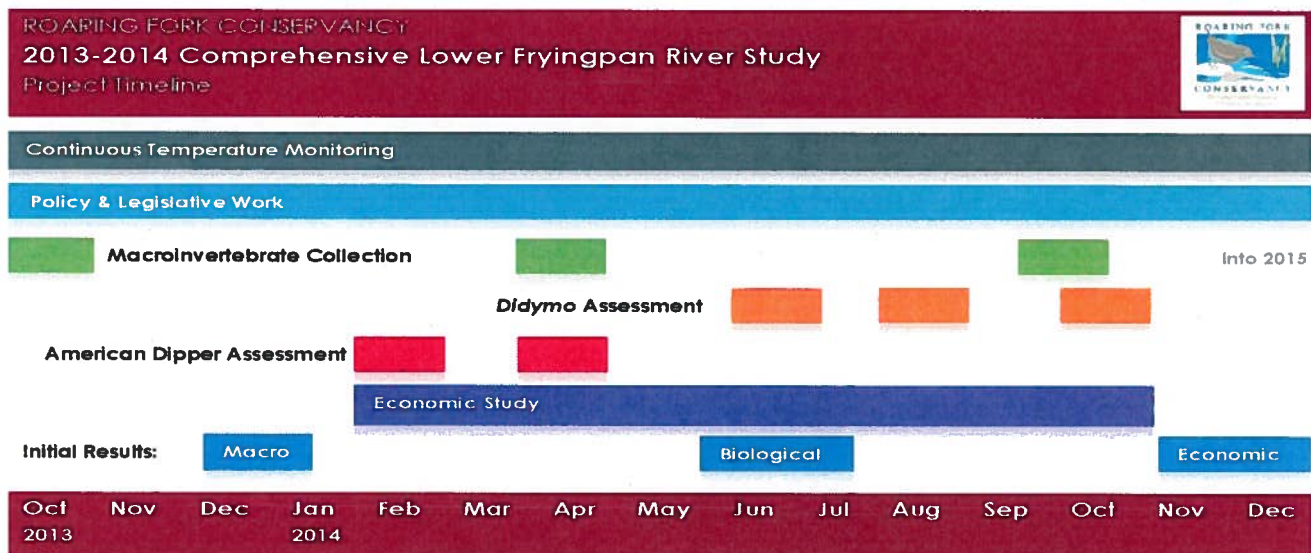
Goal

To ensure the environmental and economic sustainability of the Lower Fryingpan River, including its designation as a “Gold Medal Fishery”.

Objectives

- Assess the current biological health of the Lower Fryingpan River and if impaired identify potential causal factors and solutions.
- Recommend a long-term monitoring strategy for the Fryingpan River.
- Update Roaring Fork Conservancy’s 2002 *Fryingpan Valley Economic Study*.
- Determine and pursue voluntary and, if necessary, policy/legislative solutions for managing releases from Ruedi Reservoir to prevent negative economic and environmental impacts.

Components & Time Frame



BACKGROUND

The headwaters of the Fryingpan sub-watershed drain westward from the Continental Divide into the Fryingpan River, which meets the Roaring Fork River at Basalt. The Fryingpan-Arkansas (Fry-Ark) Project, constructed in the 1960s, is a large transmountain diversion project whose infrastructure is evident throughout the sub-watershed's headwaters in the form of diversion tunnels and Ruedi Reservoir, which was built to compensate the West Slope for the Fry-Ark Project's water depletions. The Fryingpan River Valley serves as a popular destination for outdoor recreation including angling and reservoir-based activities. One of the largest issues in this sub-watershed has been how management of Ruedi Reservoir affects stream flows, the aquatic ecosystem, and angling activities in the lower Fryingpan River.

The Fryingpan River below Ruedi Reservoir to the confluence with Roaring Fork River and the Roaring Fork River down to the confluence of the Colorado River is classified as a Gold Medal. Gold Medal Trout standards designate waters that provide the greatest potential for trophy trout and angling success. The criteria specify that a stream provides at least 60 pounds per acre of trout and more than 12 trout greater than 14 inches per acre. This status is supported by the high productivity of wild brown trout. The Roaring Fork Watershed has one of the longest contiguous sections of Gold Medal water in the state, extending along 14 miles of the Fryingpan River and 28 miles of the Roaring Fork. Only 168 miles (approximately 2%) of Colorado's 9,000 miles of trout streams carry the Gold Medal signature.

Given the lower Fryingpan River's dam-influenced flow regime, several studies have looked specifically at the effects of Ruedi Reservoir operations on the aquatic ecosystem. A study by Miller Ecological Consultants, Inc. (Ptacek et al., 2003) characterized the instream habitat and flow, macroinvertebrate community, spawning, trout populations, thermal regime, and hydrology for the lower Fryingpan and Roaring Fork rivers. Main conclusions from the study specific to the lower Fryingpan River include the following:

- The amount of suitable trout habitat has increased with post-dam conditions as compared to habitat available before the construction of the Ruedi Dam.
- Hypolimnetic releases and regulated flows in the Fryingpan River are responsible for maintaining extraordinarily high densities and biomass of macroinvertebrates. Densities were highest immediately below Ruedi Dam.
- Rainbow trout spawning success is temperature-limited and may be further reduced by whirling disease.
- Relative abundance of brown trout has significantly increased over the past 20 years and maximum size and overall biomass of brown trout have increased dramatically since installation of the dam.
- The annual maximum temperature of the thermal regime has shifted from late summer (pre-dam) to late fall/early winter (post-dam). Water released is warmer than normal in the fall and winter and cooler than normal in the late spring and summer.
- Since dam construction, base flows are augmented by reservoir releases and spring peak flows are reduced. Since 1989, reservoir releases have been significantly increased during the late summer/fall (August through October).
- Extreme fluctuations in reservoir releases on hourly and daily levels occur fairly frequently.

One of the key outcomes of this main study was a hypothesis that erratic changes in discharge have a negative impact on benthic macroinvertebrates. Therefore, a supplemental study undertaken collected enough information to suggest that the flow regime may have an important physical influence on benthic macroinvertebrate communities (Rees et al., 2003). An additional follow-up study evaluated potential impacts associated specifically with low winter flows (Miller Ecological Consultants, Inc., 2006). This study concluded that the impact to the macroinvertebrate community at the Basalt site from anchor ice appears to be influenced more by ambient air conditions than Ruedi-influenced base flow releases. The study's results also indicated that macroinvertebrate diversity and evenness appear to recover in one to two years after severe anchor ice formation if winter flows remain greater than 70 cfs, and that flows greater than 70 cfs seem to result in less anchor ice in the upper half of the river than do flows around 40 cfs.

Current Conditions

In the summer of 2013, several long-time anglers familiar with the Fryingpan River and residents along the river reported seeing lower fish numbers, including fewer large trout; decreased numbers of macroinvertebrates and some questioned the distribution pattern; fewer birds, including dippers; and increased presence of *Didymosphenia Germinata* (Didymo). These conditions followed a particularly dry year, leaving Ruedi Reservoir lower than average (Ruedi went down to 61,000 acre feet this spring, its lowest level since 2008, when it went down to 55,000 acre feet). Roaring Fork Conservancy received many reports of

extensive and long-lasting anchor ice. Flows in the Lower Fryingpan River hovered around 40 cfs for almost four months. These low flows were not typical but were instituted by the Bureau of Reclamation to keep more water in the Reservoir and assure that it would come as close as possible to filling in the summer of 2013. The Bureau's operating procedures generally call for winter releases in the 70-100 cfs range but drought conditions in 2012 and the winter of 2013 led them to reduce these flows. Future drought conditions resulting from climate change and increased demands on Ruedi may lead to increased instances of low winter flows in the future.

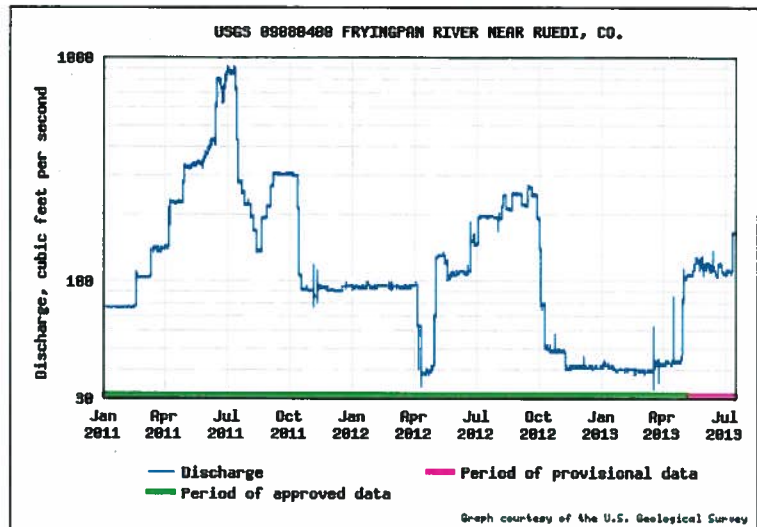


Figure 1. Flows below Ruedi Reservoir Jan. 2011-July 2013. Graph show prolonged period of low flows in the winter of 2012/2013.

Future Threats

Concurrently, Roaring Fork Conservancy provided comments on Bureau of Reclamation's Ruedi Reservoir Round II Water Marketing Program-Repayment Contracts on 19,585.5 acre feet, Ruedi Dam and Reservoir, Fryingpan-Arkansas Project Draft Environmental Assessment (Draft EA). Roaring Fork Conservancy expressed concerns about the potential detrimental effects of the Proposed Action Alternative to the aquatic life and recreational economy in the Fryingpan River and requested that the contracts be awarded with stipulations or conditions that protect the aquatic resources of the Fryingpan River. Specifically, we were concerned that

"A decrease in average winter flows on the Fryingpan River will likely increase the formation of anchor ice, which creates the potential for adverse effects on aquatic vegetation, macroinvertebrate populations and fish populations, both directly and indirectly because of habitat alteration and scouring events."

and,

"The potential exists for the lower Fryingpan River serving as a conduit for all contracted Ruedi Reservoir releases to see significantly higher flows in the late summer/early fall, increasing the hydrologic alteration in both the Lower Fryingpan and Roaring Fork Rivers".


On August 2, 2013, the U.S. Bureau of Reclamation released the Final Environmental Assessment for Ruedi Contracting and the Finding of No Significant Impact. They found that the contracts for water:

"would not result in a significant impact to the human environment, or natural or cultural resources that were not already analyzed in the Final Record of Decision for Ruedi Reservoir Round II Water Marketing Program Final Supplement to the Environmental Statement (RRII FES)."


PROPOSED ASSESSMENTS

In response to these reports and potential additional alteration to flows, Roaring Fork Conservancy is conducting a macroinvertebrate, temperature, dipper and *Didymo* assessments as well as a repeat of our 2002 Economic Study. Data from Roaring Fork Conservancy's ongoing water quality monitoring program on the Fryingpan River and stream flow data from Colorado Division of Water Resources and USGS gages on the river will be used to help interpret these data. These studies will quantify existing conditions and the value of the resource to the surrounding communities; provide guidance for ongoing monitoring; inform discussions with water contractors and the BOR, the administrator of these contracts, regarding use of this contracted water for piscatorial purposes; and determine if there is a need to modify the Fryingpan-Arkansas Operating Principles.

Macroinvertebrates and Temperature Assessments


 Macroinvertebrates are aquatic insects large enough to be seen without a microscope. Some common macroinvertebrates that exist in high quality waters are the larval life stage of mayflies, caddisflies and stoneflies. Macroinvertebrates are an ideal bioindicator because of their limited mobility, relatively long aquatic life stage, high population densities, and sensitivity to disturbance. To understand existing conditions, Dr. Bill Miller of Miller Ecological Consultants will conduct a macroinvertebrate assessment similar to the study conducted in 2003-2004. He will work with Roaring Fork Conservancy to collect macroinvertebrates at three sites: downstream from the reservoir, near Taylor Creek, and downtown Basalt. These three sites were sampled fall, 2013 and will be sampled in the spring of 2014. Continuous temperature monitors have been placed near the bottom of the river at these three sites to monitor conditions ripe for anchor ice formation. Any hourly occurrence with a water temperature less than 32° F will be identified as an anchor ice occurrence. Concurrently, Roaring Fork Conservancy will continue to collect water quality data at two sites on the Fryingpan- one above Ruedi Reservoir (near Meredith) and the other below-Baetis Bridge. Analysis will include an evaluation of the relationship between temperature, macroinvertebrate, and flow data as well as comparison to the previous study.

Didymosphenia Geminata (Didymo) Assessment

 The third component of the aquatic study will document *Didymo*, a single celled alga also known as "rock snot" that can have detrimental effects on macroinvertebrates, and therefore fish. It can dominate stream surfaces by covering up to 100% of substrate with thicknesses of greater than 20 cm, greatly altering physical and biological conditions within streams. Macroinvertebrate species that consume *Didymo* are expected to be favored over those species that don't eat *Didymo* and species that require exposed sediment are expected to be negatively impacted by extensive coverage of *Didymo*. It thrives in sustained low flows and is often spread by the boots of anglers. High density blooms are frequent in rivers directly below impoundments. Large floods that scour the river bed can return biomass to a low level. However, in order to reduce cell biomass, floods must be high enough to cause the rocks on the streambed to mobilize, scouring the cells from rock surfaces. Understanding the extent and rate of spread will give a clearer picture of potential threats.

RFC has contracted with the Natural Resource Management Program at Colorado Mountain College (CMC) in Leadville to perform the *Didymo* study. CMC will collect *Didymo*, if it is present, samples using EPA protocol at 20 sample sites on the Lower Fryingpan. Sampling will occur three times a year (spring, summer, fall). The spring sample will not be taken until at least three weeks following the high flow event, allowing for re-colonization of the *Didymo* bloom. Cobbles at this site will be scraped, collecting samples to be further analyzed in a lab. At each site, water quality data (pH, specific conductance, temperature, and dissolved oxygen) will also be recorded. From these samples, CMC will produce a GIS map detailing *Didymo* occurrence and a comprehensive report which includes recommendations for future monitoring and management.

American Dipper (*Cinclus mexicanus*) Assessment

 The American dipper, an aquatic song bird that has evolved to a top-level predator-specialist in fast-flowing mountain streams of western North America, is also a good indicator of stream habitat quality. Dippers use several environmental characteristics to select suitable nesting sites, including water quality, stream habitat quality, and riparian habitat quality. Prey abundance, foraging ease, and nesting habitat are dependent on

these environmental variables, and if any of these variables are impaired dippers will reject the site. Although dippers can compensate for a degraded resource by increasing territory size, at a certain point energetics dictate against selecting an impaired territory. The dipper diet consists almost exclusively of macroinvertebrates and fish. Dippers prey selectively on caddisfly and mayfly nymphs and dipper abundance has been strongly correlated with the abundance of these insects. Members of both of these macroinvertebrate groups are generally intolerant of pollution or extreme ecological conditions. Pollution or sedimentation can destroy macroinvertebrate populations causing dippers to abandon the site.

With landowner permission, Delia Malone, a local ecologist, familiar with dipper surveys and the Fryingpan River will walk the Lower Fryingpan and conduct a pre-breeding survey (~ Feb. 2014) to determine territories, find nests, and determine number of breeding pairs. A second survey will be conducted after breeding to determine nest success.

Fryingpan Valley Economic Study

Understanding the rivers economic impacts on the Town of Basalt and the Roaring Fork Valley will aid in an overall view of the importance of keeping the river healthy, beyond biological needs. The proposed economic study would echo the work done nearly a decade ago by Roaring Fork Conservancy staff.

The Fryingpan Valley Economic Study (Crandall, 2002) revealed a wide range of information about the lower Fryingpan River, including specific results of economic impacts related to recreation activities. Some of the findings include:

- The 7.5 miles of publicly-accessible river on the lower Fryingpan River represent a significant tourist destination with related impacts on the local economy. Based on the study's data (collected from November 2000 through October 2001), the Fryingpan Valley's recreation activities contributed an estimated \$1.8 million annually in total economic output to Basalt's economy.
- A majority of Fryingpan River visitors come from outside of the Roaring Fork Watershed specifically to fish on the Fryingpan River. The study discovered that these visitors tended to spend nights in commercial accommodations, resulting in total direct spending as high as \$135 per visitor per day.
- Based on the study's data, commercial lodging represented an important component of lower Fryingpan River visitors' expenditure patterns, especially as a proportion of Basalt's total lodging sales.
- Based on visitor counts done as part of the study, the lower Fryingpan River supports an estimated 34,200 visitor days per year - attributable mainly to fly-fishing activities on the river. 70% of these visitor days occurred during the summer season and the other 30% during the off-season (Oct.-May).
- The study identified that lower Fryingpan River recreation supports sources of income and a number of jobs across several economic sectors both in the Basalt/El Jebel area and throughout the broader Roaring Fork Watershed.
- For the study period, although about half of the economic activity related to Fryingpan Valley recreation activities was felt in the Basalt area, spending by Fryingpan Valley visitors occurred throughout the Roaring Fork Watershed, as exemplified by the various towns in which visitors stayed overnight in commercial accommodations.
- Comments made by visitor survey respondents were wide-ranging, but a few common opinions emerged. A number of survey respondents stated their desire to return to the Fryingpan Valley.
- Ruedi Reservoir serves as a popular water-based recreation site for residents of the Roaring Fork Watershed. Based on the study's results, many of these local visitors make frequent trips during the summer season.
- For the study period (November 2000 through October 2001), 55 percent of Ruedi Reservoir visitors were local residents. The 45 percent from outside of the watershed had modest direct-spending patterns because they often were camping. Therefore, the resulting local and regional economic output related to Ruedi visitors was much lower than for visitors to the lower Fryingpan River.

- About half of Ruedi Reservoir respondents indicated they would take fewer trips if the reservoir followed a specific pattern of declining water levels throughout the season. In addition, some of the comments provided by survey respondents reflected opinions about Ruedi Reservoir water levels being too low.

RFC has contracted with Colorado State University (CSU) to update the Fryingpan Valley Economic Study. Dr. John Loomis will be updating survey questions to capture core data such as: party size, party origin (zip code), length of trip and expenditures by category including travel, gear and tackle, guide services, clothing accommodations, and food and beverage. The survey will also seek to capture influence of high late season flows and change in size or quantity of fish caught on the Fryingpan, as well as change in reservoir levels in Ruedi. Dr. Martin Shields is heading up the economic modeling process. Both will be assisted by a PhD Research Economist. Through this research, Roaring Fork Conservancy hopes to gain a better understanding of the current users of the Fryingpan River, their priorities and influences on local economy.

Policy and Legislative Options

The final piece of the overall study will involve investigating options for supplementing stream flow in the Fryingpan when necessary. One option to accomplish this may be arrangements with entities that have contracted for the delivery of water from Ruedi for the release of some of that water for piscatorial purposes. There are procedural, financial and legal implications to such arrangements that need to be investigated and analyzed. Pending board approval, RFC will be partnering with RWAPA for this portion of the study.

The most recent round of contracts for Ruedi water allow for the use of contracted water for piscatorial purposes but arranging for such a use would involve negotiations both with contractors and the Bureau of Reclamation. The first step in this process will be to contact contractors and determine their ability and willingness to make water available to augment stream flows. Piscatorial water would need to be secured through a sub-contract and the terms of those contracts could involve purchase or lease of water. The sub-contracts would also need to meet the Bureau of Reclamation's criteria and would need formal approval from the Bureau.

A second, more involved option would be the amendment of previous Ruedi contracts to also allow for piscatorial use of contracted water. This would make another several thousand acre-feet of potential supplemental water available but that water would then need to be secured through the same process outlined above.

A final strategy would be to amend the Ruedi Operating Principles to acknowledge the need for maintaining adequate stream flows in the Fryingpan and the value of the Fryingpan and Roaring Fork fisheries. Amendments could include specific requirements for minimum and maximum stream flows, the addition of maintaining local fisheries as one of Ruedi's operational goals, and requirements for ongoing evaluation of fishery health and adaptation of operations to respond to fishery needs. Ruedi's operating principles are based in Congressional documents that were adopted in conjunction with the authorization of the Fryingpan-Arkansas Project over 50 years ago, so revising or amending those documents would require action at the Federal level and might also require new legislation authorizing such amendments. This would be a long-term option that could be undertaken simultaneously with those described above.

One of the strategies that has been discussed is a challenge to the recently-released Environmental Assessment (EA) associated with the sale of Ruedi water. This is not recommended for the following reasons:

- The EA examines recent sales of Ruedi water and its conclusions mirror those of the previous EIS on Ruedi water sales. Neither document addressed low winter flows due to drought which is the presumed cause of last winter's anchor ice and this summer's observations of lower macroinvertebrate levels. Therefore a challenge based on low flows due to drought would not necessarily be accepted as relevant to EA's purpose, methods or conclusions.
- Because this summer's concerns were not included in any specific way in previous comments on the EA, they may not be accepted as a timely basis for challenge.

- Even if a challenge to the EA were successful, the result would be a revision to the EA to incorporate and analyze more data, with no guarantee that the EA's conclusions would change.
- A challenge to the EA would be seen as a threat to those entities who have been working to secure contracts for Ruedi water and, through that process, to settle a number of outstanding issues associated with Ruedi, like the final repayment of the debt on Ruedi construction and the finalization of Ruedi's annual obligation of water for endangered fish species. A challenge to the EA would be opposed both by the Bureau and by those other entities which include many agencies and governments in the Colorado River Valley. The challenge process would be controversial, prolonged, expensive and possibly inconclusive.

As we gain a better understanding of the potential issues and causes through the economic and biologic studies, we will identify and suggest creative options for the future management Ruedi Reservoir to maintain the environmental and economic assets of the Lower Fryingpan River. This could entail a mix of the policy and legislative options discussed here.

Viability of Project

With full funds awarded from Healthy Rivers and Streams to complement money currently in hand, this project will undoubtedly be completed in the designated time line. Without this funding, RFC will be required to continue to work to solicit funds from other sources such as private donors and grants. This would require further staff time, thereby increasing the overall cost, and could delay the start of one or more of the projects components which are designed to be done concurrently. The most serious impact would occur if a delay in funding caused one or more of the project partners to no longer be available.

Public Accessibility

This study of the Fryingpan was born from public demand. Concerned citizens contacted RFC, who, after investigating anecdotal claims, decided to pursue the Comprehensive Lower Fryingpan Assessment. The results will be of interest to Fryingpan homeowners, anglers, government and management agencies, local businesses, and more. The Fryingpan Valley Economic Study will repeat many of the elements of a 2002 study. According to our website statistics, this report is still accessed and downloaded regularly.

Goals of River Board

The Comprehensive Lower Fryingpan Study meets 3 of 4 of the Healthy Rivers and Streams Board goals. This project works to maintain and improve water quality and quantity within the Roaring Fork watershed, particularly in the Fryingpan River which, in turn, affects the Roaring Fork River. The study works to solidify the link between low winter flows and biological river health, as measured by macroinvertebrate and American Dipper populations.

Because all contract water from Ruedi has been let, there are concerns about low flows in the winter and artificially high flows in the late summer/early fall on the Fryingpan River. Results of this study will work to link water quality and quantity on the Fryingpan and used to communicate these needs to the Bureau of Reclamation to cooperatively ensure the health of the Fryingpan River.

Gold Medal waters, abundant angling, and a world-renowned reputation characterize the lower Fryingpan River. Working to secure, create and augment minimum winter stream flows in conjunction with the BOR will help to ensure ecological health, recreational opportunities, and preservation of wildlife and riparian habitat.

Prospect of Repetition of Project

While the unique characteristics of the Fryingpan River make the prospects of replicating the overall study unlikely, many of the individual aspects are repeatable not only on the Fryingpan but also in other places throughout the state. The Lower Fryingpan Valley Economic Study is an updated replica of the 2003 study, and will most likely be repeated in the Fryingpan area again, but can also be repeated and/or referenced in other studies linking economics and recreation. The macroinvertebrate/temperature assessment is an update of a 2004 and 2005 study. The Didymo

Assessment is one of the first in the state, and because Didymo is a growing problem, the protocol used here could easily be repeated in another location. In addition, each component of the assessment will contain a plan for future monitoring and management, which could include repetition of the study in the future.

History of the Requesting Party

RFC is widely-known as the premier watershed conservation organization in the Roaring Fork Valley. It has also become one of the most respected watershed conservation organizations in Colorado. It has a 17-year history of successfully spearheading a diverse portfolio of watershed projects and programs in the Roaring Fork Watershed. Its accomplishments include:

- **Watershed Conservation and Education** – RFC conducts ongoing classroom and outdoor educational programs (students and adults), with 75,552 educational program contacts since RFC's inception. It publishes a bi-annual newsletter (5,000 copies), monthly email (*River Notes*), Facebook page, and maintains a web site on watershed issues (www.roaringfork.org).
- **Land Conservation** – As one of the only watershed conservation organizations in Colorado that acts as a land trust, RFC conserves critical riparian habitat through conservation easements, while maintaining responsible public access. To date, it has protected approximately 280 acres of property on 15 conservation easements.
- **Water Quality Monitoring** – Through its network of volunteers, staff and local schools, RFC collects and reports scientific water quality data at 29 sample stations throughout the watershed to Colorado River Watch.
- **Water Resources Management** – RFC proactively identifies, researches and coordinates project/program responses to water resources issues as they arise within the watershed. RFC has also been a leader in the Roaring Fork Watershed Collaborative.
- **Watershed Planning** - RFC was the lead consultant on the Roaring Fork Watershed planning effort, which generated 8 comprehensive planning documents, including the [State of the Roaring Fork Watershed Report 2008](#) and the [Roaring Fork Watershed Plan](#). It is currently coordinating projects and programs to implement the Watershed Plan's recommended actions, including collaboration on a regional water conservation planning initiative, and a related project to identify opportunities to enhance stream flows in the lower Crystal River.

RFC has previously received funding from the Healthy Rivers and Streams Fund: to complete the *Roaring Fork Watershed Plan* (as its lead consultant); for planning, grant writing, assessing existing water quality data, and designing baseline and water quality monitoring plans for the Coal Basin and Crystal River area confluence project restoration work; to enable RFC to work with the U.S. Forest Service to initiate the Coal Basin biochar pilot project in 2012; Crystal River Assessment and Design of Restoration Projects Initiative; and to complete the *2012 Snapshot Assessment of the Roaring Fork Watershed* with Public

Counsel of the Rockies. RFC has successfully completed all of these projects, within budget, and kept Pitkin County fully-informed of its accomplishments using this public funding.

Participation by Other Parties

RFC prides itself on a history of successful collaborative projects, and the Comprehensive Lower Fryingpan Assessment is no different. A partnership with Colorado State University has been established to facilitate a high level economic study, involving two renowned professors and a post-doctoral researcher. The Didymo study will be performed in partnership with CMC Leadville's Natural Resource Management Program under the guidance of professors trained by USGS and EPA. In addition, Ruedi Water and Power Authority helped to develop the overall study design.

Funding partners for the project include Eagle County, Town of Basalt, Colorado Parks and Wildlife, Aspen Skiing Company's Environment Foundation and numerous private donors.

Proposed Project Budget

RFC has requested \$38,000 from the Pitkin County Healthy Rivers and Streams board in order to facilitate the completion of the Comprehensive Lower Fryingpan Assessment. This represents slightly more than half of the remaining funds RFC requires to fully fund the study. RFC is currently in conversation with private donors as well as in the process of applying for further grant funding in order to fund the remainder of the study.

Agenda Item Summary
February 20, 2014

TO: River Board

FROM: Laura Makar

SUBJECT: Transbasin Conditional Water Rights

Information: Discussion of transbasin conditional water rights. Additional packet material will be handed out at meeting.

Requested Board Action – Informational only

Attachments: Water Rights Report

Water Rights Report by Structure Name

State of Colorado																	HydroBase									
WD	ID	Water Right Name	Struct Type	Stream Information			Legal Location			Use Type	Decreed Amt	U	Adj. Type	Adj. Date	Padj Date	Apr Date	Admin No	O #	Priority No.	Court Case	Seq #	PIA	Alter ID	Comment		
				#	Name	Cty	Q10	Q40	Q160																sec	ts
38	4625	FRY ARK PR BOUSTEAD TUNNEL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	864PA1352	600.0000	A	S,AP	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	RES14	90CW0340	3803732	PUEBLO BRD WATER WORKS, 50% INTEREST; NANHOE RES WATER THRU BOUSTEAD
38	4625	FRY ARK PR BOUSTEAD TUNNEL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	864PA1352	17.5000	C	S,AP	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	246	90CW0340	3804613	PUEBLO BRD WATER WORKS, 50% INTEREST; NANHOE RES TUNNEL WATER THRU BOUSTEAD
38	4625	FRY ARK PR BOUSTEAD TUNNEL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	864PA1352	25.0000	C	S,AP	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	247	90CW0340	3801761	PUEBLO BRD WATER WORKS, 50% INTEREST; LYLE DITCH WATER THRU BOUSTEAD
38	4625	FRY ARK PR BOUSTEAD TUNNEL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	864PA1352	12.5000	C	S,CA,AP	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	248	90CW0340	3801760	PUEBLO BRD WATER WORKS, 50% INTEREST; PAN DITCH WATER THRU BOUSTEAD
38	4625	FRY ARK PR BOUSTEAD TUNNEL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	864PA1352	10.0000	C	S,CA,AP	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	249	90CW0340	3801762	PUEBLO BRD WATER WORKS, 50% INTEREST; HIDDEN LAKE CRK DITCH WATER THRU BOUSTEAD
38	4625	FRY ARK PR BOUSTEAD TUNNEL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	864PA1352	25.0000	C	S,CA,AP	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	249	90CW0340	3801762	PUEBLO BRD WATER WORKS, 50% INTEREST; HIDDEN LAKE CRK DITCH WATER THRU BOUSTEAD
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1234	900.0000	C	S,C	1958-06-20	1952-10-24	1957-07-29	39291.00000	0	718	CA4613		LIMITED TO 900,000 AF IN ANY 10 YEARS AND 2,352,800 AF IN 34 YRS;09CW40
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1234	721.0000	C	S,CA	1958-06-20	1952-10-24	1957-07-29	39291.00000	0	718	W0829		LIMITED TO 120,000 AF IN ANY YEAR AND 2,352,800 AF IN 34 YRS
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1234	179.0000	C	S,CA	1958-06-20	1952-10-24	1957-07-29	39291.00000	0	718	80CW0267		
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1248Q	63.0000	C	S	1983-12-31	1982-12-31	1957-07-29	48577.39291	0		83CW0352		ENLARGEMENT
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1248Q	37.0000	C	S,C	1983-12-31	1982-12-31	1957-07-29	48577.39291	0		83CW0352		ENLARG DIL 84CW195
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1248Q	13.0000	C	S,CA	1983-12-31	1982-12-31	1957-07-29	48577.39291	0		96CW0087		88CW245 96CW0087
38	4625	FRY ARK PR BOUSTEAD TUNL	7	11	FRYINGPAN RIVER	PIT	SW	23	9	S	82	W	S	1248Q	24.0000	C	S,CA	1983-12-31	1982-12-31	1957-07-29	48577.39291	0		D2CW0324		
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	1	367.0000	C	S	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	CA3082		USE CHANGE W1901. ENTIRE SYS TRANS MTN TO TWIN LAKES RES, DIV 2
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	12348Q	258.0000	C	S,C	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	CA3082		LINCOLN & OTHER HEADGATES OF SYS USE CHANGE W1901
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	12348Q	137.0000	C	S,CA	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	CA3082		05/01/1944
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	12348Q	106.0000	C	S,CA	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	W0722		
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	12348Q	6.0000	C	S,CA	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	W0722		05/27/1976
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	12348Q	9.0000	C	S,CA	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	80CW0180		
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	1	625.0000	C	S,TF	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	W1901		USE CHANGE W1901. ENTIRE SYS TRANS MTN TO TWIN LAKES RES, DIV 2
38	4617	IND P TM DVR TUNNEL NO 1	0	126	LINCOLN CREEK	PIT	NW	24	11	S	83	W	S	12348Q	625.0000	C	S,TT	1936-08-25	1934-09-18	1930-08-23	30941.29454	0	431	W1901		SEE DECREE FOR DIVERSION LIMITATIONS

Water Rights Report by Structure Name

State of Colorado																	HydroBase						
WD	ID	Water Right Name	Struct Type	Stream Information		Legal Location			Use Type	Decreed Amt	U	Adj. Type	Adj. Date	Padj Date	Apr Date	Admin No	O #	Priority No.	Court Case	Seq #	PIA	Alter ID	Comment
				#	Name	Cty	Q10	Q40															
38	4613	IVANHOE RESERVOIR TUNNEL	1	11	FRYINGPAN RIVER	PIT		NE SE 13 9 S 82 W S	1	35.0000	C	S	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	246	CA2621				TRANS MTN TO LAKE FORK CR DIV 2 FROM IVANHOE RES BRD OF WATER WORKS,
38	4613	IVANHOE RESERVOIR TUNNEL	1	11	FRYINGPAN RIVER	PIT		NE NE SE 13 9 S 82 W S	864PA1352	17.5000	C	S	1928-01-09	1927-09-28	1921-06-27	28394.26110	0	246	90CW0340				PUEBLO 50% INTEREST; ADDS ADD'L USES; RIGHT TO USE & REUSE; AP AT BOUSTEAD DIL W111 AKA FDR D HGT 1
38	4680	THOMPSON CR FEEDER DITCH	1	20	THOMPSON CREEK	PIT		SE NE SE 36 8 S 90 W S	1	13.0000	C	S,C	1949-08-25	1940-02-05	1937-08-01	32907.31989	2	467	CA3723				TRANS BASIN TO DIST 45 AKA FDR D HGT 1
38	4680	THOMPSON CR FEEDER DITCH	1	20	THOMPSON CREEK	PIT		SE NE SE 36 8 S 90 W S	1	19.0000	C	S	1949-08-25	1940-02-05	1937-08-01	32907.31989	2	467	CA3723				AKA FDR D HGT 1
38	4680	THOMPSON CR FEEDER DITCH	1	20	THOMPSON CREEK	PIT		SE NE SE 36 8 S 90 W S	1	5.0000	C	S,CA	1949-08-25	1940-02-05	1937-08-01	32907.31989	2	467	W1577				AKA FDR D HGT 1
38	4680	THOMPSON CR FEEDER DITCH	1	20	THOMPSON CREEK	PIT		SE NE SE 36 8 S 90 W S	1	0	C	S,C,TF	1949-08-25	1940-02-05	1937-08-01	32907.31989	2	467	06CW0166				CHANGE IN LOCATION
38	4680	THOMPSON CR FEEDER DITCH	1	20	THOMPSON CREEK	PIT		SE SW NE 35 8 S 90 W S	1	0	C	S,C,TT	1949-08-25	1940-02-05	1937-08-01	32907.31989	2	467	06CW0166				CHANGE IN LOCATION
38	4680	THOMPSON CR FEEDER DITCH	1	20	THOMPSON CREEK	PIT		SE SW NE 35 8 S 90 W S	1	8.0000	C	S,C,AB	1949-08-25	1940-02-05	1937-08-01	32907.31989	2	467	06CW0166				
38	4685	W DIV PR FOUR MI C & S	0	6	CRYSTAL RIVER	GAR		NE 9 9 S 88 W S	12489	830.0000	C	S,C,AP	1958-06-20	1952-10-24	1957-04-22	39193.00000	0	715	CA4613			3801458	FR AVALANCHE CANAL MAX AMT IN 4 MILE CANAL IS 830CFS. DIL 03CW41
38	4684	W DIV PR FOUR MI C & S(3MI)	0	2	THREE MILE CREEK	PIT			12489	200.0000	C	S,C,AP	1958-06-20	1952-10-24	1957-04-22	39193.00000	0	715	CA4613			3801458	THREE MILE HDGT. NO DECREED LOC DIL W44 & W789 & 95CW52
38	4684	W DIV PR FOUR MI C & S(3MI)	0	2	THREE MILE CREEK	PIT		1 6 S 89 W S	12489	150.0000	C	S,C,AP,AB	1958-06-20	1952-10-24	1957-04-22	39193.00000	0	715	03CW0041			3801458	ABANDONED BY COURT ORDER 7/11/12
38	4681	W DIV PR FOUR MI C & S(4MI)	0	4	FOUR MILE CREEK	PIT			12489	200.0000	C	S,C,AP	1958-06-20	1952-10-24	1957-04-22	39193.00000	0	715	CA4613			3801458	FOUR MILE HDGT. NO DECREED LOC DIL W44 & W789 & 95CW52
38	4681	W DIV PR FOUR MI C & S(4MI)	0	4	FOUR MILE CREEK	PIT		1 7 S 89 W S	12489	150.0000	C	S,C,AP,AB	1958-06-20	1952-10-24	1957-04-22	39193.00000	0	715	03CW0041			3801458	ABANDONED BY COURT ORDER 7/11/12
38	4717	WEST THREE MILE DITCH	1	2	THREE MILE CREEK	GAR		SE NW NW 19 7 S 89 W S	1	7.8000	C	S	1958-06-20	1952-10-24	1953-07-24	37825.00000	0	692	CA4613				HDGT NO 1
38	4717	WEST THREE MILE DITCH	1	2	THREE MILE CREEK	GAR		SE NW NW 19 7 S 89 W S	1	6.6000	C	S,C	1958-06-20	1952-10-24	1955-09-20	38613.00000	0	708	CA4613				HDGT NO 1
38	4717	WEST THREE MILE DITCH	1	2	THREE MILE CREEK	GAR		SE NW NW 19 7 S 89 W S	1	6.6000	C	S,CA	1958-06-20	1952-10-24	1955-09-20	38613.00000	0	708	W2724				HGT 1. TRANSBASIN TO DIST 45 TO FILL BARTON PORTER RES

Explanation of Codes:
 Struct Type: 0 - other, 1 - ditch, 2 - well, 3 - reservoir, 4 - spring, 5 - seep, 6 - mine, 7 - pipeline, 8 - pump, 9 - power plant

Use Codes: 0 - storage, 1 - irrigation, 2 - municipal, 3 - commercial, 4 - industrial, 5 - recreation, 6 - fishery, 7 - fire, 8 - domestic, 9 - stock, A - augmentation, B - export from basin, C - cumulative accretion to river, D - cumulative depletion from river, E - evaporation, F - federal reserve, G - geothermal, H - household use only, K - snow making, M - minimum streamflow, N - net effect of river, P - power generation, Q - other, R - recharge, S - export from state, T - transmountain export, W - wildlife, X - all beneficial use

Adj Type: AB - abandoned, AP - alternate point, C - conditional, CA - conditional made absolute, EX - exchange, O - original, S - supplemental, TF - transfer from, TT - transfer to

Admin Number is a number developed by DWR to provide a simple and efficient method of ranking decrees in order of seniority.