

STATE OF COLORADO

Colorado Water Conservation Board

Department of Natural Resources

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TO: Colorado Water Conservation Board Members

John W. Hickenlooper
Governor

FROM: Ted Kowalski, Chief Interstate & Federal Section
Suzanne Sellers, Interstate & Federal Section

Mike King
DNR Executive Director

DATE: June 29, 2011

Jennifer L. Gimbel
CWCB Director

SUBJECT: **Agenda Item 6, July 12-13, 2011 Board Meeting**
Interstate & Federal Section – Public Deliberation on the Board of
Commissioners for the County of Pitkin’s Recreational In-Channel Diversion
(RICD) Application in Case No. 5-10CW305

Background

Pitkin County is seeking a Recreational In-Channel Diversion (RICD) for the Pitkin County River Park Project, which will be located in and on the Roaring Fork River, just above its confluence with the Frying Pan River, adjacent to the Town of Basalt, Colorado. The Pitkin County River Park Project will consist of two control structure units, the “Upper Structure Unit” and the “Lower Structure Unit.” The RICD is proposed to operate from April 1st to September 15th of each year. Pitkin County is seeking a flow rate up to 1,500 cfs for the Upper Structure Unit and a flow rate up to 2,000 cfs for the Lower Structure Unit.

The Staff has reviewed the Applicant’s water court application, engineering report, supplemental engineering report and proposed decree (all attached). In addition, the Staff has reviewed the submissions from the Applicant, the Colorado River Water Conservation District, the Southeastern Colorado Water Conservancy District, the PT Barn Ranch LLC and Fall Line Properties, LLC, and the Elk Mountain Lodge. These submissions are all attached to this memo. This is the first RICD that the CWCB will consider since the passage of Senate Bill 06-037.

The Staff met with the Applicant, several objectors, and the Attorney General’s Office to discuss how the presentations will be organized before the Board. As a result of that meeting, the Staff proposes the following schedule:

1. Staff introduction (5 minutes)
2. Applicant’s presentation (45 minutes)
3. Objector’s presentations (45 minutes)
4. Public comment (15 minutes)
5. Staff presentation (20 minutes)
6. Applicant rebuttal (15 minutes)
7. Board deliberation

Procedure

Statute requires that the CWCB hold a public deliberation on a RICD application, and after that public deliberation, prepare findings of fact that consider the following factors:

- whether the adjudication and administration of the RICD would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements;
- whether the exercise of the RICD would cause material injury to existing instream flow (ISF) water rights; and
- whether the adjudication and administration of the RICD, in the amounts claimed, would promote maximum utilization of the waters of the State.

The CWCB RICD Rules provide a more detailed list of considerations related to each of the above factors. Staff's recommended Findings of Fact (attached) address each of these considerations. The Findings of Fact are currently due to the water court on July 29, 2011.

Staff's Evaluation

Staff has met with the Applicant several times to discuss the application, proposed decree, and other issues regarding the application, but there are a number of issues that remain, as described below.

The Statewide Water Supply Initiative (SWSI) Projected 2050 Municipal and Industrial (M&I) Gap Analysis by CDM (September 17, 2010) indicates that the M&I gap for Pitkin County will range between 2,800 to 3,500 acre-feet (af) per year. This M&I gap demonstrates that there will be a demand for water upstream of the proposed RICD in the future. Additionally, there is the potential that there may be additional demand to divert water through the Hunter Tunnel of the Fry-Ark Project. Upstream demands are further described in the statements by the objectors.

Statutory Limitations for Relatively Large Flow Rates

Table 1 below summarizes the proposed RICD and shows that the total volume of water requested exceeds the average historical volume of water by more than 100%.

Table 1. Summary of Proposed RICD

	Period	No. of Days	Flow Rate (cfs)	Total Volume of Water Represented by RICD Flow Rates (af)	Total Average Historical Volume (af)
Upper Structure Unit	April 1 – May 14	44	240	20,909	27,488
	May 15 – June 30	47	1,500	139,590	136,988
	July 1 – Aug 15	46	1,000	91,080	76,456
			Subtotal	251,579	240,932
Lower Structure Unit	May 14 – May 31	18	1,350	48,114	35,370
	June 1 - July 14	44	2,000	174,240	138,576
	July 15 – Sept 15	63	380	46,649	50,248
			Subtotal	269,003	224,194

In 2006, the Legislature added additional restrictions on RICDs, including section 37-92-305 (13)(f), C.R.S. (2010), which requires that if the total volume of water represented by the requested flow rates exceed 50% of the total average historical volume of water in that reach, then the RICD must be limited as follows:

- a call will not be administered unless at least 85% of the decreed flow rate will result from that call;
- the RICD is limited to three time periods; and
- the RICD is limited to one flow rate per time period.

As shown above, the application exceeds the 50% criteria. However, the Applicant's proposed decree does not comply with the requirements of section 37-92-305(13)(f).

Figure 1 (attached) illustrates the hydrograph at the proposed RICD using the Applicant's estimate of the hydrology from 1980 to 2010. This figure illustrates the time periods in which the proposed RICD could call given various estimated historical hydrographs. By examining the figure, one can see how the number of call periods would affect how well the RICD matches the natural hydrograph. An increase in the number of time periods could increase the frequency that a RICD may call. Also represented on the graph is the historic average and historic maximum flow at the proposed RICD location during days of call by senior downstream water rights. Although these calls have not been historically administered on the Roaring Fork River, they are somewhat indicative of the amount of river flow at Basalt that has been already been appropriated by senior water rights.

By seeking 6 time periods rather than the 3 time periods allowed by law, the Applicant would roughly double the amount of days of call that would result from the administration of the proposed RICD and will also lower the eighty-five percent limitation for administration of calls. Table 2 below summarizes the Applicant's estimate of the number of days the RICD would call using hydrology from 1980 to 2010. If the RICD were granted as requested, the number of calls on the river would range between 8 to 46 days with an average of 25 days of call. However, if the RICD were restricted as contemplated by law, the number of resulting calls on the river would be roughly half that. Additionally, by claiming different flow rates at each control structure, Pitkin County will be able to call for water even when such a call would produce less than 85% of the maximum claimed rate of flow.

Table 2. Number of Potential Days of Call by RICD

	Upper Structure (Days)				Lower Structure (Days)				Annual for Both Structures (Days)
	240 cfs	1500 cfs	1000 cfs	Annual	1350 cfs	2000 cfs	380 cfs	Annual	
Minimum	0	0	0	5	0	0	0	0	8
Average	5	6	3	13	2	4	5	12	25
Maximum	16	12	9	24	7	15	12	22	46

Furthermore, if the Applicant were granted their RICD as requested, the annual volume of water that may be called would range between 3,800 af and 105,800 af with an average of 52,000 af. However, if the RICD were restricted as contemplated by law, the annual volume of water that maybe be called would be roughly half that as indicated in Table 3 below. The Applicant has argued that the three flow rates limitation thwarts their ability to provide different recreational

experiences using several different structures. If more flow rates is important to the Applicant, then the Applicant could reduce the flow rates sought so that the total volume of water would not exceed 50% of the total average historical volume of water in that reach, thereby eliminating the additional statutory requirements.

Table 3. Potential Amount of Acre-feet that may be Called by RICD.

	Upper Structure (af)				Lower Structure (af)				Annual for Both (af)
	240 cfs	1500 cfs	1000 cfs	Annual	1350 cfs	2000 cfs	380 cfs	Annual	
Minimum	0	0	0	3,802	0	0	0	0	3,802
Average	2,453	16,479	5,174	24,105	6,553	17,628	3,932	28,113	52,041
Maximum	7,603	35,640	17,820	51,876	18,711	59,400	9,029	68,508	105,758

Material Injury to Existing Instream Flows

Elk Mountain Lodge, LLC submitted comments claiming that the construction of the RICD will harm the natural environment that the instream flow water rights were decreed to protect. The Staff agrees that the construction of an RICD could negatively impact the natural environment that the instream flow water rights seek to protect, and specifically this RICD could thwart the purposes for which the instream flow water rights were sought. However, the Staff does not have enough information at this time to understand whether this RICD construction will materially injure existing instream flow water rights. Therefore, the Staff recommends that the decree include a requirement that the RICD must be constructed, in consultation with the Colorado Division of Wildlife, to ensure that the RICD is constructed in such a manner so as not to impair the natural environment.

Extended RICD Season

Additionally in 2006, the Legislature modified the definition of a RICD in section 37-92-103(10.3) , C.R.S. (2010), by limiting the RICD season to a period “from April 1 to Labor Day of each year unless the applicant can demonstrate that there will be demand for the reasonable recreation experience on additional days”. The Applicant’s application proposed decree noticed a proposed RICD season to Labor Day, but the proposed decree indicates that the proposed RICD season will extend to September 15 instead of Labor Day. The application states that the Applicant “reserves the right to refine time periods,” but the request to extend the RICD season past Labor Day has not been properly noticed in the Division 5 Water Court Resume. Further, the Applicant has not provided any evidence that there is a demand for a reasonable recreation experience on those days after Labor Day.

Staff Recommendation

Staff recommends that the Board adopt Staff’s recommended Findings of Fact that finds the following:

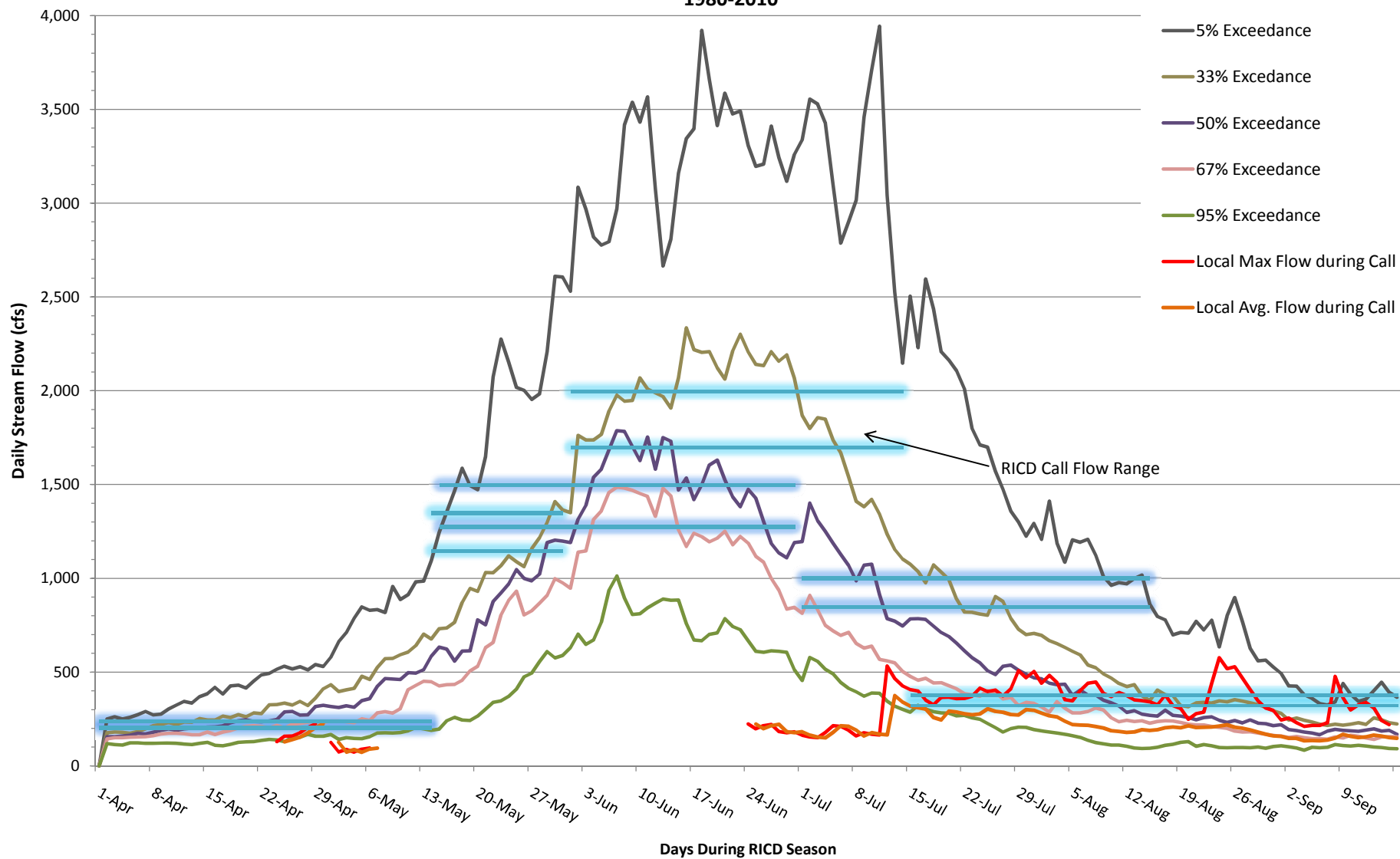
- The adjudication and administration of the RICD will materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements;
- Material injury to existing ISF water rights is not a basis for denial of the RICD, but Applicant should consult with the DOW before and during construction and maintenance

of the RICD structures to assure that these actions will not injure the natural environment that the ISF water rights protect; and

- The adjudication and administration of the RICD, in the amounts claimed, will not promote maximum utilization of the waters of the State.

Additionally, the Staff recommends that the Board instruct Staff to fully participate in the water court case to defend the Findings of Fact and to assure that the application fully complies with statute.

Figure 1.
Roaring Fork Stream Flow
at Proposed Pitkin County River Park
1980-2010



<p>DISTRICT COURT, WATER DIVISION NO. 5, COLORADO</p> <p>109 - 8th Street, Suite 104 Glenwood Springs, CO 81601-3361 (970) 947-3861</p> <hr/> <p>CONCERNING THE APPLICATION FOR WATER RIGHTS OF BOARD OF COUNTY COMMISSIONERS OF PITKIN COUNTY, COLORADO</p> <p>IN PITKIN COUNTY</p> <hr/> <p>Timothy J. Beaton, #10403 Aaron S. Ladd, #41165 Moses, Wittemyer, Harrison and Woodruff, P.C. P. O. Box 1440 Boulder, Colorado 80306-1440 Telephone: (303) 443-8782 Facsimile: (303) 443-8796 tbeaton@mwhw.com; aladd@mwhw.com</p>	<p>FILED Document CO Garfield County District Court 9th JD Filing Date: Dec 30 2010 3:59PM MST Filing ID: 35131615 Review Clerk: Kathy Hall</p> <hr/> <p>▲ COURT USE ONLY ▲</p> <hr/> <p>Case Number: 10CW <u>305</u></p>
<p align="center">APPLICATION FOR SURFACE WATER RIGHT APPROPRIATIONS FOR RECREATIONAL IN-CHANNEL DIVERSION</p>	

1. Name, address and telephone number of applicants:

Board of County Commissioners of Pitkin County
c/o John M. Ely, Pitkin County Attorney
530 East Main Street, Third Floor
Aspen, Colorado 81611
(970) 920-5190

2. Introduction: This application seeks two conditional recreational in-channel diversion ("RICD") water right appropriations for the Pitkin County River Park Project, which consists of two in-channel diversion and control structures that divert, capture, possess, and/or control the flow of the Roaring Fork River in its natural course to create reasonable recreation experiences in and on the water for all non-motorized boating and related recreational uses as described more fully below.

3. Name of structures: The Pitkin County River Park Project is comprised of two control structure units: (1) the Pitkin County River Park Project Upper Control Structures ("Upper Structure Unit") and (2) the Pitkin County River Park Project Lower Control Structures ("Lower Structure Unit").
4. Description of conditional water right appropriations:
 - A. Location of structures: The Pitkin County River Park Project will be located on the Roaring Fork River downstream of the Highway 82 Upper Bypass Bridge, upstream of the confluence of the Fryingpan and Roaring Fork Rivers, within the channel of the Roaring Fork River in Sections 17 and 18, Township 8 South, Range 86 West of the 6th P.M., Pitkin County, Colorado. The Pitkin County River Park Project will consist of two structure units within the Roaring Fork River. This application seeks two RICD water right appropriations, one for each of the two structure units, each of which will, by design, control, concentrate and direct the stream flows between the upper and lower extent of that structure units, independent of the other structure units, for the beneficial uses described below. A map depicting the upstream and downstream extent of the Pitkin County River Park Project, within which both structure units will be constructed, is attached as **Exhibit A**. Each of the two structure units will be constructed in the channel of the Roaring Fork River between the following two points:
 - i. The Pitkin County River Park Project Upstream Extent will be located in the SW¼ of the NW¼ of Section 17, Township 8 South, Range 86 West, 6th P.M., Pitkin County, Colorado, at a point 320 feet from the west section line and 1480 feet from the north section line of said Section 17.
 - ii. The Pitkin County River Park Project Downstream Extent will be located in the NE¼ of the NE¼ of Section 18, Township 8 South, Range 86 West, 6th P.M., Pitkin County, Colorado, at a point 265 feet from the east section line and 560 feet from the north section line of said Section 18.

The precise location of the two structure units and related water right appropriations, upon construction, may be located within this stretch of the Roaring Fork River. Provided that the structure unit locations remain within the stream reach described above, the actual locations will be described in the decree entered herein, identified by upper and lower control structures for each of the two structure units, or, if such decree is entered before construction of any or all of the structures, in subsequent applications for diligence or to make absolute the water rights claimed herein.

- B. Source: Roaring Fork River, tributary to the Colorado River.
- C. Appropriation:
- i. Date of appropriation: July 13, 2007.
 - ii. How appropriation was initiated: Engineering, field work, planning, considerations and decisions of the Board of County Commissioners, and posting notice of the appropriations.
 - iii. Date water first applied to beneficial use: Not applicable.
- D. Amounts claimed: Applicant claims two RICD water right appropriations for the following time periods and amounts, **CONDITIONAL**, as follows:
- i. **Upstream Structure Units**: Between April 1 and Labor Day of each year, this RICD water right appropriation will not exceed 1,500 cfs.
 - ii. **Downstream Structure Units**: Between April 1 and Labor Day of each year, this RICD water right appropriation will not exceed 2,000 cfs.
 - iii. Pitkin County hereby reserves the right to refine time periods and flow rates associated with either or both of the RICD water right appropriations claimed in this application. The RICD water right appropriations will not extend beyond the time periods listed above nor exceed the flow rates listed above for each RICD water right appropriations. Because any refinement in time periods and flow rates would constitute a reduction in the claims, the above constitutes notice to all interested parties.
 - iv. The above amounts are claimed as conditional. However, Pitkin County reserves the right to seek these amounts as absolute to the extent that the Pitkin County River Park Project or individual Structure units are constructed and flows are placed to beneficial use prior to the date of entry of a decree in this case.
- E. Beneficial use: Recreational uses including all beneficial uses associated with RICD water rights as permitted under Colorado Law as may be later changed or amended, including but not limited to non-motorized boating including kayaking, canoeing, rafting, tubing, floating, and paddling.

5. Name and address of owner of land upon which any new diversion structure or modification to any existing diversion structure is or will be constructed:

Town of Basalt
Tom Smith, County Attorney
600 E. Hopkins
Aspen, CO 81611
970-925-2600

Tom Kinney, Town of Basalt Water Rights Counsel
201 Main Street #301
Carbondale, CO 81623-2216
970-963-3900

Fredrick S. Arbaney Trust
Josephine Arbaney, Trustee
252 Cottonwood Drive
Basalt, CO 81621

Applicant
c/o John M. Ely, Pitkin County Attorney
530 East Main Street, Third Floor
Aspen, Colorado 81611
(970) 920-5190

WHEREFORE, Applicants respectfully request this Court enter a decree granting the two conditional recreational in-channel diversion water right appropriations claimed in this application for the Pitkin County River Park and granting such other relief as may be appropriate.

Respectfully submitted this 30th day of December, 2010.

MOSES, WITTEMYER, HARRISON AND
WOODRUFF, P.C.

A handwritten signature in black ink, appearing to read "Timothy J. Beaton", written over a horizontal line.

Timothy J. Beaton, #10403
Aaron S. Ladd, #41165

ATTORNEYS FOR APPLICANT, BOARD
OF COUNTY COMMISSIONERS OF
PITKIN COUNTY, COLORADO

*E-FILED PURSUANT TO C.R.C.P. 121 Duly signed original on file at the law offices of
Moses, Wittemyer, Harrison and Woodruff, P.C.*

Board of County Commissioners of Pitkin County, Colorado

Case No. 10CW 305

Page 6

VERIFICATION

STATE OF COLORADO)

Garfield) ss.
COUNTY OF PITKIN)

James F. Pearce, being first duly sworn upon oath, deposes and says that he is the water rights consultant, for applicant herein, that he has read the foregoing Application for Surface Water Right Appropriations for Recreational In-Channel Diversion, knows the contents thereof, and that the same is true to the best of his knowledge and belief.

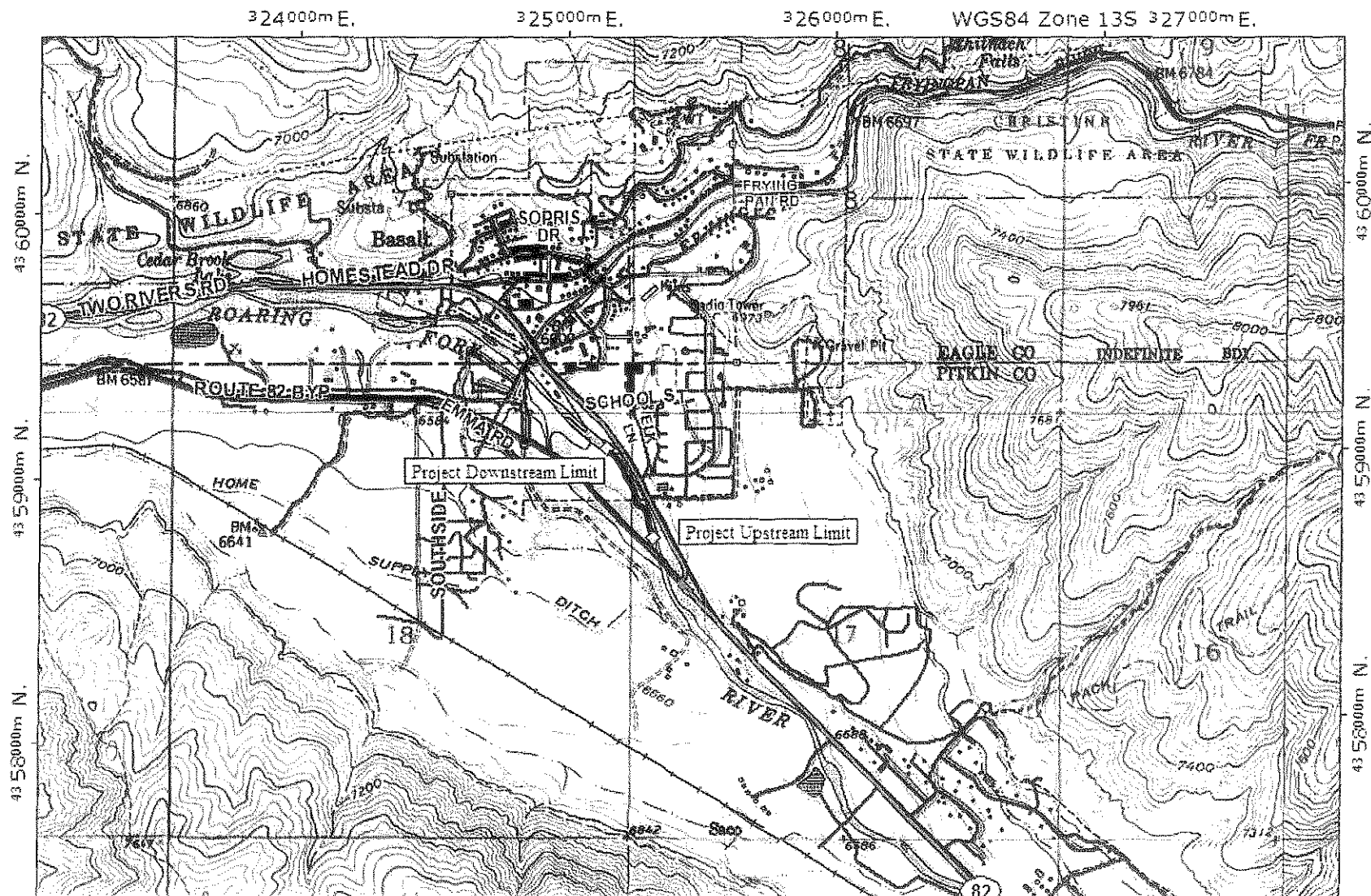
James F. Pearce
James F. Pearce

SUBSCRIBED AND SWORN to before me this 30th day of December, 2010.
Witness my hand and official seal.

My commission expires: _____
My Commission Expires
05/16/2014

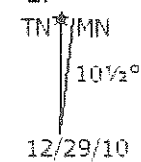
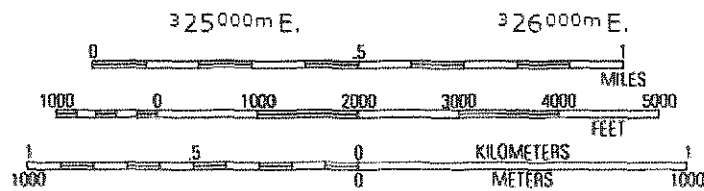


Cath
Notary Public



323000m E. 324000m E. 325000m E. 326000m E. WGS84 Zone 13S 327000m E.

Exhibit A - Location of Pitkin
County River Park RICD
Water Rights
12/29/2010



**Report in Support of the Pitkin County River Park
Recreational In-Channel Diversions
Water Rights Application
Case No. 10CW305, Water Division No. 5**

February 2011

Prepared for:

Pitkin County Board of County Commissioners

Prepared by:

Mr. James F. Pearce
Canyon Water Resources, LLC
685 Canyon Creek Driver
Glenwood Springs, CO 81601

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1 Introduction

This report provides supporting information for the Pitkin County River Park recreational in-channel diversions in the Roaring Fork River at Basalt. In particular, the report responds to the Colorado Water Conservation Board's Rules 7 and 8 regarding recreational in-channel diversions (RICDs). This report may be supplemented as the Application for the RICDs proceed.

On June 7, 2006, Pitkin County held their first public meeting discussing a RICD and in July of 2007 co-sponsored a study with the Town of Basalt to develop a Conceptual Design Report for a river park on the Roaring Fork River above Basalt. In 2008, River Restoration, Inc. was awarded a contract to design a whitewater facility to meet a range of recreational experiences associated the Pitkin County River Park (River Restoration, 2011). River Restoration's Design Report provides a description of the recreational experiences, the hydraulics and design of the structures, and the flow rates for the RICDs.

This report takes the information regarding the design of the RICDs, hydrologic, and water use data to address the CWCB RICD Rules 7 and 8. For the most part, the sections of this report "stand alone" and address specific requests for information in the CWCB rules. Section 2 describes the timing and amount of the RICD water rights. Section 3 presents information the stream flows at the proposed park and other key locations. Section 4 contains five sub-sections and covers administration, water use, provides the historical call records, instream flows, and the Compact Entitlement. Section 6 summarize the conclusions and Section 7 provides the references used throughout this report.

The figures and tables for each section follow the text of the section. Attached to this report are Appendices showing the estimated historical daily stream flow at the Pitkin County River Park and summarizing certain conditional water rights.

2 Pitkin County Recreational In-Channel Diversion Amount and Timing

The Board of County Commissioners of Pitkin County, Colorado has filed an application with the Division 5 Water Court to appropriate Recreational In-Channel Diversions in the Roaring Fork River (Case No. 10-CW-305, Water Division No. 5). The application seeks entry of a decree for the purpose of maintaining flows at levels to achieve specific reasonable recreational whitewater boating and other recreational experiences.

The category of whitewater boating experience sought by Pitkin County is freestyle whitewater (River Restoration, 2011). There are three main categories of whitewater sport: slalom, extreme and freestyle. Each category has equipment modified for that use. Freestyle whitewater appeals to a broader population than the other categories.

Freestyle whitewater can be practiced at a single whitewater feature and repeated multiple times by navigating upstream after being washed downstream. A freestyle whitewater feature is created where there is a “hydraulic jump,” which is a natural phenomenon resulting in an abrupt rise of the water surface. A hydraulic jump in the river channel is what creates a wave, a hole or a wave-hole (River Restoration, 2011).

Pitkin County is proposing two features located just upstream of the confluence with the Fryingpan River in Pitkin County.¹ Each feature is designed to appeal to different skill levels at differing flows. Similar to ski runs, freestyle whitewater features are associated with skill levels from beginner to advanced (i.e., green, blue, and black, double black).

This report refers to the upstream most structure as the Upper Structure and the downstream most structure as the Lower Structure. The Application for the Pitkin County River Park RICDs request water rights with the following flow rates and for the following periods:

Table 2-1: Proposed Pitkin County River Park RICD Water Rights Amounts and Timing

Structure	Period	Flow Rate (cfs)	Experience
The Upper Structure Unit	April 1 – May 14	240	Blue
	July 1 – August 15	1,000	Black
	May 15 – June 30	1,500	Double Black
The Lower Structure Unit	July 15 – Sept. 15	380	Green
	May 14 – May 31	1,350	Blue
	June 1 - July 14	2,000	Black

¹ The Pitkin County River Park is located approximately 150 miles upstream of the Colorado-Utah State Line and approximately 24 miles upstream of the confluence of the Roaring Fork and Colorado Rivers.

3 Stream Flows

This section provides information on stream flows as necessary to evaluate the Pitkin County RICDs. The primary data are the estimated daily stream flows for the Roaring Fork River at the Pitkin County River Park. The estimated daily stream flows are for the dates April 1 – September 15 and the period 1980 – 2010. The historical flows help illustrate the appropriateness of the timing and rates of the proposed RICD water rights.

Also, this section includes monthly average flows for the Colorado River near Cameo and the Colorado River near the Colorado-Utah State Line. The flow at Cameo serves as a first check on “mainstem” administration and provides a general indication of water supplies in the Colorado River Basin upstream of the confluence of the Gunnison River. The Colorado River near the Colorado-Utah State Line serves as a reference for the proportion of Roaring Fork River Basin flows as compared to the flow of the Colorado River leaving the State.

Figure 3-1 illustrates the locations of the stream gauges used in this analysis and shows the extent of the Roaring Fork River basin above Basalt (the River Park is located just downstream of the “ROAFRYCO” stream gauge). The data used in this analysis includes daily stream flow measurements recorded by the United States Geologic Survey or State of Colorado Department of Natural Resources; water use/diversion records from the State of Colorado CDSS databases; and stream gauge and diversion structure locations from the CDSS Geographical Information System data files.

3.1 Daily Stream Flows for the Roaring Fork River above Basalt

This section discusses the estimated historical daily stream flows for the Roaring Fork River at the Pitkin County River Park. The estimated daily flows include dates from April 1 through September 15 for the period 1980 – 2010. The historical data provide information regarding the timing of the flows associated with the proposed RICD water rights.

Table 3-1 shows the monthly average historical flow rate at the Pitkin County River Park (Appendix A provides the daily values). From April 1 to September 15 the flow of the Roaring Fork River above Basalt rises and then falls with the annual run-off. The river begins ramping up in mid-May and typically “peaks” in June with daily highs generally in the 1,000 to 3,500 cfs range. By the first part of July the run-off slows and the river’s flow decreases through July and August. By the middle of September the run-off is over and river flows return to essentially “baseflow” levels typically between 150 to 450 cfs.

Figure 3-2 is a chart summarizing certain statistics associated with the historical daily flows at the proposed Pitkin County River Park. The chart indicates the 5th and 95th percentile values, the median, and the 33rd and 67th percentiles. The chart does not represent any one year of flow, but provides information on how often a given day (x-axis) will have at least a certain flow rate (y-axis). This chart is used again in Section 5 to illustrate how the historical daily flows compare to the proposed flow rates for the Pitkin County River Park RICDs.

The estimates of the historical daily flows were developed from multiple sources of data and by three different methods. Since 2007, the Colorado Department of Natural Resources has operated and maintained a stream gauge on the Roaring Fork River above Basalt. The so-called “ROAFRYCO” gauge is ideally situated with respect to measuring flows at the proposed River Park. So, for the years 2007 – 2010, this analysis uses the average daily flow measured and recorded at ROAFRYCO.

For the years 1998 – 2006, stream flows above Basalt were derived using a daily stream flow accounting model. The model uses nearby stream gauges to estimate the daily flow at the River Park. Figure 3-3 provides the locations of diversion structures, irrigated areas, and other features associated with the daily accounting model. The model accounts un-gauged inflows and diversions and return flows for certain significant structures to estimate the daily flow at the River Park.

The primary stream gauges² used in the accounting model only have records back to 1998. So, for 1980 – 1997, daily stream flows at the Park were estimated by multiple regression analysis using the modeled and measured stream flows at the park (1998 – 2010) correlated with long-term Roaring Fork River basin stream gauges Roaring Fork River at Aspen and Crystal River near Avalanche. The regressions exhibit acceptable statistics and provide the daily estimates for 1980 – 1997.

This analysis considered additional information when estimating the stream flow at the RICDs. The additional information includes diversion records for Home Supply, Forker, Grace and Shehi, RCF, Harris and Reed, Northside Pioneer, and Robinson Ditches. Stream flow records for the Roaring Fork River at Aspen, the Roaring Fork near Emma, the Crystal River near Avalanche, West Sopris Creek, the Fryingpan-Pan River below Ruedi Reservoir, and Cattle Creek stream gauges were used in estimating the stream flows at the RICDs. Finally, stream flow accounting tables and correlations provide additional details related to this analysis.

² Roaring Fork River near Emma and Fryingpan River below Ruedi Reservoir.

3.2 Stream Flow for the Colorado River near Cameo and near the Colorado-Utah State Line

This sub-section presents stream flow data for the Colorado River near Cameo and the Colorado River near the State Line. The Cameo gauge is important because stream flows at this location are key to administering the senior agricultural water rights in the Grand Valley (i.e., the so-called Cameo rights). Data from the State line gauge provide a way to compare flows leaving the State to the flows in the Roaring Fork River basin above Basalt.

The Colorado River above Grand Junction (Table 3-2) generally “peaks” in late May or June with the average monthly flows in wet years exceeding 10,000 cfs (up to 20,000+ cfs in the wettest years). In July and through the end of the irrigation season, flows decrease with the end of run-off and monthly average flow drops to approximately 5,700 and then to approximately 2,500 cfs in September and October. In the drier years and when Cameo flows are less than about 2,260³ cfs, the Grand Valley senior rights may initiate a call⁴. Table 3-2 provides the monthly average stream flow for the Colorado River near Cameo for the period January 1980 – September 2009.

Table 3-3 provides the monthly average stream flow for the Colorado River near the Colorado-Utah State Line for the period January 1980 – February 2010. The rise and fall of the Colorado River at the State Line follows the same general timing as indicated by the Cameo stream gauge records. For the drier years, peak monthly flows occasionally reached 10,000 cubic feet per second and in the extremely dry year of 2002 topped out at approximately 2,700 cfs in May and June. In the wetter years the peak flows reached into the 20,000 to 40,000 cfs range.

Supplemental information related to this section is the average daily flows recorded by the USGS for the Cameo and State Line locations and other stream flow and water use information.

³ The total flow rate of the “Grand Valley” senior water rights totals 2,260 cfs (see CDSS link). Operation of the Orchard Mesa Check may limit diversions to less than the total flow rate.

⁴ Section 4.2 discusses administration of the Colorado River above the Grand Junction and the Roaring Fork River.

Figure 3-1: Roaring Fork River Basin

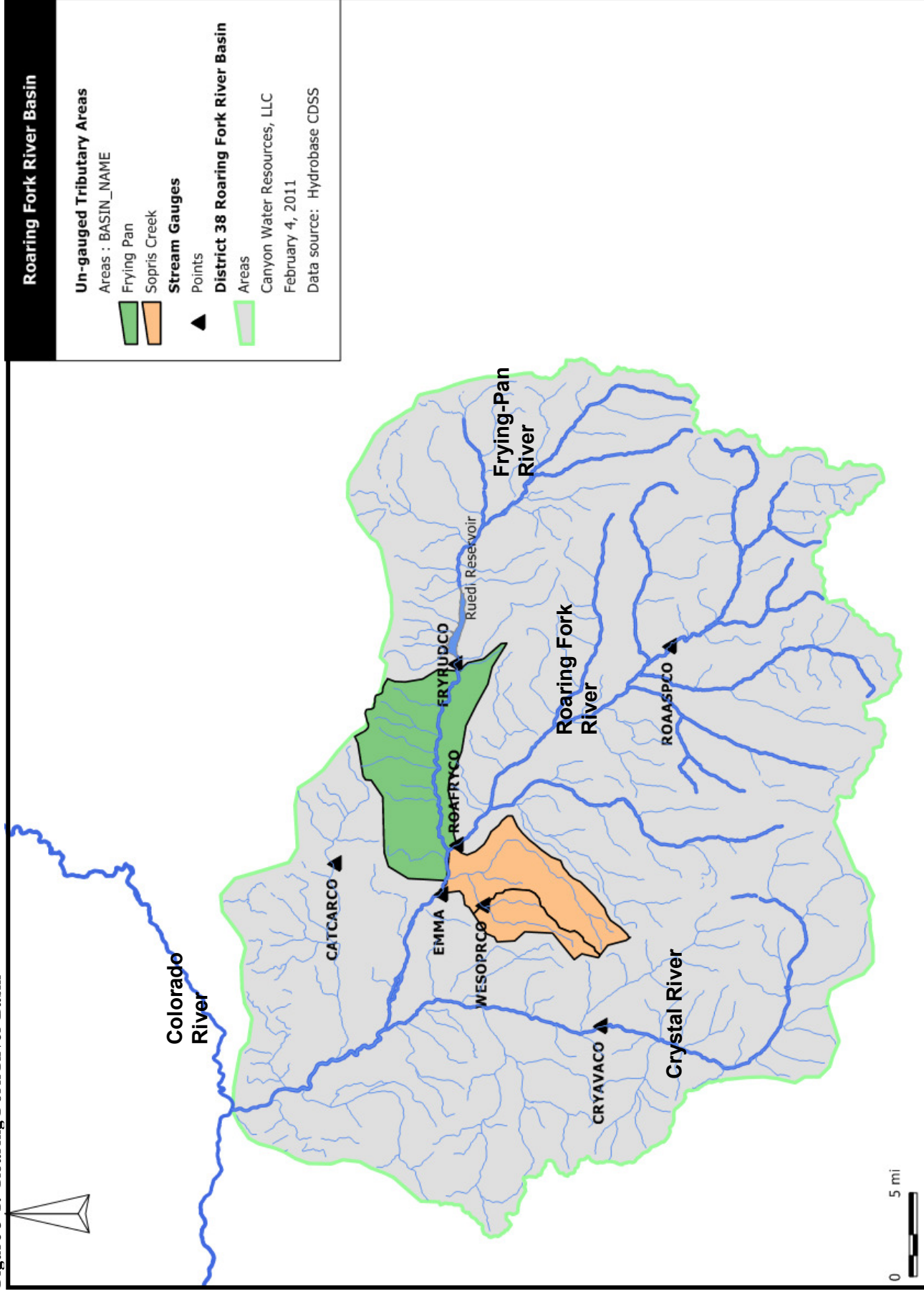


Figure 3-2: Statistical Summary of Daily Stream Flows at the Pitkin County River Park

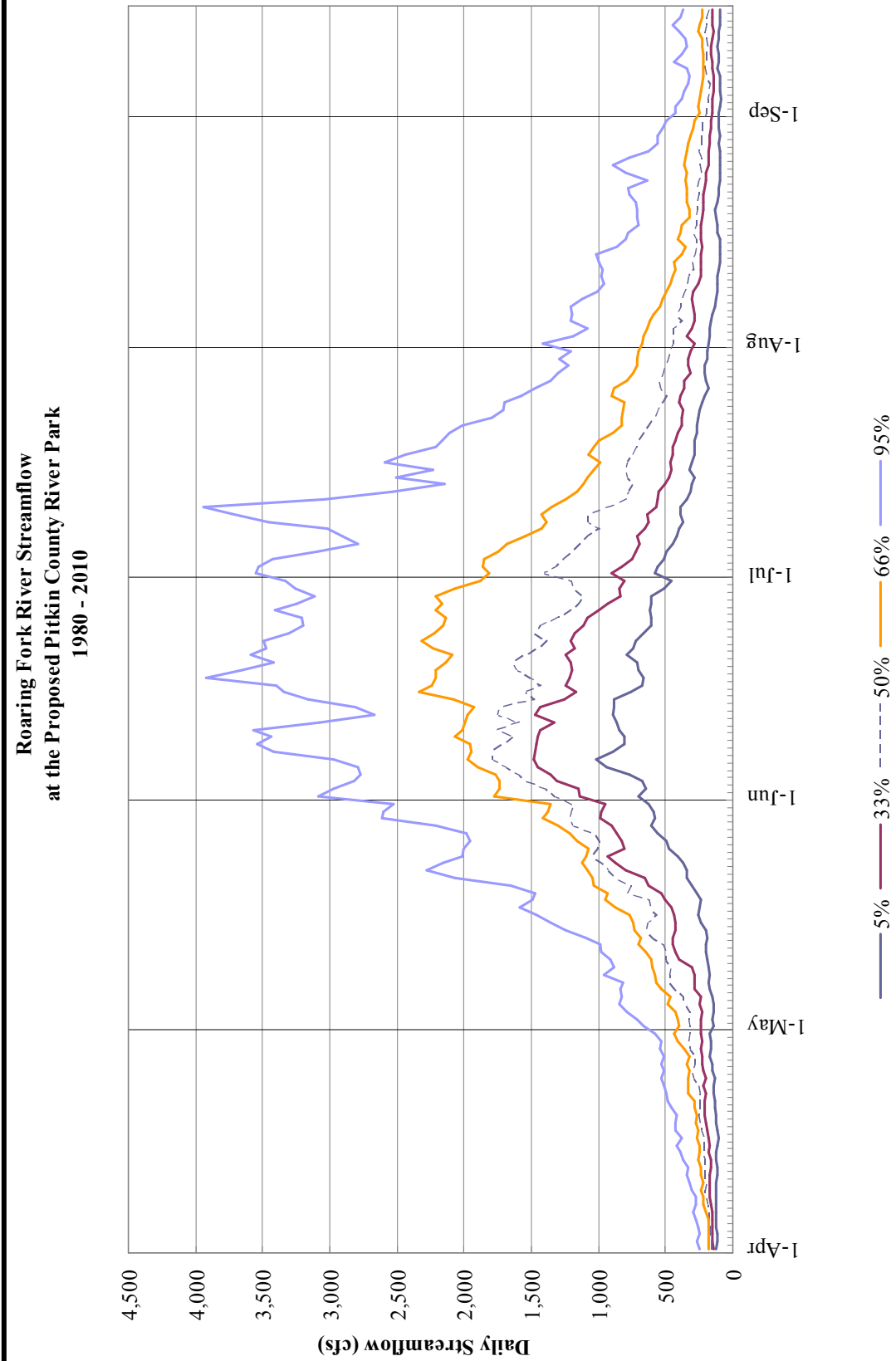


Figure 3-3: Roaring Fork River near Basalt

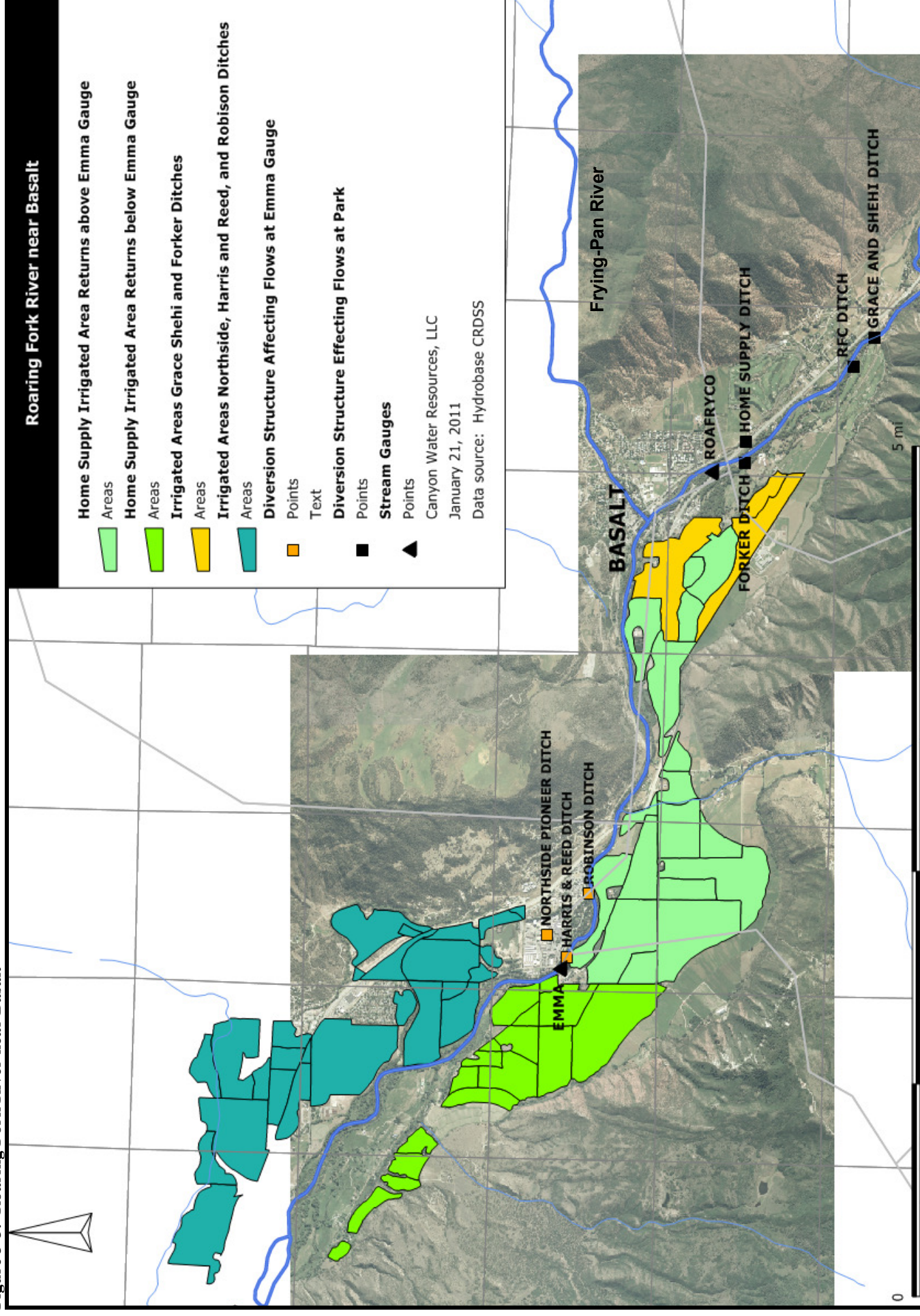


Table 3-1: Average Monthly Flow at the Pitkin County River Park

Discharge, cubic feet per second,

	Apr	May	Jun	Jul	Aug	15-Sep
1980	217	602	2,704	1,284	304	162
1981	215	423	1,103	396	137	142
1982	250	561	1,817	1,352	540	330
1983	134	485	2,511	2,246	817	249
1984	188	1,490	2,790	2,609	795	334
1985	370	1,077	2,773	1,477	406	223
1986	343	793	2,293	1,550	659	387
1987	311	943	1,768	673	300	171
1988	202	557	1,352	468	216	166
1989	323	662	1,079	502	260	141
1990	195	419	1,369	526	191	114
1991	161	698	1,714	858	276	248
1992	242	807	947	562	364	193
1993	204	967	2,461	1,623	628	343
1994	230	743	1,392	394	206	149
1995	185	450	2,683	4,108	1,340	403
1996	215	891	1,815	963	306	188
1997	263	843	2,694	1,321	692	301
1998	285	780	1,194	1,065	416	246
1999	126	688	2,018	1,151	513	293
2000	249	902	1,061	374	192	174
2001	169	761	1,018	382	285	167
2002	190	218	379	144	59	42
2003	174	808	1,413	355	109	163
2004	246	527	939	443	148	108
2005	211	704	1,510	1,000	388	194
2006	403	1,056	1,388	530	235	136
2007	285	890	1,297	468	223	172
2008	261	1,104	2,816	1,388	495	261
2009	305	1,455	1,680	937	255	143
2010	310	592	1,706	483	247	113
Mean of Monthly Discharge (cfs)	241	771	1,732	1,020	387	208

Table 3-2: Stream Flow Colorado River near Cameo

YEAR	Monthly mean in cfs (Calculation Period: 1980-01-01 -> 2009-09-30)												(acre-feet)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1980	1,804	1,959	2,028	3,168	10,420	14,870	5,363	2,381	2,052	1,876	1,783	1,637	2,976,800
1981	1,369	1,185	1,193	1,880	3,259	5,499	2,403	1,745	1,861	1,892	1,627	1,426	1,528,700
1982	1,529	1,355	1,581	2,282	6,857	11,540	6,674	3,392	2,980	2,802	2,475	1,898	2,736,900
1983	1,696	1,700	1,797	2,214	8,783	23,780	16,280	6,538	2,755	2,494	2,533	2,393	4,402,000
1984	2,230	2,195	2,709	4,148	20,290	25,830	15,450	6,571	4,271	3,732	3,253	3,002	5,651,900
1985	2,621	2,476	2,834	6,377	16,440	17,160	7,190	3,555	2,541	3,205	2,928	2,417	4,207,800
1986	2,375	2,775	3,365	6,883	12,700	16,990	8,401	3,543	3,238	3,427	2,991	2,501	4,174,300
1987	2,158	2,222	2,362	3,730	8,229	7,653	3,077	2,484	2,140	2,046	2,094	1,789	2,412,300
1988	1,668	1,691	1,905	3,118	6,337	7,794	3,005	2,140	2,041	1,733	1,709	1,535	2,092,100
1989	1,475	1,467	1,843	3,239	5,287	5,337	2,816	2,377	1,953	1,903	1,574	1,370	1,848,600
1990	1,202	1,290	1,352	1,882	3,085	6,581	2,998	2,055	1,936	1,883	1,634	1,253	1,638,100
1991	1,385	1,323	1,392	2,060	6,449	9,885	3,958	2,412	2,365	2,002	1,970	1,583	2,219,200
1992	1,392	1,443	1,629	2,642	5,874	4,681	2,891	2,473	2,242	1,865	1,984	1,488	1,846,400
1993	1,389	1,387	1,893	2,993	13,680	15,320	7,941	3,283	2,596	2,432	2,162	1,891	3,436,900
1994	1,849	1,762	2,053	2,845	6,203	6,209	2,394	2,290	2,186	2,046	1,673	1,594	1,997,200
1995	1,521	1,564	1,937	2,321	5,611	19,500	17,060	5,683	3,152	2,778	2,601	2,246	3,980,300
1996	2,058	2,389	2,790	5,568	12,570	13,830	5,543	2,507	2,399	2,503	2,315	2,005	3,407,300
1997	2,035	1,918	2,748	4,058	13,830	21,610	7,080	5,044	3,618	3,461	2,554	2,381	4,243,500
1998	2,320	2,357	2,774	3,848	10,540	8,963	5,493	3,322	2,586	2,656	2,482	1,967	2,974,800
1999	1,879	1,786	1,801	2,169	5,665	12,800	6,021	3,523	3,084	2,960	2,167	1,757	2,751,800
2000	1,817	1,815	1,889	2,975	7,986	7,225	2,919	2,604	2,406	2,159	1,866	1,644	2,250,700
2001	1,485	1,431	1,502	2,319	6,301	5,445	2,747	2,702	2,469	2,058	1,721	1,293	1,898,800
2002	1,329	1,215	1,357	2,214	2,683	2,606	1,699	1,520	1,296	1,341	1,455	1,132	1,197,400
2003	1,081	1,073	1,200	1,723	6,855	8,491	2,774	2,285	2,376	2,335	1,630	1,433	2,006,400
2004	1,273	1,267	1,645	2,164	4,571	4,431	2,427	1,949	2,038	2,239	1,889	1,412	1,647,400
2005	1,580	1,333	1,450	2,907	8,059	10,440	5,562	2,866	2,701	2,662	2,369	1,850	2,641,300
2006	1,697	1,627	2,042	4,603	9,854	7,812	3,542	2,677	2,705	2,813	2,129	1,683	2,605,400
2007	1,443	1,762	2,502	3,104	7,200	7,461	3,316	2,536	2,665	2,469	1,785	1,803	2,295,400
2008	1,540	1,791	1,889	3,106	10,950	17,170	8,647	3,417	3,025	2,665	1,967	1,742	3,493,700
2009	1,674	1,636	1,777	3,320	12,960	13,380	6,652	3,053	2,493				
Mean of Monthly Discharge	1,700	1,710	1,970	3,200	8,650	11,300	5,740	3,100	2,540	2,430	2,110	1,800	Annual Average (acre-feet) 2,752,500

Table 3-3: Colorado River near Colorado-Utah State Line

YEAR	Monthly mean in cfs (Calculation Period: 1980-01-01 -> 2010-02-30)												Annual Total (acre-feet)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1980	3,996	4,139	4,169	6,551	20,300	22,290	7,143	3,073	3,535	3,775	4,572	4,297	5,299,500
1981	3,844	3,123	2,681	2,727	4,600	6,516	2,954	2,278	3,322	4,017	3,528	3,131	2,577,400
1982	2,981	3,831	4,256	4,836	12,340	16,370	8,769	5,125	5,735	5,749	5,226	4,579	4,814,300
1983	4,363	4,210	4,384	4,574	17,540	41,400	25,650	10,190	4,991	5,167	5,235	5,262	8,022,000
1984	4,982	5,501	6,268	9,017	37,960	43,120	22,520	9,675	6,767	7,065	6,490	5,655	9,955,900
1985	6,129	5,996	7,401	15,600	28,570	25,280	9,789	5,013	5,119	7,210	6,353	5,993	7,749,800
1986	5,458	5,950	7,486	13,070	22,370	24,070	14,200	5,612	6,601	7,672	6,925	5,894	7,560,000
1987	5,116	5,517	6,174	9,163	15,520	11,080	5,023	4,225	3,892	4,267	4,650	3,766	4,729,600
1988	3,080	3,924	4,635	5,788	8,551	9,108	3,684	2,887	3,752	3,156	3,296	2,875	3,302,300
1989	2,593	2,861	3,998	5,731	6,651	6,234	3,064	3,281	2,862	3,274	2,851	2,240	2,753,500
1990	2,169	2,112	2,229	2,503	4,078	7,131	3,235	2,336	2,998	3,150	3,013	2,226	2,243,100
1991	2,272	2,851	2,714	3,729	10,610	14,320	5,289	3,592	4,379	3,887	4,355	3,666	3,720,300
1992	3,057	2,993	3,122	4,988	10,170	7,415	4,236	3,577	3,497	3,223	3,511	2,610	3,161,300
1993	2,535	3,215	5,384	7,737	27,350	25,390	10,970	5,097	4,604	4,568	4,768	4,320	6,391,400
1994	3,795	3,234	3,626	4,419	9,912	7,857	2,893	2,761	3,342	3,822	3,383	3,194	3,151,600
1995	2,725	2,724	4,149	5,540	15,040	33,590	29,650	8,360	4,731	5,689	5,945	5,239	7,443,800
1996	4,495	4,593	5,263	9,181	18,460	17,620	7,816	3,225	4,375	4,622	4,991	4,359	5,369,500
1997	4,587	4,794	7,157	9,932	22,500	29,980	10,260	7,490	7,174	7,356	6,025	5,365	7,397,800
1998	5,049	4,682	5,534	7,764	18,470	12,450	7,132	4,330	4,248	4,877	4,608	3,486	4,985,200
1999	3,404	3,214	3,221	3,387	9,775	15,190	8,085	6,824	6,041	5,618	4,094	3,466	4,363,100
2000	3,059	2,895	3,242	5,245	10,940	8,640	3,589	3,368	3,640	3,394	3,268	2,867	3,266,800
2001	2,597	2,567	2,834	3,372	9,017	6,310	3,047	3,521	3,505	3,277	3,074	2,505	2,752,700
2002	2,399	2,233	2,347	2,734	2,640	2,431	1,675	1,597	2,094	2,455	2,603	1,980	1,640,300
2003	1,876	1,822	2,030	2,341	9,043	10,100	3,066	2,660	3,637	3,223	2,822	2,391	2,715,600
2004	2,159	2,115	2,809	3,900	6,615	5,309	2,942	2,474	3,417	3,933	3,394	2,655	2,517,100
2005	3,117	3,050	3,585	7,511	16,110	15,750	7,121	4,035	4,194	4,688	3,928	3,308	4,609,100
2006	3,165	3,012	3,453	7,975	13,140	9,289	4,836	4,182	4,595	5,801	4,326	4,269	4,105,100
2007	3,864	3,460	4,709	5,048	10,200	8,872	3,786	3,662	4,488	4,617	3,913	3,725	3,640,600
2008	3,636	4,394	3,758	8,474	22,020	25,970	10,850	4,871	4,926	4,514	3,734	3,206	6,054,400
2009	3,229	3,191	3,493	6,154	20,390	17,910	8,503	4,066	3,673	3,959	3,254	2,675	4,856,500
2010	2,502	2,536											
Mean of Monthly Discharge (cfs)	3,490	3,570	4,200	6,300	14,700	16,200	8,060	4,450	4,340	4,600	4,270	3,710	Annual Average (acre-feet) 4,705,000

4 River Administration, Call Records, Potential Exchanges and Water Use, and Compact Entitlement

This section provides information regarding river administration and the Pitkin County RICDs. Section 4.1 discusses the administration of the Pitkin County RICD and explains the statutory limitations on the RICDs. Section 4.2 describes historical administration of the Roaring Fork River and provides a “basin-wide” framework to understand the administration affecting District 38. Section 4.3 discusses examples of potential beneficial consumptive uses that will serve development and explains how the RICD water rights will not impair development of consumptive uses. Section 4.4 covers the CWCB instream flows as requested in Rules 7 and 8. Finally, Section 4.5 discusses the Compact Entitlement as requested by the Rules.

The data referenced in this section include the Division 5 call records for the period of record 1987 – 2010, the water rights tabulation for District 38 and the Colorado River downstream of Glenwood Springs, portion of the Legislation for RICD, and information regarding water supplies and services in the Roaring Fork River above Basalt.

4.1 Administration of the Pitkin County RICD

The Pitkin County RICDs are non-consumptive and will be junior in-priority to all rights applied for in 2009. The only water uses that the RICDs may potentially affect are un-decreed water uses upstream of the proposed park. Consequently, the Pitkin County RICDs will not materially injure any existing water rights including exchanges through the reach.

Even at that, there are other limitations on RICD water rights. The RICD statute limits RICDs to the “kayak season” (April 1 through Labor Day) and there are volumetric and other timing constraints. The following excerpts from the RICD legislation (§37-92-305 (13), C.R.S.) describe other limitations on a RICD water right:

“(e) If the other elements of the appropriation are satisfied, the decree shall specify the total volume of water represented by the flow rates decreed for the recreational in-channel diversion. For purposes of this subsection (13), the "total volume of water represented by the flow rates decreed for the recreational in-channel diversion" means the sum of the flow rates claimed in cubic feet per second for each day on which a claim is made multiplied by 1.98.

(f) If the court determines that the total volume of water represented by the flow rates decreed for the recreational in-channel diversion exceeds fifty percent of the sum of the total average historical volume of water for the stream segment where

the recreational in-channel diversion is located for each day on which a claim is made, the decree shall:

(I) Specify that the state engineer shall not administer a call for the recreational in-channel diversion unless the call would result in at least eighty-five percent of the decreed flow rate for the applicable time period;

(II) Limit the recreational in-channel diversion to no more than three time periods; and

(III) Specify that each time period is limited to one flow rate.”

The flow rates and timing claimed by the Pitkin County River Park RICDs are in the category limited by paragraph (f) and the Pitkin County Application conforms to the resulting statutory constraints.

4.2 River Calls Affecting the Roaring Fork River

The call records indicate three general administrative scenarios for water rights on the Roaring Fork River. First, the “Cameo” call may curtail junior priorities in the Roaring Fork basin when the senior agricultural rights in the Grand Valley (near Grand Junction) do not have an adequate water supply. When the large storage reservoirs are in part filling with their available inflow and in part, by-passing flows to satisfy a downstream senior right, then a “by-pass” call may affect the Roaring Fork River. Finally, if a water right on the Roaring Fork River places a call, then junior water rights on the Roaring Fork River and tributaries above the calling right are curtailed.

The call records for the mainstem calls (Table 4-1) indicate that the senior Grand Valley rights may call out junior diversions on the Roaring Fork River during the early and late portions of the irrigation season. For the years 1987 – 2010 (24 years), there were 15 years with a call and 9 years without a Cameo call. As one may expect, 2002 had the most days on call, 122 days, with 88 consecutive days from July 9 to October 4, 2002. The combined flow rate of the senior Grand Valley water rights is 2,260 cfs⁵ (CDSS, Colorado River Model Users Manuel). By-pass calls result in curtailment of junior priorities above Cameo.

In 2002, a so-called “by-pass” call affected Division 38 (Table 4-2). A by-pass call results when the larger headwaters storage reservoirs (e.g., Green Mountain, Dillon and Ruedi) are in part filling with their available inflow and in part, by-passing inflow to satisfy a downstream senior right. As I understand it, the administration of the river under a by-pass call is based on the priority of the by-passing structure and the location of the structure to which flow is being by-passed.

⁵ Certain operations associated with the Orchard Mesa Check may reduce diversions to rates less than 2,260 cfs.

To my understanding, there are very rarely “local” calls affecting the mainstem of the Roaring Fork River above Glenwood Springs (personal communication with Bill Blakesly, Water Commissioner, District 38). In other words, rights on the mainstem of the Roaring Fork River generally have sufficient supplies. Table 4-3 shows the only recorded Roaring Fork River “mainstem” calls and they are calls for the CWCB in-stream flow in the reach from the confluence of Difficult Creek to the confluence of Maroon Creek above Aspen.

4.3 Effect of the Pitkin County River Park RICD on Water Uses

The CWCB Rules request information regarding the proximity of the RICD to “suitable points of diversion or storage for consumptive beneficial uses” (Rule 7.a.iii. and 7.a.iv.). This section provides examples of “suitable points of diversion” by evaluating the Division 5 water rights tabulation and giving examples of other available water supplies.

This analysis identifies conditional water rights located above Basalt as examples of suitable points of diversion or storage for beneficial uses. In round numbers there are approximately 280 conditional water rights amounting to 21,000 acre-feet of storage and 320 cubic feet per second of diversion rights in the Roaring Fork River basin above Basalt (Figure 4-1 and Appendix B.1).

Other potential upstream consumptive uses may be met through exchanges of Ruedi Reservoir supplies. Ruedi Reservoir water supplies may be leased through the Basalt Water Conservancy District (BWCD), from the Bureau of Reclamation, or potentially other entities or sources to provide augmentation water supplies for exchanges. For example, the BWCD’s pending applications in Case Numbers 01CW305 and 02CW077 are intended to supply consumptive uses in the area above Basalt (Appendix C provides a map of the BWCD service area).

There are many examples of suitable points of diversion for consumptive beneficial uses downstream of Basalt. Figure 4-3 shows the locations of conditional rights associated with structures diverting from the Roaring Fork (Basalt to Glenwood Springs) and the Colorado River (Glenwood Springs to the State Line). Associating the tabulation with those structures indicates approximately 150 water rights with direct diversions totaling thousands of cubic feet per second of flow and the storage totaling several hundred thousand acre-feet of volume (Appendix B.2).

These examples are only a sub-set of the water supply alternatives that may potentially develop water supplies associated with the Roaring Fork River. The City of Aspen has significant water supplies (absolute and conditional) to serve municipal demands in their service area. Special districts and entities such as Starwood Metropolitan District and Snowmass Water and Sanitation District presumably have water right portfolios to cover their existing and planned future developments, as well.

4.4 Instream Flows in the Reach of the Pitkin County RICDs

There is a CWCB instream flow water right that includes the reach of the proposed Pitkin County River Park RICDs. The ISF extends from the confluence of Maroon Creek and the Roaring Fork River to the confluence of the Fryingpan Pan River. The decreed flow rates are 55 cfs April 1 through September 30 and 30 cfs from October 1 through March 31. The rights were adjudicated in 1985 in Case Number 85CW646.

In addition, there are ISF water rights upstream of the proposed RICDs in the Roaring Fork River and others in tributaries to the Roaring Fork. All of the CWCB ISF water rights are senior to the Pitkin County River Park RICDs. The proposed RICDs could not materially injure ISF rights because of the relative priorities.

In fact, the flows associated with the RICDs may benefit and enhance the fishery and the natural environment by providing assurance that flows following the peaking hydrograph that are greater than the ISF minimum flows are maintained in the future.

4.5 Compact Entitlement

The status regarding Colorado's Compact Entitlement in the Colorado River Basin in Colorado is under investigation by the Bureau of Reclamation, the CWCB, the Colorado River Water Conservation District, and probably other water users and interests (Kuhn, 2006 and Bureau of Reclamation, various dates). The CWCB is dedicating significant resources to the State Water Supply Initiative, the State Water Availability Study, and data collection and process development efforts to answer questions regarding remaining compact entitlement amounts and locations.

The CWCB Rule 7. i. states, "*The amount and location of remaining unappropriated compact entitlement waters in the basin in question and at the RICD point of diversion*". Development of this information seems well beyond the scope of what is necessary to characterize and describe the Pitkin County River Park RICDs. To my knowledge there are no State or Bureau of Reclamation sources that describe and quantify Colorado's unappropriated compact entitlement waters.

Regardless, the Pitkin County RICDs do not preclude development of consumptive uses in any Colorado River Basin stream. The RICD is non-consumptive of Colorado's water supplies, the water right will have priority of 2010 and will be junior to all applications filed in 2009, and the park is located sufficiently far upstream of the Colorado State Line to permit beneficial consumptive uses before the water supplies leave the State. The Pitkin County River Park RICDs will not materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements.

Table 4-1: Division 5 Mainsteam Calls Affecting District 38, 1987 - 2010

Year	Start	End	No. Days	Water Right	Appro. Date	Admin. No.	Amount
1987	8/20/1987	8/22/1987	3	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/11/1987	10/23/1987	43	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
1988	7/19/1988	10/21/1988	95	GRAND VALLEY PROJECT	1908-02-27	30895.21241	1020.0000 CFS
	8/16/1988	9/13/1988	29	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
1989	7/19/1989	8/28/1989	41	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/28/1989	10/31/1989	65	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
1990	7/30/1990	8/9/1990	11	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/9/1990	10/9/1990	62	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	10/9/1990	10/22/1990	14	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
1991	9/2/1991	9/13/1991	12	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/30/1991	10/25/1991	26	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
1992	7/30/1992	8/19/1992	21	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/19/1992	9/8/1992	21	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	9/8/1992	9/11/1992	4	GRAND VALLEY PROJECT	1908-02-27	30895.21241	1020.0000 CFS
	9/11/1992	9/18/1992	8	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	9/18/1992	10/26/1992	39	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
1993	No Call		0				
1994	7/15/1994	7/29/1994	15	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	7/29/1994	8/5/1994	8	GRAND VALLEY PROJECT	1908-02-27	30895.21241	1020.0000 CFS
	8/5/1994	9/30/1994	57	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
1995	No Call		0				
1996	8/13/1996	9/18/1996	37	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
1997	No Call		0				
1998	No Call		0				
1999	No Call		0				
2000	7/29/2000	8/9/2000	12	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/9/2000	8/19/2000	11	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	8/19/2000	8/28/2000	10	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/8/2000	9/13/2000	6	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/13/2000	9/23/2000	11	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	10/3/2000	10/16/2000	14	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
2001	4/25/2001	4/27/2001	3	GRAND VALLEY PROJECT	1935-08-01	31258.00000	160961.0000 AF
	8/28/2001	9/18/2001	22	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/26/2001	9/28/2001	3	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/28/2001	10/16/2001	19	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
2002	4/24/2002	4/28/2002	5	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	5/1/2002	5/2/2002	2	GRAND VALLEY CANAL	1957-07-29	39291.00000	102369.0000 AF
	5/2/2002	5/3/2002	2	GRAND VALLEY CANAL	1946-06-24	35238.00000	788.0000 CFS
	5/3/2002	5/7/2002	5	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	6/24/2002	6/27/2002	4	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF

	6/27/2002	7/3/2002	7	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	7/3/2002	7/6/2002	4	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	7/6/2002	7/8/2002	3	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	7/8/2002	7/9/2002	2	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	7/9/2002	10/4/2002	88	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
2003	7/31/2003	8/11/2003	12	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	8/11/2003	8/13/2003	3	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/13/2003	8/18/2003	6	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	8/18/2003	8/19/2003	2	GRAND VALLEY PROJECT	1921-07-04	30870.26117	330.0000 CFS
	9/3/2003	9/8/2003	6	GRAND VALLEY PROJECT	1935-08-01	31258.00000	160961.0000 AF
	9/22/2003	11/4/2003	44	GRAND VALLEY PROJECT	1908-02-27	30895.21241	1020.0000 CFS
2004	4/28/2004	5/1/2004	4	GRAND VALLEY PROJECT	1987-12-14	50386.00000	59993.0000 AF
	7/12/2004	7/13/2004	2	GRAND VALLEY CANAL	1957-07-29	39291.00000	102369.0000 AF
	7/13/2004	7/15/2004	3	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	7/15/2004	7/16/2004	2	GRAND VALLEY CANAL	1935-11-10	31359.00000	93637.0000 AF
	7/16/2004	7/17/2004	2	GRAND VALLEY CANAL	1946-06-24	35238.00000	788.0000 CFS
	8/2/2004	8/9/2004	8	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/9/2004	8/21/2004	13	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	8/21/2004	8/24/2004	4	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	8/24/2004	8/30/2004	7	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	8/30/2004	9/21/2004	23	GRAND VALLEY PROJECT	1908-02-27	22729.21241	730.0000 CFS
	9/21/2004	9/29/2004	9	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	10/6/2004	10/15/2004	10	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	10/16/2004	10/20/2004	5	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
2005	No Call		0				
2006	No Call		0				
2007	8/13/2007	8/17/2007	5	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	8/17/2007	8/24/2007	8	GRAND VALLEY CANAL	1946-06-24	35238.00000	788.0000 CFS
	8/31/2007	9/4/2007	5	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	9/4/2007	9/19/2007	16	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS
	9/19/2007	9/25/2007	7	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
	10/12/2007	10/17/2007	6	GRAND VALLEY CANAL	1935-08-01	31258.00000	160961.0000 AF
2008	No Call		0				
2009	No Call		0				
2010	9/3/2010	9/10/2010	8	GRAND VALLEY CANAL	1914-04-26	30895.23491	119.4700 CFS

Table 4-2: By-pass Calls Affecting District 38:

Year	Start	End	No. Days	Water Right	Appro. Date	Admin. No.	Amount
2002	5/3/2002	5/7/2002	5	GREEN MOUNTAIN RESERVOIR	1914-04-26	30895.23438	119.47 CFS
	6/24/2002	6/26/2002	3	GREEN MOUNTAIN RESERVOIR	1914-04-26	30895.23438	119.47 CFS
	7/6/2002	7/8/2002	3	GREEN MOUNTAIN RESERVOIR	1914-04-26	30895.23438	119.47 CFS
	5/2/2002	5/3/2002	2	DILLON RESERVOIR	1914-04-26	30895.23438	119.47 CFS
	5/1/2002	5/2/2002	2	RUEDI RESERVOIR	1914-04-26	30895.23438	119.47 CFS

Table 4-3: District 38 Calls Affecting the Roaring Fork River

Year	Start	End	No. Days	Water Right	Appro. Date	Admin. No.	Amount
2008	9/2/2008	9/12/2008	11	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
	9/13/2008	10/7/2008	25	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
	10/12/2008	10/13/2008	2	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
	11/18/2008	12/14/2008	27	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
2010	9/20/2010	9/23/2010	4	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
	9/27/2010	9/29/2010	3	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
	10/14/2010	10/27/2010	14	MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS
	10/29/2010	Active		MIN FLOW ROARING FORK 3	1976-01-14	46034.00000	32.0000 CFS

Figure 4-1: Conditional Water Rights Upstream of the Pitkin County River Park RICDs

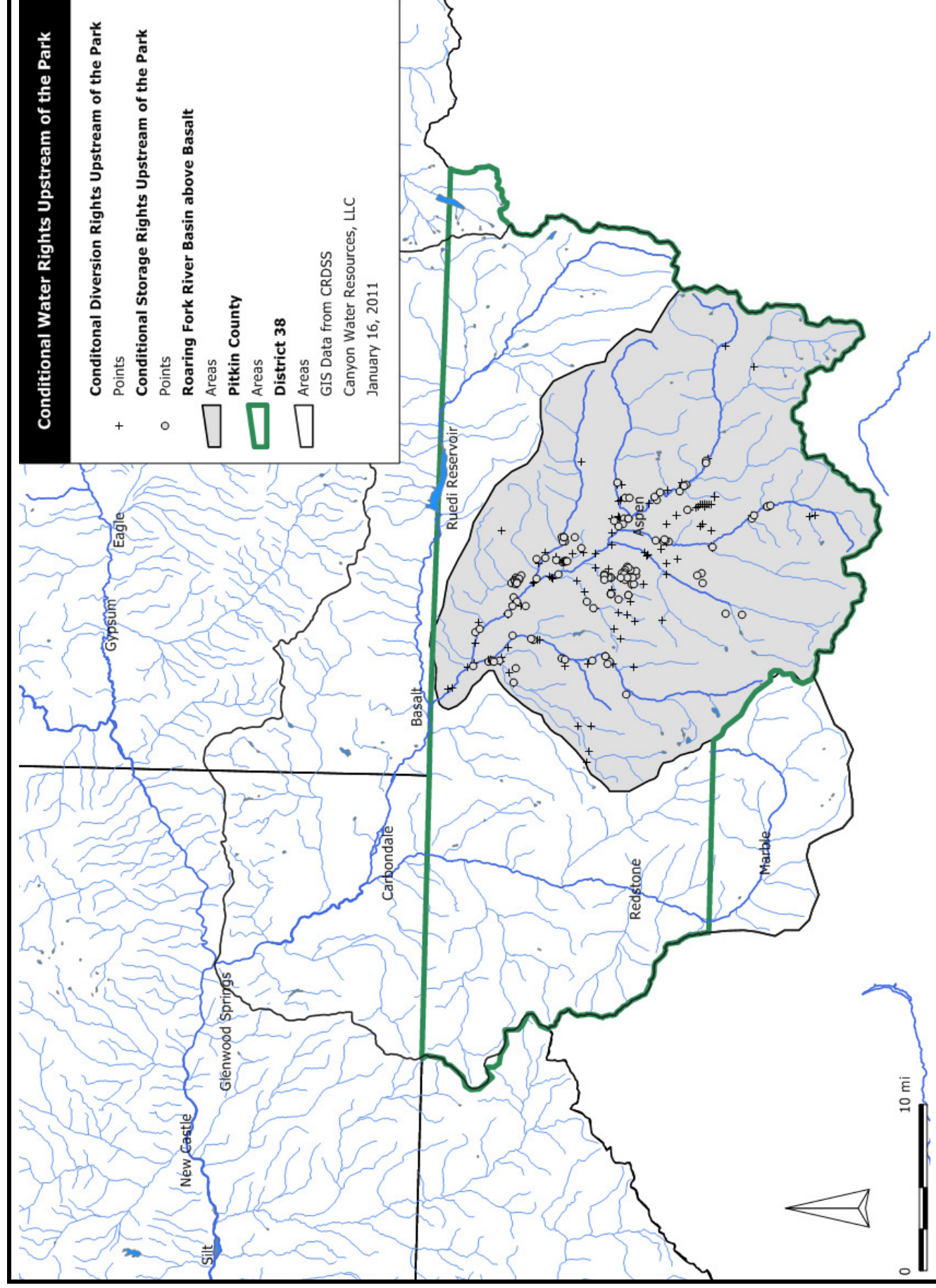
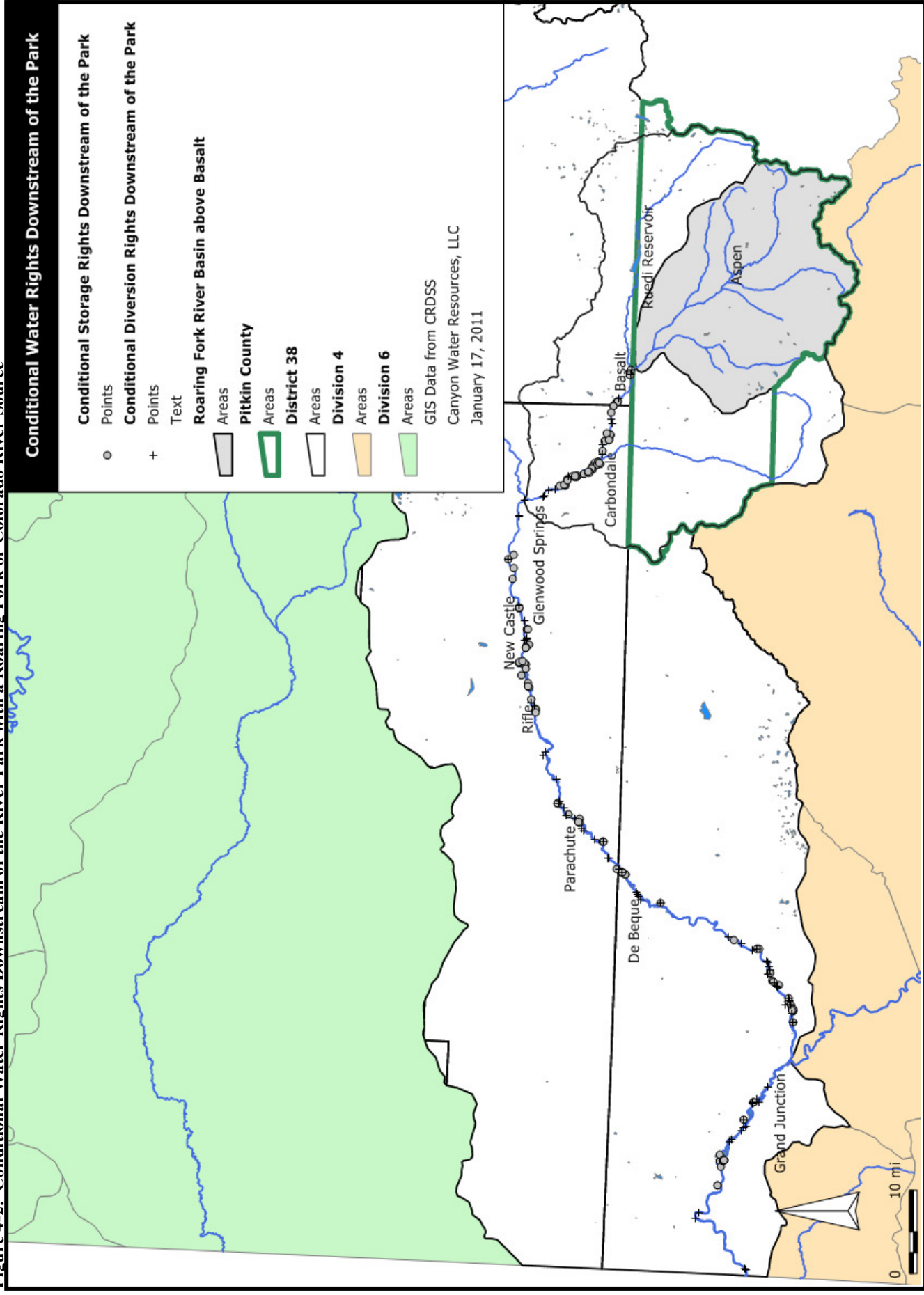


Figure 4-2: Conditional Water Rights Downstream of the River Park with a Roaring Fork or Colorado River Source



5 Daily Flow Statistics and the Proposed RICDs Flow Amount and Timing

This section provides charts combining the daily flow statistics at the Pitkin County River Park with the proposed RICD water rights claims. On the charts, the colored bars illustrate the RICD water right claim for each structure, flow rate, and time period. The top of the bar represents the RICD claim and the lower extent of the bar is 85% of the claimed RICD flow. The daily flows for the 5th, 33rd, 50th (median), 66th percentile statistics are shown as the “hydrograph” traces. Figure 5-1 and 5-2 provide the charts for the Upper Structure Unit and Figure 5-2 for the Lower Structure Unit, respectively.

Keep in mind that the traces shown on the charts do not represent the stream flow for any one year. Instead, the traces provide information on how often a given day (x-axis) will have at least a certain flow rate (y-axis). The charts illustrate the RICD water right and give an indication of the timing and flows when the rights may effect water rights with junior priorities. If the RICD call would produce at least 85% of the claimed RICD flow rate then, the State Engineer shall curtail junior diversions and junior exchanges upstream of the RICD that deplete the reach.

Figure 5-1: Stream flow Statistics and the Proposed Upper Structure Unit RICDs

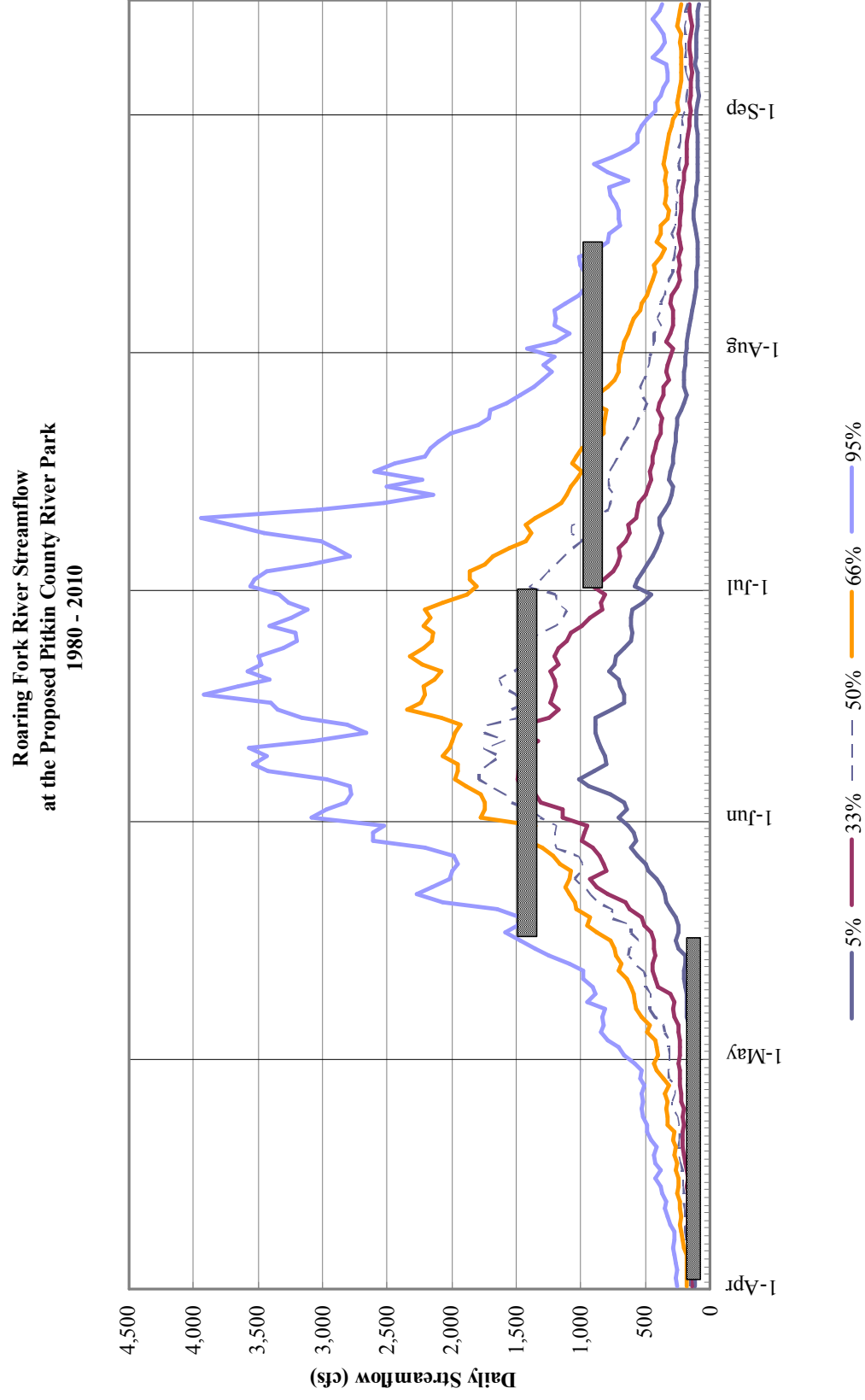
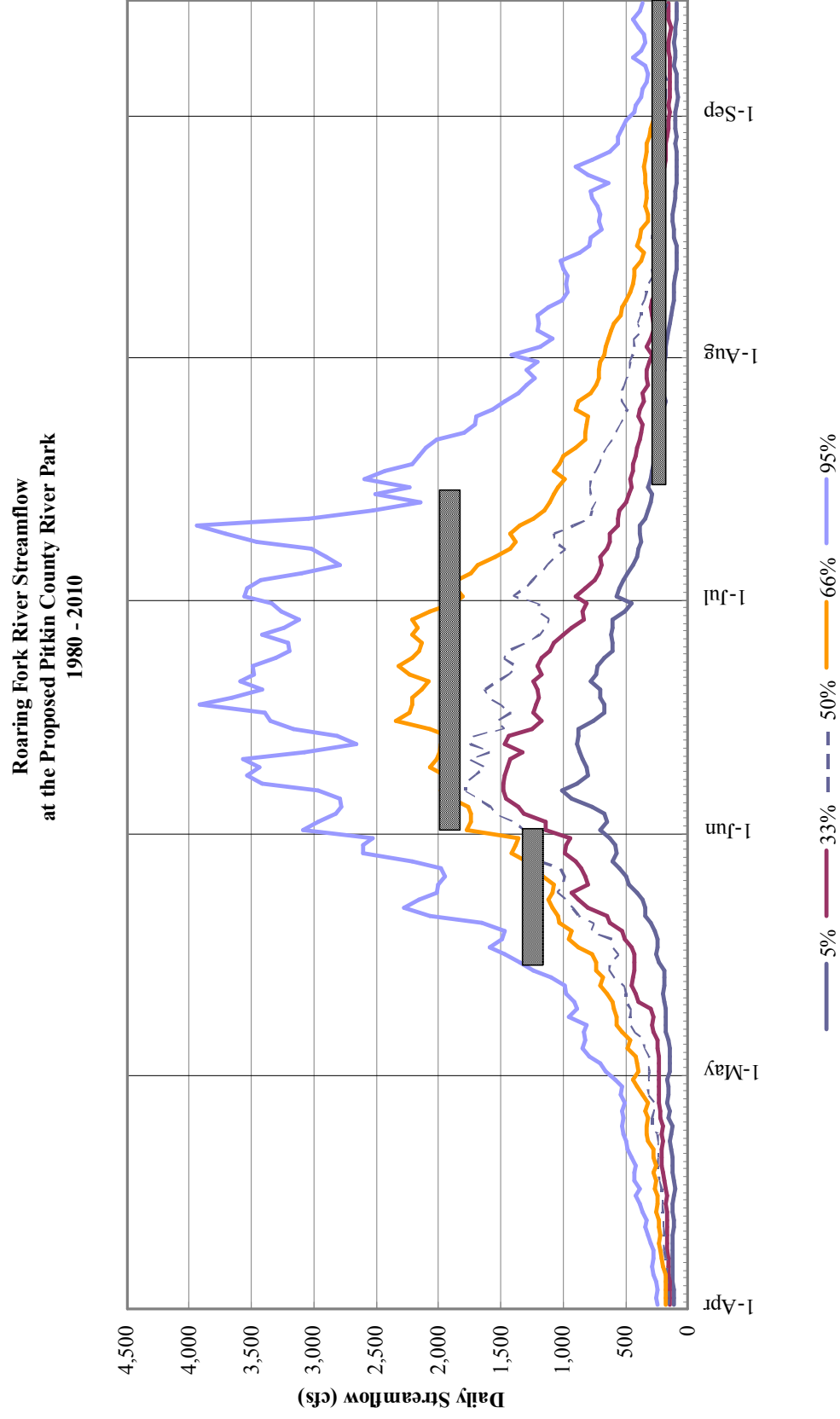


Figure 5-2: Stream Flow Statistics and the Lower Structure Unit RICDs



6 Conclusions

The CWCB Recreational In-Channel Diversion Rules requires the CWCB to make findings relative to the Pitkin County River Park RICDs. This report provides information responding to certain parts of Rules 7 and 8 and the Design Report (River Restoration, 2011) provides additional responses in the areas regarding the reasonable recreation experience and the design of the River Park.

The required findings and Pitkin County's responses follow:

“Whether the adjudication and administration of the recreational in-channel diversion would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements.”

The adjudication and administration of the Pitkin County River Park RICDs will not materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements.

“Whether exercise of the recreational in-channel diversion would cause material injury to instream flow water rights appropriated pursuant to subsections (3) and (4) of this section.”

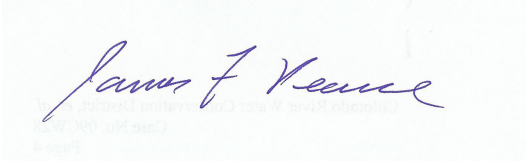
The exercise of the Pitkin County River Park RICDs will not cause material injury to instream flow water rights appropriated pursuant to the relevant sections of the statute.

“Whether adjudication and administration of the recreational in-channel diversion would promote maximum utilization of waters of the state.”

The adjudication and administration of the Pitkin County River Park RICDs will promote maximum utilization of the waters of the State by assuring the minimum flows needed for a reasonable recreational experience for a range of freestyle whitewater skills while not precluding development of beneficial consumptive uses.

7 Signature Page

This report was prepared by:

A handwritten signature in blue ink that reads "James F. Pearce". The signature is written in a cursive style. Below the signature, there is a faint, mirrored watermark of the signature.

February 7, 2011

James F. Pearce
Manager, Canyon Water Resources, LLC

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**Supplemental Information in Support of the Pitkin County River Park
Recreational In-Channel Diversions Water Rights Application
Case No. 10CW305, Water Division 5**

May 2011

Prepared for:

Board of County Commissioners of Pitkin County

Prepared by:

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Introduction

This supplemental report provides information regarding the proposed Pitkin County River Park Recreational In-Channel Diversion (RICD) water rights. The report addresses areas of inquiry raised by the CWCB staff during discussions with Pitkin County's representatives in February 2011.

The CWCB staff requested additional information and data presentations to help explain the impact of the proposed RICD water rights on administration and water development in the Roaring Fork River valley. Because the RICD water rights are non-consumptive, they have no effect on any water uses downstream of the Lower Structure Unit. Also, because the water rights operate in the prior appropriation system, the RICD water rights have no effect on water rights with a priority date senior to the RICD water rights. Therefore, this supplemental report focuses on administration and how the RICD water rights may impact development of consumptive uses located upstream and with priorities junior to the Pitkin County River Park RICD water rights.

Discussion

There are two RICD water rights each associated with its own control structures (Upper Structure Unit and the Lower Structure Unit). For each Unit, the hydraulic engineering analysis describes three unique flow rates indicating varying recreational experiences (River Restoration, 2011).

Proposed Pitkin County River Park RICD Water Rights Amounts and Timing

Structure	Period	Flow Rate (cfs)	Experience
The Upper Structure Unit	April 1 – May 14	240	Blue
	May 15 – June 30	1,500	Double Black
	July 1 – August 15	1,000	Black
The Lower Structure Unit	May 14 – May 31	1,350	Blue
	June 1 - July 14	2,000	Black
	July 15 – Sept. 15	380	Green

1 – Statutory Limitations

The RICD legislation (§37-92-305 (13), C.R.S.) sets forth the following RICD water rights restrictions under paragraphs (e) and (f):

(e) If the other elements of the appropriation are satisfied, the decree shall specify the total volume of water represented by the flow rates decreed for the recreational in-channel diversion. For the purposes of the subsection (13), the “total volume of water represented by the flow rates decreed for the recreational in-channel diversion” means the sum of the flow rates claimed in cubic feet per second for each day on which a claim is made multiplied by 1.98.

(f) If the court determines that the total volume of water represented by the flow rates decreed for the recreational in-channel diversion exceeds fifty percent of the sum of the total average historical volume of water for the stream segment where the recreational in-channel diversion is located for each day on which a claim is made, the decree shall:

- (I) Specify that the state engineer shall not administer a call for the recreational in-channel diversion unless the call would result in at least eighty-five percent of the decreed flow rate for the applicable time period;*
- (II) Limit the recreational in-channel diversion to no more than three time periods; and*
- (III) Specify that each time period is limited to one flow rate.”*

Paragraph (e) of the RICD statute requires the determination of the “*total volume of water represented by the flow rates decreed for the recreational in-channel diversion,*” and defines that as, “*the sum of the flow rates claimed in cubic feet per second for each day on which a claim is made multiplied by 1.98* (RICD total volume).

Paragraph (f) requires that an applicant compare the RICD total volume to “*fifty percent of the sum of the total average historical volume of water for the stream segment where the recreational in-channel diversion is located for each day on which a claim is made.*” (fifty percent average historical volume). When the RICD total volume exceeds the fifty percent average historical volume paragraph (f) imposes three restrictions on the RICD water rights: (1) the state engineer shall not administer a call for the recreational in-channel diversion unless the call would result in at least eighty-five percent of the decreed flow rate for the applicable time period; (2) limits the RICD water right to no more than three time periods, and (3) limits each time period to one flow rate.

Attachments A and B provide the comparison of the RICD total volumes and the fifty percent average historical volumes for each day for the Upper Structure Unit and Lower Structure Unit RICD water rights. The following table summarizes the comparisons:

Comparison of the RICD Total Volumes and the Fifty Percent Average Historical Volumes

Structure	Period	Number of Days	RICD Flow Rate (cfs)	RICD Total Volume (af)	Fifty Percent Average Historical Volume (af)
The Upper Structure Unit	April 1 – May 14	44	240	20,909	13,744
	May 15 – June 30	47	1,500	139,590	68,494
	July 1 – Aug 15	46	1,000	91,080	38,228
			Total	251,579	120,466
The Lower Structure Unit	May 14 – May 31	18	1,350	48,114	17,685
	June 1 - July 14	44	2,000	174,240	69,288
	July 15 – Sept 15	63	380	47,401	25,452
			Total	269,755	112,425

This table indicates that the RICD total volumes exceed fifty percent of the historical average flows and consequently, the Pitkin County River Park RICD water rights are limited by paragraph (f).

The RICD legislation makes administration of the Pitkin County River Park RICD water rights unusual. When the RICD total volume historical volume exceeds the fifty percent historical average flows, the Division Engineer shall not administer a call for the RICD water rights unless the call would result in at least eighty-five percent of the decreed flow rate. In other words, the RICD legislation imposes a lower administrative threshold.

To illustrate the lower threshold consider the Lower Structure Unit RICD flow rate of 2,000 cfs for the period June 1 – July 14. First, 85% of 2,000 cfs is 1,750 cfs. If the daily flow at the Pitkin County River Park (as measured at the Roaring Fork River above Basalt stream gage located immediately upstream of the Park) was 1,749 cfs and curtailment of diversions by junior water rights resulted in 1 cfs or more, then the Division Engineer would administer a call. If curtailment resulted in less than 1 cfs, then the Division Engineer would not administer a call. This example demonstrates the exercise of the lower administrative threshold.

As with any water right, if the natural stream flow exceeds the RICD water right's flow rate (without the Pitkin County River Park RICD call), then the RICD water right would be satisfied and could not call.

To illustrate the operation of the upper threshold consider the 2,000 cfs flow rate and assume the daily flow is 1,750 cfs. The Division Engineer would administer a call and junior diversions would be curtailed until the flow rate at the Park either increased to values greater than 2,000 cfs, or decreased to values less than 1,750 cfs (the lower threshold).

With RICD water right administration in mind, the following evaluations compare the estimated historical daily flows at the Pitkin County River Park to the RICD water rights to determine the days when the RICD water rights would potentially be in-priority.

Section 2 – Analysis of the Pitkin County River Park RICD Water Rights

This section compares the Pitkin County River Park RICD water rights to the estimated historical flow in the Roaring Fork River at the River Park to determine when river flows were within the upper and lower thresholds of each proposed water right on a daily basis. These analyses will indicate how the RICD water rights may potentially affect administration of upstream water rights decreed junior to the RICD water rights.¹ Figures 1 and 2 illustrate and provide examples of the comparison.

Figures 1 and 2 show the Upper and Lower RICD water rights timing and quantity, respectively, along with the hydrographs for an example wet season (1986) and an example dry season (2002). The timing and quantities of the RICD water rights are generally depicted by the shaded boxes. The trace of the estimated daily flow (hydrograph) year 1986 is shown as the upper line and year 2002 as the lower line.² When the daily value on the hydrograph “lands” in a shaded box, the estimated historical flow was less than or equal to the RICD water right and greater than or equal to 85% of the RICD water right. In other words, the RICD water right can place a call under that condition.

On **Figure 1**, the shaded boxes indicate the Upper Structure Unit RICD water right represented by flow rates of 240 cfs, 1,000 cfs, and 1,500 cfs. As you know, 2002 was a low flow season. The trace of the hydrograph shows that in 2002 the estimated flow of the Roaring Fork River at the Pitkin County River Park did not exceed approximately 800 cfs. In other words, the stream flow was low enough that neither the Upper Structure Unit’s 1,500 cfs nor 1,000 cfs flow rates would have potentially placed a valid call. For the 2002 hydrology, the only potential valid calls for the Upper Structure Unit would have been for its 240 cfs flow rate in the early portion of the RICD season.

Figure 2 illustrates the Lower Structure Unit water right represented by flow rates of 1,350, 2,000, and 380 cfs. The 2002 hydrograph indicates that flows in 2002 were always less than any of the Lower Structure Unit RICD flow rates. Consequently, the Lower Unit RICD water rights would not have been in in-priority in the 2002 low flow season. In 2002, the Pitkin County River Park RICD water rights would not have placed a call on 160 out of 168 days during the RICD season from April 1 to September 15.

The same analysis, but using the wet season hydrograph (1986) on Figures 1 and 2, indicates that the Pitkin County River Park RICD water rights would have potentially been in-priority on 26 days in 1986. So for the wet season example, upstream junior

¹ Other administrative calls may impact administration of the Roaring Fork River upstream of the confluence with the Frying-Pan River (i.e., CWCB instream flow or Grand Valley “Cameo” water rights).

² The median daily value of flow for the period 1980 – 2010 is indicated by the dashed black line.

water rights would not be impacted by the RICD water rights on 142 of the 168 days during the RICD season.

Tables 1 – 6 (located at the end of the report text) expand the analysis of the estimated historical daily flow by comparing the Pitkin County River Park RICD water rights for April 1 – September 15 and years 1980 – 2010.³ Tables 1 – 3 correspond to the Upper Structure Unit 240, 1,500, and 1,000 cfs flow rates, respectively. Tables 4 – 6 correspond to the Lower Structure Unit 1,350, 2,000, and 350 cfs flow rates, respectively.

For each water right flow rate, the cells (containing the daily values for stream flow) are shaded whenever the estimated historical flows were less than or equal to the RICD water right flow rate and greater than or equal to 85% of the RICD water right flow rate. At those flows, the RICD water right would have been in-priority and able to place a call. The shaded days on Table 1 - 6 represent the historical hydrologic conditions when a RICD water right could potentially call out diversions by upstream water rights decreed junior to the RICD.

Table 1 corresponds to the 240 cfs flow rate at the Upper Structure Unit. The top row indicates the years 1980 – 2010 and the left hand column indicates the dates April 1 through May 14 (the time period associated with the 240 cfs flow rate). Each cell contains the estimated daily flow for the corresponding date and year. Shaded cells represent days when the estimated historical flow was between 240 cfs and 204 cfs (i.e., 85% of 240). The bottom row (labeled “count”) indicates the number of days in each year the historical daily flow was within that range such that the RICD water right could have placed a call.

At the bottom of Table 1 is a summary of the information regarding the 240 cfs flow rate. The time period for the flow is from April 1 to May 14 and includes 44 days. For the period of record (31 years) there are 1,364 total days associated with the 240 cfs flow rate. The flow during April 1 – May 14 is between 240 and 204 cfs on 162 days of the total 1,364 days or 12% of the total days.

The following table summarizes the historical period 1980 – 2010 showing the number of days when the estimated flow of the Roaring Fork River was such that a Pitkin County RICD water right would be been able to place a call and, as a result, may have potentially affected river administration.

³ Tables 2 and 4 include additional information. The cells that are shaded and outlined by a box indicate 25 days when the historical flow rate was between 1,350 and 1,275 cfs during the dates May 15 to May 30. These flow rates and dates represent the slight “overlap” between the Upper Structure Unit 1,500 cfs water right and the Lower Structure Unit 1,350 cfs water right during the last two weeks in May.

Number of Days when Roaring Fork River Administration Potentially Affected by Pitkin County River Park RICD Water Rights

	Upper Structure Unit Water Right Flow Rates (cfs)			Lower Structure Unit Water Right Flow Rates (cfs)			April 1 - Sept 15 Accounting for "overlap" in 1,500 and 1,350 cfs water rights
	240 cfs April 1 - May 14	1,500 cfs, May 15 - Jun 30	1,000 cfs, Jul 1 - Aug 15	1,350 cfs, May 14 - May 31	2,000 cfs, June 1 - July 14	380 cfs, July 15 - Sept 15	
1980	1	2	2	0	3	4	12
1981	6	4	0	0	4	2	16
1982	1	6	4	0	12	1	24
1983	2	6	0	2	8	0	20
1984	8	2	3	1	2	8	24
1985	1	5	2	2	11	2	22
1986	4	0	5	6	8	3	26
1987	0	8	2	4	5	6	24
1988	13	5	1	0	5	4	28
1989	7	8	1	1	0	7	24
1990	8	2	3	0	3	2	18
1991	3	5	5	7	4	5	28
1992	4	0	2	2	0	12	20
1993	1	7	8	7	8	7	35
1994	3	9	0	1	2	7	22
1995	16	3	1	0	3	2	25
1996	8	5	5	5	9	4	36
1997	10	4	9	7	2	7	36
1998	4	9	4	1	3	10	31
1999	5	12	7	4	6	12	46
2000	12	6	0	2	2	4	25
2001	2	11	0	5	0	6	21
2002	8	0	0	0	0	0	8
2003	7	10	0	2	0	0	17
2004	7	2	0	0	0	4	13
2005	7	8	5	2	7	8	36
2006	4	4	0	3	6	7	21
2007	0	12	0	4	4	7	32
2008	4	4	6	4	5	9	28
2009	2	10	3	2	15	5	35
2010	2	3	3	2	1	7	17
total							770
							average = 24 days out of 168 days

The maximum number of days that the RICD water rights would have placed a call was 46 days in 1999, with the minimum being 8 days in 2002. Generally, drier seasons have fewer days when the RICD water rights may potentially call and the average and wet seasons have more days with RICD water right administration. The average for the 1980 – 2010 period is 24 days per season.

Considering the average 24 days per year, water rights upstream and junior to the Pitkin County River Park RICD water rights would not be impacted by the water rights on 86% of the days during the RICD season. If not limited by other administrative or physical water supply constraints, new junior rights will have many days to divert (on average 144 out of 168 days). It seems apparent that even with the RICD water rights, new junior water rights will have ample opportunities to divert in-priority water supplies.

Conclusions

This supplemental report addresses areas of inquiry raised by the CWCB staff and provides additional information and data presentations that explain the impact of the proposed RICD water rights on administration and water development in the Roaring Fork River valley.

- Because the RICD water rights are non-consumptive, they have no effect on any water uses downstream of the Lower Structure Unit.
- Because the RICD water rights operate in the prior appropriation system, the RICD water rights have no effect on any uses decreed senior to the RICD water rights.
- The RICD water rights may impact development of consumptive uses located upstream and with priorities junior to the Pitkin County River Park RICD water rights.
- Considering the Roaring Fork River historical flows (1980 – 2010) at the Pitkin County River Park and RICD water rights as limited under paragraph (f) of the RICD statutes, the Upper and Lower Structure Units water rights combined could have called on junior water rights an average of 24 days over the 168 day RICD season (April 1 – September 15).
- The historical data indicates that generally, the RICD water rights may be potentially in-priority less often in the drier years and more often in the wetter years. The maximum number of days in the historical period was 46 out of 168 days (in 1999) and the minimum number was 8 out of 168 day(in 2002). The average was 24 out of 168 days.
- Considering the average 24 days per year, water rights upstream and junior to the Pitkin County River Park RICDs would not be impacted by the water rights on 86% of the days during the RICD season. If not limited by other administrative or physical water supply constraints, new junior rights will have many days other to divert (on average 144 out of 168 days). Obviously, the junior water rights would not be affected outside the RICD season.
- Even with the RICD water rights, new junior water rights will have ample opportunities to divert water supplies in-priority.

References

Design Engineering Report, Case No. 2010-CW-305, Pitkin County's Recreational In-Channel Diversion Water Right in the Roaring Fork River. River Restoration, Inc., January, 2011

Report in Support of the Pitkin County River Park Recreation In-Channel Diversions Water Rights Application Case number 10CW305, Division 5. Canyon Water Resources, LLC, February, 2011

Signature Page

This report was prepared by

A handwritten signature in blue ink, reading "James F. Keene". The signature is written in a cursive style. Below the signature, there is a faint, light blue rectangular stamp that appears to contain the text "CANYON WATER RESOURCES, LLC" and "JAMES F. KEENE".

Manager, Canyon Water Resources, LLC

Date: May 9, 2011

Figure 1:

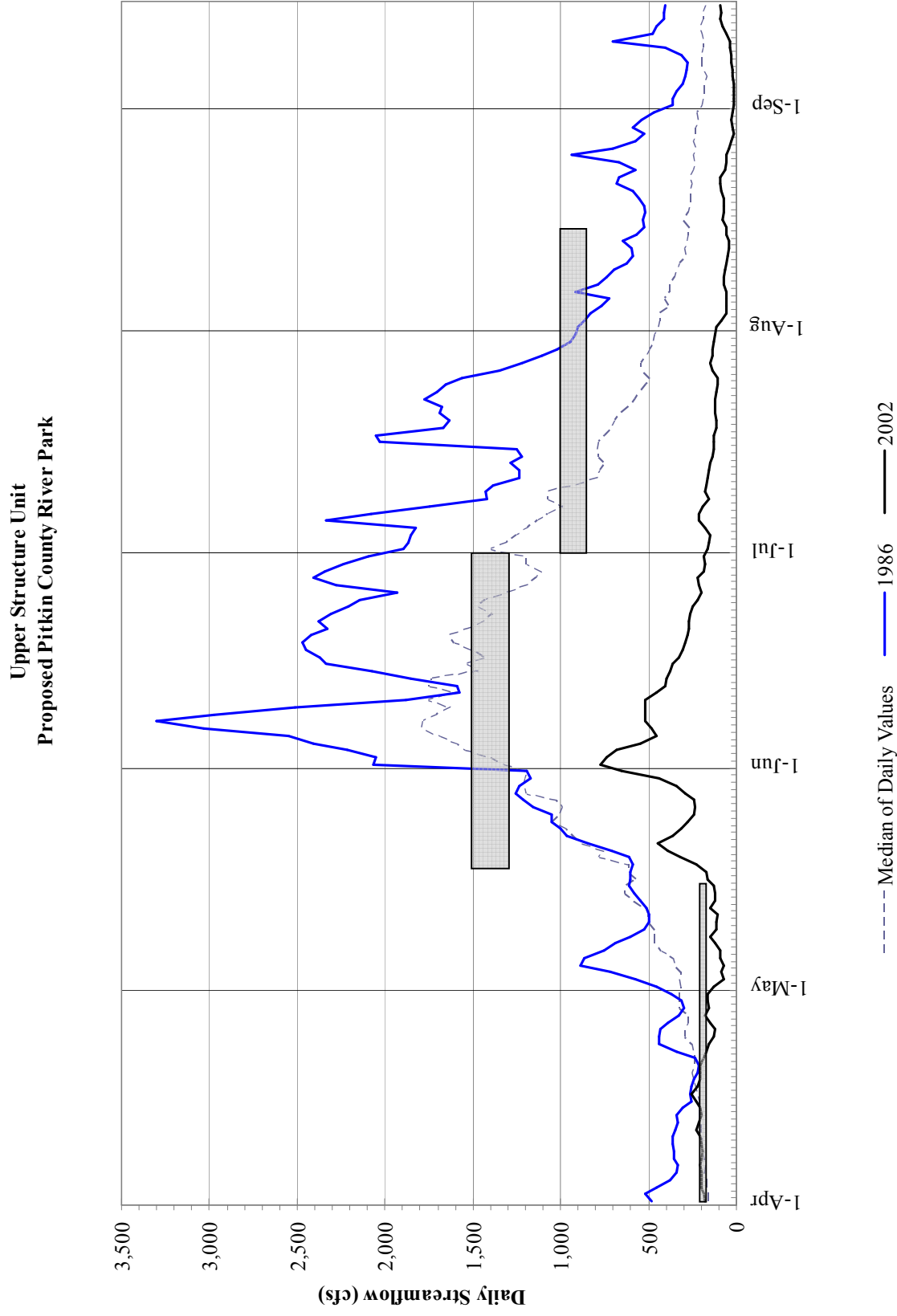


Figure 2:

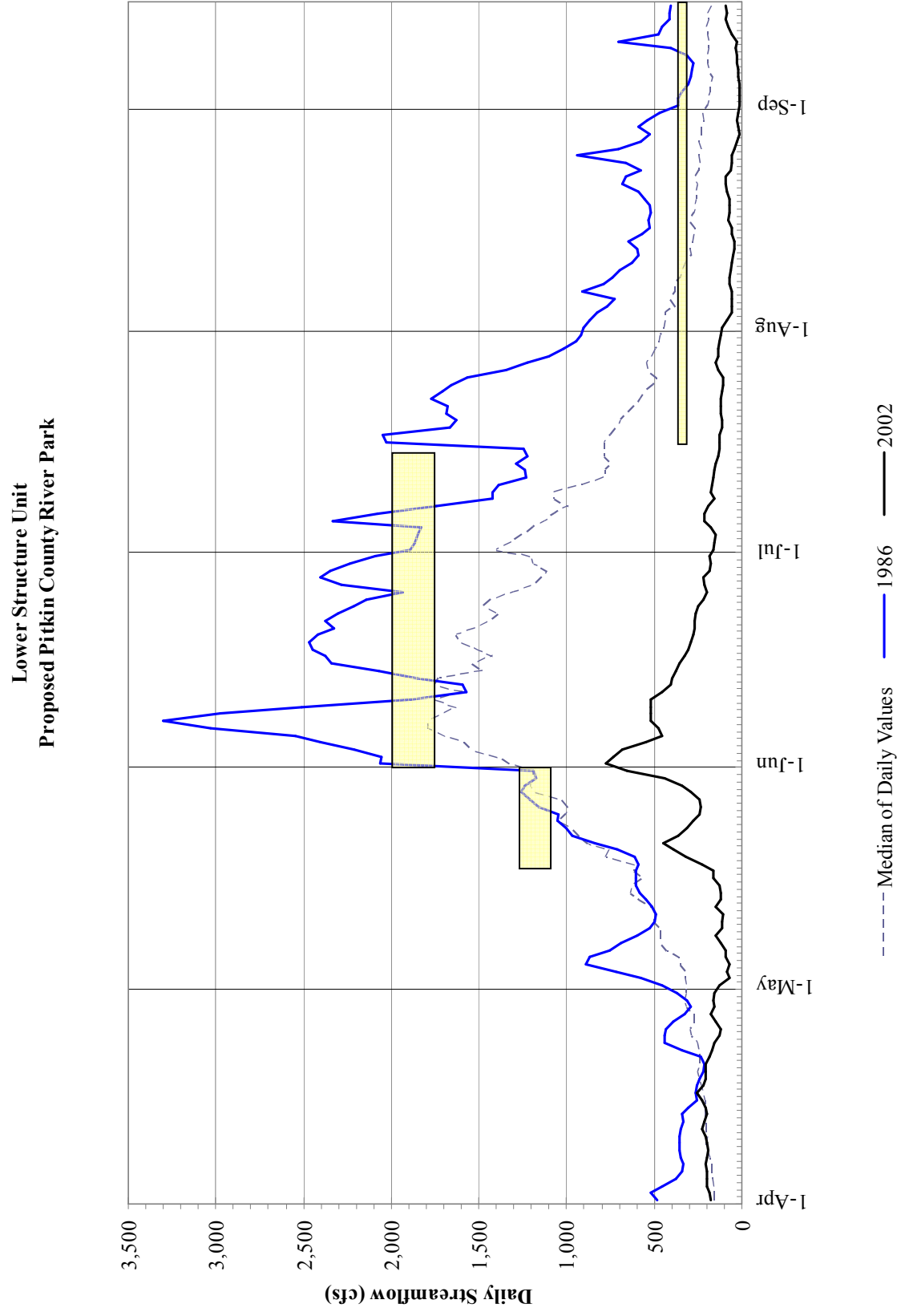


Table 1

Upper Structure Unit RICD Water Right
240 cfs flow rate, April 1 - May 14

Explanation Values indicate daily flow rate in cubic feet per second.

Shaded cells indicate days when the estimated flow of the Roaring Fork River was between 240 and 245 cfs.

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
1-Apr	100	119	156	130	144	173	482	156	138	190	145	142	142	172	146	151	176	250	250	184	120	145	176	127	188	126	226	215	143	179	159	173
2-Apr	98	119	159	128	139	177	521	159	142	180	150	150	143	180	153	155	200	238	282	186	109	152	186	136	202	132	241	220	150	174	138	177
3-Apr	98	119	153	135	143	163	453	163	145	179	160	151	147	172	150	155	209	238	263	160	104	160	197	138	208	143	234	230	159	191	130	176
4-Apr	100	118	154	128	137	198	378	170	151	170	173	153	157	174	161	164	197	245	267	140	139	167	198	134	213	162	252	234	144	191	130	177
5-Apr	120	118	155	126	147	186	340	166	153	168	176	174	166	190	154	181	186	238	272	142	183	172	199	125	262	177	274	263	151	176	132	183
6-Apr	115	121	151	128	156	198	333	169	159	178	172	202	166	190	146	188	192	229	268	119	212	165	203	132	272	149	306	274	156	170	145	186
7-Apr	114	124	147	128	161	222	352	174	186	205	179	216	177	178	151	214	216	223	263	117	218	155	201	126	257	161	269	276	156	187	131	190
8-Apr	108	125	141	128	175	254	358	182	216	246	192	211	181	170	147	233	247	221	256	133	218	154	190	119	255	188	269	283	147	225	136	197
9-Apr	105	128	143	130	186	286	359	190	198	265	200	181	199	174	147	232	247	221	247	122	232	145	202	123	306	177	301	285	153	250	163	205
10-Apr	105	141	142	130	174	301	359	189	186	250	188	179	221	185	146	216	310	217	240	111	237	146	207	132	319	165	329	288	156	241	204	207
11-Apr	101	158	156	132	179	351	346	194	197	247	190	171	250	182	144	197	305	210	264	92	228	165	230	145	275	147	342	267	140	275	234	210
12-Apr	97	164	224	131	166	385	335	194	225	233	192	162	255	188	145	199	284	201	301	97	215	151	215	140	273	139	335	254	135	265	272	212
13-Apr	95	165	254	129	166	439	344	185	264	235	191	152	290	189	149	223	271	203	315	112	228	134	201	163	253	155	393	252	145	247	295	221
14-Apr	94	174	295	127	166	484	306	184	284	258	188	152	324	180	164	238	245	202	295	125	244	127	207	201	254	170	445	235	174	260	245	227
15-Apr	127	155	328	95	148	509	284	164	245	244	168	114	272	140	130	188	182	167	272	105	245	124	228	208	257	199	511	235	231	276	278	219
16-Apr	144	162	325	96	172	555	266	196	246	274	191	117	268	141	146	180	179	190	278	86	213	131	254	188	265	224	442	245	270	301	312	228
17-Apr	159	182	303	99	217	569	259	258	247	303	208	130	244	141	182	181	180	237	272	99	216	146	218	188	281	258	455	272	229	276	398	239
18-Apr	188	216	306	104	260	609	240	327	218	336	198	146	274	151	219	174	186	291	275	100	260	160	203	198	289	290	475	263	220	252	385	252
19-Apr	232	259	298	110	256	592	222	348	211	380	205	146	241	151	254	178	175	323	245	90	252	188	205	181	277	302	419	261	263	246	409	255
20-Apr	285	257	282	114	237	490	214	323	209	424	205	151	216	146	302	174	166	356	215	93	219	215	207	175	272	316	381	269	318	259	480	257
21-Apr	347	222	288	119	210	459	237	276	235	512	233	159	201	152	383	168	189	398	215	121	225	189	185	172	247	279	387	305	339	294	538	266
22-Apr	395	222	274	120	201	411	341	289	219	536	261	167	198	236	449	160	170	327	247	122	309	170	155	216	216	233	495	312	347	355	648	279
23-Apr	408	222	288	120	213	358	440	372	209	536	261	167	198	236	449	160	170	327	247	122	309	170	155	216	216	233	495	312	347	355	648	290
24-Apr	363	264	296	131	237	343	443	461	197	578	259	167	188	246	465	155	194	318	335	105	333	156	129	203	203	288	573	331	466	476	488	303
25-Apr	325	316	306	152	246	337	433	511	184	566	231	176	205	244	420	155	223	284	438	158	290	158	122	193	208	299	523	305	439	494	422	302
26-Apr	351	382	314	170	226	316	369	565	176	542	212	184	228	247	344	164	244	271	374	136	284	159	147	203	187	267	504	287	392	514	383	296
27-Apr	376	399	314	198	213	313	326	632	179	455	195	168	272	267	303	188	249	266	338	114	322	183	176	233	182	255	544	285	367	479	357	294
28-Apr	425	391	349	190	196	381	295	680	188	376	183	161	366	334	271	179	237	319	337	127	411	220	155	258	205	256	635	320	398	446	361	311
29-Apr	468	435	386	189	185	487	310	712	201	323	183	151	472	395	255	194	223	339	340	128	472	256	164	245	224	232	573	415	458	468	411	332
30-Apr	478	481	433	193	179	528	367	743	246	292	175	148	585	402	296	213	215	316	348	220	483	277	160	239	288	207	539	563	573	569	363	357
1-May	396	544	457	165	161	588	455	758	307	248	156	125	659	322	206	183	206	288	362	211	388	311	126	239	253	200	576	643	583	664	344	359
2-May	373	587	577	157	173	680	574	716	250	235	158	144	654	320	198	216	225	264	372	282	397	405	74	219	255	159	564	775	476	704	334	372
3-May	368	797	649	157	171	852	720	570	225	224	164	148	655	362	202	230	279	248	410	261	512	405	87	217	272	145	599	779	414	681	313	391
4-May	387	612	712	163	169	1053	866	479	221	222	167	150	652	426	203	211	353	285	516	273	648	348	73	251	314	141	629	809	397	661	327	410
5-May	419	497	737	187	178	1090	866	448	242	220	172	148	693	440	268	237	461	352	595	236	792	358	89	241	349	164	671	675	412	591	339	425
6-May	472	435	552	238	191	1039	752	481	282	266	207	160	729	358	395	240	563	473	613	207	915	317	95	201	424	194	633	599	526	607	360	436
7-May	543	376	465	223	177	1044	692	579	243	370	282	183	748	329	491	231	609	572	579	199	862	289	124	177	488	247	623	528	678	773	335	454
8-May	574	334	429	281	183	1121	600	684	234	506	271	239	771	298	511	221	676	601	548	214	892	278	146	166	548	271	612	463	985	927	335	481
9-May	558	296	438	378	228	1107	528	797	217	682	257	390	817	272	533	208	759	670	566	271	706	305	111	148	593	221	597	460	832	941	337	491
10-May	528	270	450	440	356	1184	497	880	229	788	275	551	887	262	513	216	751	705	610	407	653	334	113	157	608	269	526	447	914	911	430	515
11-May	510	277	440	480	516	1063	494	941	263	789	317	673	556	325	568	259	792	750	739	385	869	347	105	149	643	325	491	485	796	1020	429	542
12-May	487	248	433	379	704	873	513	1020	374	727	256	604	570	462	716	338	951	769	713	334	859	456	146	132	612	281	485	640	820	1220	452	567
13-May	413	224	416	357	950	740	549	1060	530	599	231	585	591	678	766	296	1126	835	720	339	606	623	120	154	500	257	527	869	888	1300	449	590
14-May	373	220	354	312	1293	644	582	1207	681	572	257	732	678	842	718	285	1218	936	754	446	525	837	118	172	423	229	633	1020	775	1270	427	630
Count																																

Table 2

Upper Structure Unit RICD Water Right
1,500 cfs flow rate, May 15 - Jun 30

Explanation

Values indicate daily flow rate in cubic feet per second.

Shaded cells indicate days when the estimated flow of the Roaring Fork River was between 1,500 and 1,275 cfs.

Cells indicate days when historical flow rate is between 1,350 and 1,275 cfs and consequently, Lower Structure Unit 1,350 cfs water rights is also potentially in-priority

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	
15-May	349	239	318	302	1645	623	608	1378	782	485	299	748	713	975	724	407	1250	1029	642	488	496	827	125	257	378	241	688	1090	736	1330	433	665	
16-May	380	239	305	282	1719	649	606	1492	876	435	279	537	746	1146	766	559	1433	1134	552	536	496	1011	161	302	375	287	787	1170	707	1440	409	704	
17-May	483	242	299	265	1625	685	602	1468	956	399	247	457	767	1196	881	612	1548	1169	561	538	634	1089	167	452	406	399	873	1160	782	1650	414	743	
18-May	419	234	322	250	1562	767	688	1330	1052	425	269	631	852	1158	937	535	1425	1213	613	613	507	1089	226	560	405	378	946	1160	1010	1760	484	763	
19-May	439	258	356	252	1428	795	612	1193	925	562	273	870	930	1148	930	531	1515	1271	778	654	439	979	319	602	496	455	1053	1330	1330	2650	497	835	
20-May	498	280	373	257	1627	752	708	1151	702	720	323	978	1074	1265	1001	609	1476	1355	879	769	417	1031	391	578	659	631	1159	1460	1670	2440	453	894	
21-May	616	297	421	267	2048	765	842	1030	548	877	381	1156	1198	1410	928	658	1238	1299	1000	868	432	1024	445	576	703	900	1436	1400	2100	2550	546	966	
22-May	860	278	622	425	2916	1032	1000	1041	443	1055	678	1167	969	1280	953	882	1215	1155	739	1187	942	823	315	892	638	1498	2237	1120	1640	2070	780	1026	
23-May	1102	275	622	425	2916	1032	1000	1041	443	1055	678	1167	969	1280	953	882	1215	1155	739	1187	942	823	315	892	638	1498	2237	1120	1640	2070	780	1026	
24-May	1046	300	650	535	3164	1066	1054	1098	518	1088	845	992	965	1299	952	812	1080	1111	815	1416	1511	972	278	1088	598	1671	1784	927	1350	2250	931	1102	
25-May	894	339	653	693	3311	1206	1049	1062	615	1008	803	920	913	1312	1000	784	958	1042	805	1420	1641	1051	240	1348	610	1770	1903	782	1250	2100	705	1103	
26-May	805	391	659	851	3209	1318	1158	1020	681	827	811	1083	993	1623	969	667	886	890	987	1195	1463	1152	233	1277	598	1776	1996	718	1310	1910	744	1103	
27-May	789	500	876	1022	2928	1476	1212	929	798	888	765	1225	1164	1639	965	639	739	764	1129	1252	1217	1132	239	1600	611	1669	2127	735	1370	1730	955	1138	
28-May	828	789	935	1214	2754	1658	1257	864	868	1014	850	1279	967	2010	1079	551	677	687	1259	1190	1298	1302	292	2407	669	1566	1836	910	1550	1630	1340	1210	
29-May	911	888	1006	1323	2677	2542	1238	854	999	1136	929	1204	823	1679	1126	511	639	707	1411	1414	1874	1295	342	2991	850	1410	1522	1130	1730	1600	1390	1295	
30-May	894	882	1014	1483	2872	2340	1171	806	997	1198	734	1211	732	1673	1217	510	666	955	1502	1366	2243	1161	443	3546	730	1484	288	976	1880	1670	1250	1319	
31-May	947	950	944	1351	2887	1934	1191	895	748	1073	779	1120	687	1833	1396	510	681	1282	1424	1403	2173	1309	686	3304	804	1331	1243	905	1990	1830	1080	1305	
1-Jun	1488	1146	1323	1827	3077	1772	2054	1414	720	1361	686	1130	610	2790	2185	1414	1021	2882	1737	1355	1812	1622	736	3052	581	1345	1389	1050	2700	1730	1050	1573	
2-Jun	1605	1433	1302	1580	2974	2001	2213	1560	1092	1295	700	1023	662	2483	2164	1342	1314	2666	1794	1344	1740	1622	681	2515	660	1495	1539	1310	3030	1750	939	1607	
3-Jun	1806	1312	1233	1687	2662	2167	2404	1769	1575	1061	1114	970	760	1632	2192	1503	1582	2891	1602	1360	1664	1405	547	2329	774	1403	1663	1270	3120	1770	1040	1628	
4-Jun	2113	1454	1475	1705	2437	2616	2550	1908	1893	1017	1595	1166	914	2032	1684	1730	2972	1327	1457	1596	1118	454	2070	954	1167	1806	1420	3030	1830	2220	1722	1722	
5-Jun	2243	1707	1479	1486	2072	2907	3032	1977	2025	1186	1864	1441	983	1787	1964	2043	1951	2861	1042	1318	1512	1091	480	1557	1284	1095	1966	1640	2620	1820	3420	1803	
6-Jun	2019	1934	1425	1542	2417	3531	3304	2190	2006	1171	1933	1481	980	1816	1783	1882	1944	2797	829	1378	1484	1281	518	1372	1505	1146	2193	1220	2590	1680	4027	1851	
7-Jun	2066	2043	1550	1743	1840	4440	2976	2509	1875	1234	1962	1697	839	1812	1658	1703	1950	2976	778	1815	1425	1373	519	1225	1564	1130	2374	1030	2670	1470	4100	1868	
8-Jun	2442	2162	1627	1816	1566	4856	2514	2686	1826	1115	2068	2059	809	1150	1534	1466	1827	2423	814	2116	1452	1384	520	1306	1543	1199	2514	980	2150	1420	4178	1856	
9-Jun	2971	2082	1753	1957	1449	4406	1882	2468	1903	1165	2197	2132	845	1116	1461	1225	1787	2166	840	2143	1376	1496	516	1437	1463	1103	2010	1160	2080	1340	4162	1809	
10-Jun	3450	1994	1750	2161	1582	3234	1574	2305	1771	1143	2314	2284	916	1330	1499	1328	1824	2149	819	1990	1219	1446	455	1311	1154	984	1941	1370	2530	1310	2914	1743	
11-Jun	3403	1747	1806	2361	1768	2956	1591	2259	1611	1157	2079	2373	1050	1689	1481	1844	1971	2174	822	2049	1171	1309	407	1378	964	1874	1750	2090	1230	2290	1729	1729	
12-Jun	3438	1439	1908	1731	2135	3032	1853	2170	1399	1113	1567	2262	1192	2282	1519	2524	2125	2355	1042	2123	1069	1230	399	1490	1466	856	910	1759	1490	1750	1200	1860	1718
13-Jun	3223	1094	1741	1298	2845	3244	2070	2258	1108	1046	1675	2416	1192	2771	1445	3096	2247	2422	934	2123	943	971	376	1259	959	834	1710	1450	1970	1300	1470	1725	
14-Jun	2906	737	1731	1234	3337	3351	2339	2377	1168	1164	1535	2604	1089	3234	1431	3774	2428	2449	934	2144	883	781	389	1333	1096	868	1631	1590	2350	1280	1170	1785	
15-Jun	2704	610	1699	1450	3422	3230	2373	2364	1237	1420	1240	2559	933	3239	1293	4303	2223	2409	840	1996	888	733	325	1414	1012	1107	1309	1720	3370	1340	1030	1803	
16-Jun	2729	661	1863	1830	2873	3219	2446	2208	1239	1499	1187	2440	762	3572	1222	4558	2238	2332	884	2004	775	673	307	1224	963	1354	1113	1810	4270	1390	1000	1827	
17-Jun	2959	694	2156	2631	3264	3288	2468	1997	1240	1412	1303	2271	863	2769	1185	4025	2210	2602	809	2064	708	737	290	1195	903	1604	1114	1830	4480	1530	1000	1836	
18-Jun	3294	674	2055	3532	2910	3026	2420	1840	1373	1440	1379	1941	1036	2356	1169	2924	2123	3264	785	2208	796	743	276	1214	877	1919	1158	1540	3570	1630	1120	1817	
19-Jun	3458	810	1808	3713	2970	2812	3236	1524	1442	1323	1251	1739	1158	2496	1299	2915	2063	3813	985	2279	887	759	269	1158	920	2020	1068	1470	2650	1780	1150	1845	
20-Jun	3319	862	1846	3775	3344	2758	2379	1419	1434	1179	1255	1878	1164	2983	1182	3298	2216	3															

Table 3

Upper Structure Unit RICD Water Right
1,000 cfs flow rate, Jul 1 - Aug 15

Explanation Values indicate daily flow rate in cubic feet per second

Shaded cells indicate days when the estimated flow of the Roaring Fork River was between 1,000 cfs and 850 cfs.

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	
1-Jul	2546	603	2503	3028	4935	1742	1892	1401	935	857	910	1373	967	2997	668	4081	1612	2677	1684	2005	553	634	164	701	804	1708	662	766	2820	1800	1010	1649	
2-Jul	2483	748	2306	2949	4527	1858	1866	1307	832	789	852	1283	1283	477	2909	625	4109	1549	2432	1592	2054	541	574	154	685	681	1615	668	726	2400	1750	995	1571
3-Jul	2330	611	2063	3034	4289	1894	1860	1251	779	750	812	1219	729	2907	594	3824	1413	2297	1522	1991	502	528	150	629	650	1591	707	655	2090	1810	1000	1496	
4-Jul	2135	526	1972	2774	3633	1956	1827	1186	733	720	854	1134	711	2475	568	3414	1384	2216	1460	1737	466	514	178	599	609	1434	675	612	2100	1660	880	1398	
5-Jul	1888	481	1787	2712	3519	1957	2396	1127	696	685	777	1061	742	1834	526	2862	1423	2070	1433	1672	409	481	214	579	584	1362	617	600	2090	1550	794	1318	
6-Jul	1716	458	1589	2812	3158	1908	2079	1069	673	678	811	1005	769	1543	491	2990	1322	1809	1462	1623	377	449	211	546	583	1306	722	584	1960	1450	712	1254	
7-Jul	1646	440	1412	3092	2939	1835	1744	979	613	646	704	986	770	1641	460	3321	1263	1757	1354	1577	349	457	190	518	574	1274	661	540	2060	1340	653	1226	
8-Jul	1638	444	1384	3798	3120	1767	1421	867	552	628	753	1070	995	1925	429	3345	1171	1684	1232	1584	314	443	159	495	535	1193	710	524	1880	1230	627	1256	
9-Jul	1568	451	1456	3917	3500	1771	1425	844	498	569	804	1091	816	1840	418	5296	1075	1528	1244	1590	360	455	177	451	510	1168	837	493	1720	1170	639	1280	
10-Jul	1517	503	1343	3665	4221	1545	1387	721	479	552	698	913	658	1807	405	5924	1014	1279	1468	1444	368	526	169	423	469	1112	801	451	1600	1100	568	1268	
11-Jul	1453	409	1355	2954	3130	1540	1232	609	492	541	609	785	595	2066	396	5781	990	1235	1312	1307	298	464	165	392	466	1043	702	425	1520	1070	560	1156	
12-Jul	1410	451	1345	2435	2614	1501	1238	599	446	563	549	772	632	2104	389	6027	923	1146	1180	1154	266	426	153	369	439	1046	686	434	1400	1040	532	1106	
13-Jul	1459	441	1370	2160	2134	1636	1285	569	425	522	504	745	607	2068	363	5676	861	1128	1104	1013	249	460	149	352	406	1057	633	437	1320	986	466	1051	
14-Jul	1244	404	1317	2094	2915	1406	1224	543	455	481	478	783	511	1849	347	4973	823	1076	1021	1031	247	472	137	327	391	1100	579	380	1230	922	427	1007	
15-Jul	1175	370	1206	1968	2491	1269	1246	525	434	443	456	799	500	1782	304	4223	785	1038	955	944	349	493	126	306	370	1047	510	361	1150	858	407	936	
16-Jul	1328	383	1351	2264	2927	1490	2029	545	436	413	459	942	515	1855	304	5600	977	1148	865	927	615	467	129	303	399	948	478	336	1110	781	378	1056	
17-Jul	1261	440	1279	2167	2705	1475	2052	573	428	384	438	1081	466	1697	299	5329	1071	1114	836	935	744	395	125	280	638	950	442	312	1060	745	351	1035	
18-Jul	1156	443	1208	2022	2396	1431	1668	551	382	364	451	1005	443	1566	294	4328	1034	1116	792	865	593	350	116	270	496	864	422	323	1050	711	326	937	
19-Jul	1129	359	1130	2041	2283	1386	1631	476	365	344	454	870	427	1389	343	4066	1017	1028	756	855	478	327	116	260	446	763	414	364	995	690	302	887	
20-Jul	1032	320	1087	1944	2268	1505	1688	451	335	327	397	889	430	1334	366	4922	879	1052	708	886	415	307	122	263	411	713	456	390	956	654	270	896	
21-Jul	912	286	1033	2031	1989	1554	1677	438	317	315	385	809	430	1248	358	4445	820	978	682	807	374	292	124	253	377	661	506	417	978	613	355	854	
22-Jul	869	268	1016	1755	1823	1722	1774	457	298	316	358	782	415	1147	359	3595	760	992	765	820	333	278	118	245	330	686	426	509	1090	577	379	815	
23-Jul	848	258	1077	1716	1633	1607	1707	439	289	328	321	771	403	1042	372	3331	724	1206	732	810	327	264	117	240	320	681	400	481	1100	549	318	786	
24-Jul	765	247	1083	1498	1744	1497	1656	401	277	414	309	663	414	1045	414	3114	688	1065	844	781	308	234	110	219	353	804	361	441	1200	508	275	765	
25-Jul	723	260	1011	1377	1578	1247	1565	378	266	393	427	694	443	909	396	3321	658	904	1000	807	293	242	109	167	315	968	362	430	1010	487	244	741	
26-Jul	697	343	967	1448	1500	1018	1347	399	267	404	356	628	423	925	341	3434	625	817	891	877	270	253	133	139	287	902	367	503	949	531	221	718	
27-Jul	654	352	1015	1280	1437	958	1222	437	286	373	305	585	391	940	291	3150	608	788	804	787	268	147	195	290	764	365	453	888	538	203	679		
28-Jul	604	277	1046	1218	1382	862	1106	464	265	411	278	518	352	906	275	2936	580	800	788	800	742	230	147	195	290	764	365	453	888	538	203	645	
29-Jul	562	242	1168	1080	1282	811	1020	429	349	508	268	476	339	876	267	2930	644	839	1026	701	242	197	133	213	243	578	310	423	848	489	273	638	
30-Jul	543	225	993	1241	1343	805	943	390	470	264	448	333	857	263	2969	603	817	792	709	230	185	126	203	229	518	311	345	754	486	321	616		
31-Jul	528	218	869	1151	1264	758	919	428	503	370	273	428	314	838	268	2940	553	817	719	739	211	191	120	184	220	508	341	307	699	464	286	598	
1-Aug	494	190	857	1469	1353	752	901	358	411	441	250	388	286	951	269	2790	491	839	759	729	182	215	116	179	210	503	374	275	670	470	274	595	
2-Aug	482	177	803	1185	1192	812	866	396	343	483	300	433	278	908	301	2333	481	719	731	726	176	229	85	174	206	496	368	260	654	430	401	562	
3-Aug	479	165	745	1139	1033	773	828	336	318	445	255	436	274	814	276	2194	490	685	645	685	182	238	56	171	172	497	307	266	634	403	397	527	
4-Aug	449	161	679	1463	948	662	767	302	303	353	223	496	272	763	257	2248	492	726	612	646	181	282	56	160	182	578	278	266	617	375	320	520	
5-Aug	409	151	629	1450	933	585	725	286	282	314	212	404	347	810	232	2358	435	837	610	641	178	249	57	151	188	678	279	258	591	356	415	518	
6-Aug	378	129	585	1411	1003	536	914	278	270	282	198	377	401	759	220	2212	398	932	563	758	179	291	59	142	191	538	297	323	653	345	363	516	
7-Aug	361	122	598	1295	949	524	790	366	260	253	182	397	441	675	207	1938	378	950	544	668	169	389	69	125	185	493	285	324	693	351	309	493	
8-Aug	350	119	566	1175	846	491	739	440	241	238	169	334	447	722	199	1909	359	731	508	594	160	343	71	115	172	474	248	321	796	334	298	468	
9-Aug	336	115	573	1153	773	477	695	323	223	225	176	293	387	731	218	1516	345	624	469	566	132	381	62	108	162	456	239	275	724	320	257	430	
10-Aug	312	119	564	985	721	438	628	319	195	231	171	281	369	689	232	1368	332	989	429	601	149	358	56	102	143	489	235	236	718	307	229	419	
11-Aug	285	161	521	863	658	423	588	280	183	259	169	270	391	809	210	1441	319	1078	399	651	141	346	49	76	132	475	243	222	666	273	212	413	
12-Aug	262	182	516	852	641	434	597	270	175	317	176	290	374	666	204	1146	389	1146	389	626	150	29											

Table 4

Lower Structure Unit RICD Water Right

1,350 cfs flow rate, May 14 - May 31

Explanation Values indicate daily flow rate in cubic feet per second.

Shaded cells indicate days when the estimated flow of the Roaring Fork River was less than 1,350 and 1,147 cfs.

Cells indicate days when historical flow rate is between 1,350 and 1,275 cfs and consequently, Upper Structure Unit 1,500 cfs water rights is also potentially in-priority

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
14-May	373	220	354	312	1293	644	582	1207	681	572	257	732	678	842	718	285	1218	936	754	446	525	837	118	172	423	229	633	1020	775	1270	427	630
15-May	349	239	318	302	1645	623	608	1378	782	485	299	748	713	975	724	407	1250	1029	642	488	496	827	125	257	378	241	688	1090	736	1330	433	665
16-May	380	239	305	282	1719	649	606	1492	876	435	279	537	746	1146	766	559	1433	1134	552	536	496	1011	161	302	375	287	787	1170	707	1440	409	704
17-May	483	242	299	265	1625	685	602	1468	956	399	247	457	767	1196	881	612	1548	1169	561	538	634	1089	167	452	406	399	873	1160	782	1650	414	743
18-May	419	234	322	250	1562	767	588	1330	1052	425	269	631	852	1158	937	535	1425	1213	613	613	507	1009	226	560	405	378	946	1160	1010	1760	484	763
19-May	439	258	366	252	1428	795	612	1193	925	562	273	870	930	1148	930	531	1515	1271	778	654	439	979	319	602	496	455	1053	1330	1330	2650	497	835
20-May	498	280	373	257	1627	752	708	1151	702	720	323	978	1074	1265	1001	609	1476	1355	879	789	417	1031	578	578	659	631	1159	1460	1670	2440	453	894
21-May	616	297	421	267	2048	765	842	1030	548	877	381	1156	1198	1410	928	658	1238	1299	1000	888	432	1024	445	576	703	900	1436	1400	2100	2550	546	966
22-May	860	278	538	332	2354	805	964	1009	472	919	544	1233	1069	1448	922	808	1228	1345	981	934	551	806	360	650	719	1270	1682	1440	2320	2230	740	1026
23-May	1102	275	622	425	2916	932	1000	1041	443	1055	678	1167	969	1280	953	882	1215	1155	739	1187	942	823	315	892	638	1498	2237	1120	1640	2070	780	1064
24-May	1046	300	650	535	3164	1066	1054	1098	518	1088	845	992	965	1299	952	812	1080	1111	815	1416	1511	972	278	1088	598	1671	1784	927	1350	2250	931	1102
25-May	894	339	653	693	3311	1206	1049	1062	615	1008	803	920	913	1312	1000	784	958	1042	805	1420	1641	1051	240	1348	610	1770	1903	782	1250	2100	705	1103
26-May	805	391	659	851	3209	1318	1158	1020	681	827	811	1083	993	1623	969	667	886	890	987	1195	1463	1152	233	1277	598	1776	1996	718	1310	1910	744	1103
27-May	789	500	876	1022	2928	1476	1212	929	798	868	765	1225	1164	1839	965	639	739	764	1129	1252	1217	1132	239	1600	611	1669	2127	735	1370	1730	955	1138
28-May	828	789	935	1214	2754	1658	1257	864	858	1014	850	1279	967	2010	1079	551	677	687	1259	1190	1298	1302	292	2407	669	1566	1836	910	1550	1630	1340	1210
29-May	911	888	1006	1323	2677	2542	1238	854	999	1136	929	1204	823	1679	1126	511	639	707	1411	1414	1874	1295	342	2991	850	1410	1522	1130	1730	1600	1390	1295
30-May	894	882	1014	1483	2872	2340	1171	806	997	1198	734	1211	732	1673	1217	510	666	955	1502	1366	2243	1161	443	3546	730	1484	1288	976	1880	1670	1250	1319
31-May	947	950	944	1351	2887	1934	1191	895	748	1073	779	1120	667	1833	1396	510	681	1282	1424	1403	2173	1309	656	3304	604	1331	1243	905	1990	1830	1080	1305
Count	0	0	0	0	0	0	0	0	0	0	1	0	0	7	2	7	1	0	5	7	1	4	2	5	0	2	0	2	3	4	2	2

Lower Structure Unit Water Rights (cfs)	Date Begin	Date End	No. Days	Period Total Days	No. Days when Historical Flow (1980 - 2010) was Less than or Equal to RICD and Greater than or Equal to 85% of the RICD	No. Days in Range as a Percentage of the Period Total Days
1,350	14-May	31-May	18	558	76	14%

Table 5

Lower Structure Unit RICD Water Right+A126

2,000 cfs flow rate, June 1 - July 14

Explanation Values indicate daily flow rate in cubic feet per second.

Shaded cells indicate days when the estimated flow of the Roaring Fork River was between 2,000 and 1,700 cfs

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	
1-Jun	1488	1079	1315	1901	3306	1768	2085	1126	757	1348	924	1270	649	2865	2222	882	844	2481	1475	1293	2011	1403	772	3717	600	1250	1239	1000	2250	1860	1140	1557	
2-Jun	1455	1146	1323	1827	3077	1772	2054	1414	720	1361	686	1130	610	2790	2185	1141	1021	2862	1737	1355	1812	1622	736	3052	581	1345	1389	1050	2700	1730	1050	1573	
3-Jun	1605	1433	1302	1580	2974	2001	2213	1560	1092	1295	700	1023	662	2483	2164	1342	1314	2666	1794	1344	1740	1622	681	2515	660	1495	1539	1310	3030	1750	939	1607	
4-Jun	1806	1312	1233	1687	2662	2167	2404	1769	1575	1061	1114	970	760	1842	2192	1503	1532	2891	1602	1360	1664	1405	547	2323	774	1403	1663	1270	3120	1770	1040	1628	
5-Jun	2113	1454	1475	1705	2437	2616	2550	1908	1893	1017	1595	1166	919	1632	2082	1684	1730	2972	1327	1457	1596	1118	454	2070	954	1167	1808	1420	3030	1830	2220	1722	
6-Jun	2243	1707	1479	1486	2072	2907	3032	1977	2025	1166	1864	1441	983	1787	1964	2043	1951	2861	1042	1318	1512	1091	480	1557	1284	1095	1996	1640	2620	1820	3420	1803	
7-Jun	2019	1934	1425	1542	2147	3531	3304	2190	2006	1171	1933	1681	960	1816	1783	1882	1944	2797	829	1378	1484	1281	518	1372	1505	1146	1130	1220	2590	1690	4027	1851	
8-Jun	2066	2043	1550	1743	1840	4440	2976	2509	1875	1234	1962	1897	835	1382	1658	1703	1950	2976	778	1815	1425	1373	519	1225	1564	1130	2374	1030	2670	1470	4100	1868	
9-Jun	2442	2162	1627	1816	1566	4856	2514	2686	1826	1115	2068	2059	809	1154	1486	1827	2473	874	2116	1452	1384	520	1306	1563	1199	2514	980	2150	1420	1470	4178	1856	
10-Jun	2971	2082	1753	1957	1449	4406	1882	2468	1903	1163	2197	1232	845	1130	1461	1225	1787	2166	840	2143	1376	1496	516	1437	1163	2010	1160	2060	1340	4162	1809		
11-Jun	3450	1994	1750	2161	1582	3234	1574	2305	1771	1143	2314	2254	916	1330	1499	1326	1824	2149	819	1980	1219	1446	455	1311	1154	984	1941	1370	2530	1310	2914	1743	
12-Jun	3403	1747	1806	2367	1768	2956	1591	2259	1611	1157	2078	2373	1050	1689	1491	1844	1971	2174	822	2040	1171	1309	407	1378	957	964	1874	1750	2090	1230	2290	1729	
13-Jun	3438	1439	1908	1731	2135	3092	1853	1710	1399	1113	1567	2262	1179	2282	1519	2524	2125	2355	1042	2123	1069	1230	399	1466	856	910	1759	1490	1750	1200	1860	1718	
14-Jun	3223	1094	1741	1296	2845	3244	2070	2258	1108	1046	1675	2416	1192	2771	1445	3096	2247	2422	934	2123	943	971	376	1259	959	834	1710	1450	1970	1300	1470	1725	
15-Jun	2936	737	1731	1234	3337	3351	2339	2377	1168	1164	1535	2004	1089	3234	1431	3774	2428	2449	934	2144	883	781	359	1333	1096	888	1631	1590	2350	1280	1170	1785	
16-Jun	2704	610	1699	1450	3422	3320	2373	2364	1237	1420	1240	2559	933	3239	1293	4303	2223	2409	840	1996	888	733	325	1414	1012	1107	1309	1720	3370	1340	1030	1803	
17-Jun	2729	661	1863	1830	2873	3219	2446	2208	1239	1499	1187	2440	762	3572	1222	4558	2238	2332	884	2004	775	673	307	1224	963	1354	1113	1810	4270	1390	1000	1827	
18-Jun	2959	694	2156	2631	2564	3288	2488	1987	1240	1412	1303	2271	863	2769	1185	4025	2210	2602	809	2064	708	737	290	1195	903	1604	1114	1830	4480	1530	1000	1836	
19-Jun	3454	674	2055	3532	2910	3026	2420	1840	1373	1440	1379	1941	1036	2356	1169	2924	2123	3264	765	2208	796	743	276	1214	877	1919	1158	1540	3570	1630	1120	1825	
20-Jun	3498	810	1808	3713	2970	2812	2326	1524	1442	1323	1251	1739	1158	2496	1299	2915	2063	3813	965	2279	887	759	269	1158	920	2020	1068	1470	2650	1780	1150	1817	
21-Jun	3319	862	1846	3756	3344	2758	2379	1419	1434	1179	1255	1878	1164	2983	1182	3298	2216	3606	1141	2415	757	729	269	1078	908	2000	1048	1430	2710	1670	1130	1845	
22-Jun	3148	835	1937	3750	3576	2715	2304	1381	1335	815	1224	1816	1077	3111	1337	3369	2539	3408	1305	2453	690	761	280	1031	801	2147	988	1320	2800	1720	1080	1839	
23-Jun	3109	727	2092	3616	3301	2426	2210	1348	1205	675	1189	1690	1067	3148	1212	3165	2078	3315	1474	2519	659	685	250	1023	715	2254	906	1220	2880	1830	1000	1770	
24-Jun	2990	594	2137	5022	3233	2899	1933	1221	1160	712	1087	1423	1157	2443	910	3184	1566	2749	1302	2616	618	763	198	829	728	2172	880	1120	3030	2000	995	1732	
25-Jun	3169	581	2158	4778	3077	2210	2281	1187	1052	740	1059	1177	1132	2612	824	3511	1525	2498	1476	2598	645	716	214	819	737	2107	823	1000	3310	2260	968	1700	
26-Jun	3169	581	2158	4778	3077	2210	2281	1187	1052	740	1059	1177	1132	2612	824	3511	1525	2498	1476	2598	645	716	214	819	737	2107	823	1000	3310	2260	968	1700	
27-Jun	3169	581	2158	4778	3077	2210	2281	1187	1052	740	1059	1177	1132	2612	824	3511	1525	2498	1476	2598	645	716	214	819	737	2107	823	1000	3310	2260	968	1700	
28-Jun	2745	560	2349	2938	3263	1316	2346	1109	944	744	941	1084	833	2954	658	3903	1419	2355	1642	2399	632	729	183	802	649	1791	646	905	2970	2200	836	1573	
29-Jun	2328	466	2471	2801	3454	1421	2236	1083	1118	748	818	1265	889	3063	560	3671	1191	2247	1693	2109	575	703	177	771	655	1894	650	845	2980	2070	907	1544	
30-Jun	2240	440	1412	3092	2800	3814	1459	2092	966	912	746	1276	818	818	3338	509	3336	1196	2138	1700	1990	570	657	182	744	939	1794	645	785	2990	1870	1060	1515
1-Jul	2546	603	2593	3028	4935	1742	1892	1401	935	857	910	1373	967	2997	668	4081	1612	2671	1684	2005	553	634	164	701	804	1708	652	766	2820	1800	1010	1649	
2-Jul	2483	748	2306	2949	4527	1858	1866	1307	832	789	852	1283	847	2909	625	4109	1549	2432	1992	2054	541	574	154	695	681	1615	668	726	2400	1750	995	1571	
3-Jul	2330	611	2063	3034	4289	1894	1850	1251	778	750	812	1219	729	2907	594	3824	1413	2297	1522	1905	502	528	150	629	650	1591	707	655	2090	1810	1000	1496	
4-Jul	2135	526	1972	2774	3833	1956	1827	1186	733	720	854	1134	711	2475	568	3416	1384	2216	1460	1737	466	514	178	599	609	1434	675	612	2100	1660	880	1398	
5-Jul	1888	481	1787	2712	3519	1951	2336	1127	696	695	777	1061	742	1834	526	2862	1423	2070	1433	1672	409	481	214	579	584	1362	617	600	2090	1550	794	1318	
6-Jul	1716	458	1589	2812	3168	1908	2079	1069	673	678	811	1005	769	1543	491	2960	1322	1809	1462	1623	377	449	211	546	583	1306	722	584	1960	1450	712	1254	
7-Jul	1646	440	1412	3092	2939	1835	1744	979	613	646	704	986	770	1641	460	3521	1263	1757	1354	1577	349	457	190	518	574	1274	661	540	2060	1340	653	1226	
8-Jul	1638	444	1384	3796	3120	1765	1421	867	552	628	753	1070	995	1925	429	4345	1171	1684	1232	1584	314	443	159	495	535	1193	710	524	1890	1230	627	1256	
9-Jul	1568	451	1456	3917	3500	1771	1425	844	498	569	804	1091	816	1840	418	5296	1075	1528	1244	1590	360	455	177	451	510	1188	837	493	1720	1170	639	1280	
10-Jul	1517	503	1343	3665	4221	1646	1387	721	479	552	698	913	658	1857	405	5924	1014	1279	1468	1444	368	526	169	423	499	1112	801	451	1600	1100	568	1268	
11-Jul	1453	409	1355	2964	3130	1540	1232	6																									

Lower Structure Unit RICD Water Right

380 cfs flow rate, July 15 - Sept 15

Explanation Values indicate daily flow rate in cubic feet per second.

Shaded cells indicate days when the estimated flow of the Roaring Fork River was between 380 and 323 cfs

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	
15-Jul	1175	370	1296	1968	2491	1259	1246	525	434	443	456	799	502	1782	340	4223	785	1038	955	944	349	493	426	306	370	1047	510	361	1150	858	407	936	
16-Jul	1328	383	1351	2264	2927	1490	2029	545	436	413	459	942	515	1855	300	5600	977	1148	865	927	615	467	129	303	949	448	476	336	1110	781	378	1055	
17-Jul	1261	440	1279	2167	2705	1475	2052	573	428	384	438	1081	466	1697	299	5329	1071	1114	836	935	744	395	125	280	638	950	442	312	1060	745	351	1035	
18-Jul	1156	443	1208	2022	2396	1431	1668	551	382	364	451	1005	443	1566	294	4328	1034	1126	792	865	593	350	116	270	496	864	422	323	1050	711	326	937	
19-Jul	1129	359	1130	2024	2283	1386	1631	476	365	344	454	870	427	1389	343	4066	1017	1028	766	855	478	327	116	260	446	763	414	364	995	690	302	887	
20-Jul	1032	320	1087	1944	2268	1505	1688	451	335	327	397	889	430	1334	366	4922	879	1052	704	886	415	307	122	263	411	713	456	390	956	654	270	886	
21-Jul	921	286	1033	2031	1989	1554	1677	438	317	315	365	809	430	1248	358	4445	820	978	682	807	374	292	124	253	377	661	506	417	978	613	355	854	
22-Jul	869	268	1016	1755	1722	1722	1774	457	298	316	358	782	415	1147	359	3595	760	992	765	820	333	278	118	245	330	686	426	509	1090	577	379	815	
23-Jul	848	258	1077	1716	1633	1607	1707	439	289	328	321	771	403	1042	372	3331	724	1206	732	810	327	264	117	240	320	661	400	461	1100	549	318	786	
24-Jul	765	240	1011	1377	1578	1474	1491	1656	401	277	414	309	663	411	1045	314	688	1065	844	781	308	234	110	219	353	804	361	441	1200	508	275	765	
25-Jul	723	260	1011	1377	1578	1474	1491	1656	378	266	393	427	694	443	909	396	3321	658	904	1000	807	293	242	109	167	315	968	362	430	1010	487	244	741
26-Jul	697	343	967	1448	1500	1018	1347	399	267	404	356	628	423	925	341	3434	625	817	891	877	270	253	133	139	287	902	357	503	949	531	221	718	
27-Jul	654	352	1015	1280	1437	958	1222	437	286	373	305	585	391	881	291	3150	608	788	804	787	268	273	147	195	290	764	365	453	888	538	203	679	
28-Jul	604	277	1046	1218	1382	862	1106	464	265	411	278	518	352	906	275	2836	580	800	792	730	254	220	135	200	274	668	322	510	997	495	212	645	
29-Jul	562	242	1168	1080	1282	811	1020	429	349	508	268	476	339	876	267	2930	644	839	1026	701	242	197	133	213	243	578	310	423	848	489	273	638	
30-Jul	543	225	993	1241	1343	805	943	394	390	470	264	448	334	857	263	2969	603	817	792	709	230	185	126	203	229	518	311	345	754	486	321	616	
31-Jul	528	218	869	1151	1264	758	919	428	503	370	273	428	314	838	268	2940	553	918	719	739	211	191	120	184	220	508	341	307	699	464	286	598	
1-Aug	494	190	857	1469	1353	752	901	358	411	441	250	388	286	951	269	2790	491	839	759	729	182	215	116	179	210	503	374	275	670	470	274	595	
2-Aug	482	177	803	1185	1192	813	866	386	343	483	300	433	278	908	301	2333	481	719	731	728	176	229	85	174	206	496	358	260	654	430	401	562	
3-Aug	479	165	745	1139	1033	773	828	336	318	445	255	436	274	814	276	2194	490	685	645	685	182	238	56	171	172	497	307	266	634	403	397	527	
4-Aug	449	161	679	1463	948	662	767	302	303	353	243	496	272	763	257	2248	492	726	612	646	181	282	56	160	182	578	278	266	617	375	320	520	
5-Aug	409	151	629	1450	933	585	725	286	282	314	212	404	347	810	232	2358	435	837	610	641	178	249	57	151	188	678	279	258	591	356	415	518	
6-Aug	378	129	585	1411	1003	536	914	278	270	282	198	377	401	759	220	222	398	932	563	758	179	291	59	142	191	538	297	323	653	345	363	516	
7-Aug	361	122	598	1295	949	524	790	366	260	253	182	397	441	675	207	1938	378	950	544	668	169	389	69	125	185	493	265	324	693	351	309	483	
8-Aug	350	119	566	1175	846	491	739	440	241	238	169	334	447	722	199	1909	359	731	508	594	160	343	71	115	172	474	248	321	796	334	298	468	
9-Aug	336	115	573	1153	773	477	695	323	223	225	178	293	387	731	218	1516	345	624	469	566	132	381	62	108	162	456	239	275	724	320	257	430	
10-Aug	312	119	644	965	721	439	628	319	195	231	171	281	369	889	232	1368	332	988	429	601	149	358	56	102	143	358	236	718	307	229	419	413	
11-Aug	285	161	521	863	658	423	588	280	183	259	169	270	391	610	210	1441	319	1078	399	651	141	346	49	76	132	475	243	222	666	273	212	402	
12-Aug	262	182	516	852	641	434	597	270	175	317	176	290	374	666	203	1399	299	1146	389	626	150	294	46	70	120	453	237	205	579	249	235	393	
13-Aug	262	169	541	1015	670	368	648	256	171	276	221	309	352	612	211	1315	280	1020	374	552	179	257	44	70	116	419	240	204	528	241	248	365	
14-Aug	259	147	601	792	617	340	568	251	158	260	209	276	348	564	228	1169	270	933	340	520	159	302	56	69	118	394	228	201	488	241	202	383	
15-Aug	405	151	545	730	676	316	523	231	156	248	257	260	341	519	237	995	265	863	325	542	152	462	54	81	117	359	214	215	464	253	183	359	
16-Aug	425	182	543	739	665	322	530	253	205	241	238	297	326	571	225	1053	270	792	319	515	181	380	81	107	112	356	209	246	480	249	190	368	
17-Aug	322	162	507	671	623	313	518	245	210	228	254	270	376	552	210	965	263	727	315	484	228	294	91	88	158	337	191	196	373	179	265	331	
18-Aug	282	146	493	676	746	309	523	232	196	266	242	241	322	512	203	994	266	660	315	481	186	289	71	138	114	376	196	238	425	216	201	340	
19-Aug	257	133	475	635	780	315	554	223	182	306	213	236	281	510	216	985	265	615	228	451	225	288	72	126	152	357	208	222	401	202	219	333	
20-Aug	239	124	647	630	590	218	175	279	198	241	259	503	218	978	250	918	278	545	307	434	232	258	85	104	154	340	192	212	386	192	376	332	
21-Aug	223	117	502	576	859	296	683	219	202	246	222	216	243	562	191	958	248	523	348	418	228	294	91	88	158	337	191	196	373	179	265	331	
22-Aug	210	122	495	527	879	311	685	261	286	221	196	205	268	676	189	947	252	500	368	425	226	318	91	86	161	335	187	181	358	173	228	333	
23-Aug	216	117	477	500	692	311	576	347	223	201	191	191	433	546	187	1009	243	477	348	395	223	285	64	84	170	314	178	173	346	173	222	320	
24-Aug	232	108	442	471	934	299	664	437	200	207	158	182	577	494	173	953	231	453	334	363	221	263	55	84	147	253	177	175	341	176	212	323	
25-Aug	250	113	455	453	906	291	937	449	185	200	144	176	518	490	162	888	229	502	403	353	219	242	55	82	136	255	182	174	338	179	193	328	
26-Aug	268	106	529	448	826	284	702	394	169	193	133	180	529	706	153	829	225	575	345	362	227	229	46	91	130	264	214	167	338	179	177	323	
27-Aug	228	102	441	416	646	279	576	313	174	184	124	182	467	607	140	845	232	460															

Lower Structure Unit Water Rights (cfs)	Date Begin	Date End	No. Days between Begin and End Dates	Total Days for 31-year Period (1980 - 2010)	No. Days when Historical Flow (1980 - 2010) was Less than or Equal to RICD and Greater than or Equal to 85% of the RICD	No. Days in Range as a Percentage of the Period Total Days
380	15-Jul	15-Sep	63	1953	162	8%

Attachment A
Comparison RICD Total Volume to Fifty percent
Average Historical Volume
For the Upper Structure Unit RICD Water Right

	Daily Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Upper Structure Unit RICD (cfs)	RICD Daily Volume (af)
1-Apr	173	171	240	475
2-Apr	177	176	240	475
3-Apr	176	175	240	475
4-Apr	177	176	240	475
5-Apr	183	181	240	475
6-Apr	186	184	240	475
7-Apr	190	188	240	475
8-Apr	197	195	240	475
9-Apr	205	203	240	475
10-Apr	207	205	240	475
11-Apr	210	208	240	475
12-Apr	212	210	240	475
13-Apr	221	218	240	475
14-Apr	227	225	240	475
15-Apr	219	217	240	475
16-Apr	228	225	240	475
17-Apr	239	237	240	475
18-Apr	252	250	240	475
19-Apr	255	253	240	475
20-Apr	257	255	240	475
21-Apr	266	263	240	475
22-Apr	279	277	240	475
23-Apr	290	287	240	475
24-Apr	303	300	240	475
25-Apr	302	299	240	475
26-Apr	296	293	240	475
27-Apr	294	292	240	475
28-Apr	311	308	240	475
29-Apr	332	329	240	475
30-Apr	357	353	240	475
1-May	359	355	240	475
2-May	372	368	240	475
3-May	391	387	240	475
4-May	410	406	240	475
5-May	425	420	240	475
6-May	436	432	240	475
7-May	454	449	240	475
8-May	481	477	240	475
9-May	491	486	240	475
10-May	515	510	240	475
11-May	542	536	240	475
12-May	567	561	240	475
13-May	590	584	240	475
14-May	630	624	240	475
	Subtotal (af)	13744	Subtotal (af)	20909

Attachment A
Comparison RICD Total Volume to Fifty percent
Average Historical Volume
For the Upper Structure Unit RICD Water Right

	Daily Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Upper Structure Unit RICD (cfs)	RICD Daily Volume (af)
15-May	665	658	1500	2970
16-May	704	697	1500	2970
17-May	743	735	1500	2970
18-May	763	755	1500	2970
19-May	835	826	1500	2970
20-May	894	885	1500	2970
21-May	966	957	1500	2970
22-May	1026	1016	1500	2970
23-May	1064	1054	1500	2970
24-May	1102	1091	1500	2970
25-May	1103	1092	1500	2970
26-May	1103	1092	1500	2970
27-May	1138	1126	1500	2970
28-May	1210	1198	1500	2970
29-May	1295	1282	1500	2970
30-May	1319	1306	1500	2970
31-May	1305	1291	1500	2970
1-Jun	1557	1542	1500	2970
2-Jun	1573	1557	1500	2970
3-Jun	1607	1591	1500	2970
4-Jun	1628	1612	1500	2970
5-Jun	1722	1705	1500	2970
6-Jun	1803	1785	1500	2970
7-Jun	1851	1832	1500	2970
8-Jun	1868	1849	1500	2970
9-Jun	1856	1838	1500	2970
10-Jun	1809	1791	1500	2970
11-Jun	1743	1725	1500	2970
12-Jun	1729	1712	1500	2970
13-Jun	1718	1700	1500	2970
14-Jun	1725	1708	1500	2970
15-Jun	1785	1767	1500	2970
16-Jun	1803	1785	1500	2970
17-Jun	1827	1809	1500	2970
18-Jun	1836	1817	1500	2970
19-Jun	1825	1807	1500	2970
20-Jun	1817	1798	1500	2970
21-Jun	1845	1826	1500	2970
22-Jun	1839	1821	1500	2970
23-Jun	1770	1753	1500	2970
24-Jun	1728	1711	1500	2970
25-Jun	1732	1714	1500	2970
26-Jun	1700	1683	1500	2970
27-Jun	1624	1608	1500	2970
28-Jun	1573	1557	1500	2970

Attachment A
Comparison RICD Total Volume to Fifty percent
Average Historical Volume
For the Upper Structure Unit RICD Water Right

	Daily Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Upper Structure Unit RICD (cfs)	RICD Daily Volume (af)
29-Jun	1544	1528	1500	2970
30-Jun	1515	1500	1500	2970
	Subtotal (af)	68494	Subtotal (af)	139590
1-Jul	1649	1632	1000	1980
2-Jul	1571	1556	1000	1980
3-Jul	1496	1481	1000	1980
4-Jul	1398	1384	1000	1980
5-Jul	1318	1305	1000	1980
6-Jul	1254	1241	1000	1980
7-Jul	1226	1213	1000	1980
8-Jul	1256	1243	1000	1980
9-Jul	1280	1267	1000	1980
10-Jul	1268	1255	1000	1980
11-Jul	1156	1144	1000	1980
12-Jul	1106	1095	1000	1980
13-Jul	1051	1041	1000	1980
14-Jul	1007	997	1000	1980
15-Jul	936	926	1000	1980
16-Jul	1055	1044	1000	1980
17-Jul	1035	1024	1000	1980
18-Jul	937	927	1000	1980
19-Jul	887	878	1000	1980
20-Jul	896	887	1000	1980
21-Jul	854	845	1000	1980
22-Jul	815	807	1000	1980
23-Jul	786	778	1000	1980
24-Jul	765	758	1000	1980
25-Jul	741	734	1000	1980
26-Jul	718	711	1000	1980
27-Jul	679	672	1000	1980
28-Jul	645	638	1000	1980
29-Jul	638	631	1000	1980
30-Jul	616	610	1000	1980
31-Jul	598	592	1000	1980
1-Aug	595	589	1000	1980
2-Aug	562	556	1000	1980
3-Aug	527	522	1000	1980
4-Aug	520	515	1000	1980
5-Aug	518	513	1000	1980
6-Aug	516	510	1000	1980
7-Aug	493	488	1000	1980
8-Aug	468	463	1000	1980
9-Aug	430	426	1000	1980
10-Aug	419	414	1000	1980
11-Aug	413	409	1000	1980

Attachment A
Comparison RICD Total Volume to Fifty percent
Average Historical Volume
For the Upper Structure Unit RICD Water Right

	Daily Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Upper Structure Unit RICD (cfs)	RICD Daily Volume (af)
12-Aug	402	398	1000	1980
13-Aug	393	389	1000	1980
14-Aug	365	361	1000	1980
15-Aug	359	356	1000	1980
	Subtotal (af)	38228	Subtotal (af)	91080
	Total April 1 - Aug 15 (af)	120465	Total April 1 - Aug 15 (af)	251579

Attachment B

Comparison RICD Total Volume to Fifty percent Average Historical Volume For the Lower Structure Unit RICD Water Right

	Day Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Lower Structure Unit RICD (cfs)	RICD Daily Volume (af)
14-May	630	624	1350	2673
15-May	665	658	1350	2673
16-May	704	697	1350	2673
17-May	743	735	1350	2673
18-May	763	755	1350	2673
19-May	835	826	1350	2673
20-May	894	885	1350	2673
21-May	966	957	1350	2673
22-May	1026	1016	1350	2673
23-May	1064	1054	1350	2673
24-May	1102	1091	1350	2673
25-May	1103	1092	1350	2673
26-May	1103	1092	1350	2673
27-May	1138	1126	1350	2673
28-May	1210	1198	1350	2673
29-May	1295	1282	1350	2673
30-May	1319	1306	1350	2673
31-May	1305	1291	1350	2673
Subtotal (af)		17685	Subtotal (af)	48114
1-Jun	1557	1542	2000	3960
2-Jun	1573	1557	2000	3960
3-Jun	1607	1591	2000	3960
4-Jun	1628	1612	2000	3960
5-Jun	1722	1705	2000	3960
6-Jun	1803	1785	2000	3960
7-Jun	1851	1832	2000	3960
8-Jun	1868	1849	2000	3960
9-Jun	1856	1838	2000	3960
10-Jun	1809	1791	2000	3960
11-Jun	1743	1725	2000	3960
12-Jun	1729	1712	2000	3960
13-Jun	1718	1700	2000	3960
14-Jun	1725	1708	2000	3960
15-Jun	1785	1767	2000	3960
16-Jun	1803	1785	2000	3960
17-Jun	1827	1809	2000	3960
18-Jun	1836	1817	2000	3960
19-Jun	1825	1807	2000	3960
20-Jun	1817	1798	2000	3960
21-Jun	1845	1826	2000	3960
22-Jun	1839	1821	2000	3960
23-Jun	1770	1753	2000	3960
24-Jun	1728	1711	2000	3960
25-Jun	1732	1714	2000	3960

Attachment B
Comparison RICD Total Volume to Fifty percent
Average Historical Volume
For the Lower Structure Unit RICD Water Right

	Day Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Lower Structure Unit RICD (cfs)	RICD Daily Volume (af)
26-Jun	1700	1683	2000	3960
27-Jun	1624	1608	2000	3960
28-Jun	1573	1557	2000	3960
29-Jun	1544	1528	2000	3960
30-Jun	1515	1500	2000	3960
1-Jul	1649	1632	2000	3960
2-Jul	1571	1556	2000	3960
3-Jul	1496	1481	2000	3960
4-Jul	1398	1384	2000	3960
5-Jul	1318	1305	2000	3960
6-Jul	1254	1241	2000	3960
7-Jul	1226	1213	2000	3960
8-Jul	1256	1243	2000	3960
9-Jul	1280	1267	2000	3960
10-Jul	1268	1255	2000	3960
11-Jul	1156	1144	2000	3960
12-Jul	1106	1095	2000	3960
13-Jul	1051	1041	2000	3960
14-Jul	1007	997	2000	3960
	Subtotal (af)	69288	Subtotal (af)	174240
15-Jul	936	926	380	752
16-Jul	1055	1044	380	752
17-Jul	1035	1024	380	752
18-Jul	937	927	380	752
19-Jul	887	878	380	752
20-Jul	896	887	380	752
21-Jul	854	845	380	752
22-Jul	815	807	380	752
23-Jul	786	778	380	752
24-Jul	765	758	380	752
25-Jul	741	734	380	752
26-Jul	718	711	380	752
27-Jul	679	672	380	752
28-Jul	645	638	380	752
29-Jul	638	631	380	752
30-Jul	616	610	380	752
31-Jul	598	592	380	752
1-Aug	595	589	380	752
2-Aug	562	556	380	752
3-Aug	527	522	380	752
4-Aug	520	515	380	752
5-Aug	518	513	380	752
6-Aug	516	510	380	752
7-Aug	493	488	380	752

Attachment B

Comparison RICD Total Volume to Fifty percent Average Historical Volume For the Lower Structure Unit RICD Water Right

	Day Average for 1980 - 2010 (cfs)	50 % Average Historical Volume (af)	Daily Rate of the Lower Structure Unit RICD (cfs)	RICD Daily Volume (af)
8-Aug	468	463	380	752
9-Aug	430	426	380	752
10-Aug	419	414	380	752
11-Aug	413	409	380	752
12-Aug	402	398	380	752
13-Aug	393	389	380	752
14-Aug	365	361	380	752
15-Aug	359	356	380	752
16-Aug	368	364	380	752
17-Aug	348	345	380	752
18-Aug	340	337	380	752
19-Aug	333	329	380	752
20-Aug	332	329	380	752
21-Aug	331	327	380	752
22-Aug	333	167	380	752
23-Aug	320	160	380	752
24-Aug	323	162	380	752
25-Aug	328	164	380	752
26-Aug	323	162	380	752
27-Aug	296	148	380	752
28-Aug	279	140	380	752
29-Aug	266	133	380	752
30-Aug	256	128	380	752
31-Aug	248	124	380	752
1-Sep	221	111	380	752
2-Sep	219	109	380	752
3-Sep	208	104	380	752
4-Sep	203	101	380	752
5-Sep	200	100	380	752
6-Sep	198	99	380	752
7-Sep	201	100	380	752
8-Sep	209	105	380	752
9-Sep	204	102	380	752
10-Sep	209	105	380	752
11-Sep	207	104	380	752
12-Sep	218	109	380	752
13-Sep	218	109	380	752
14-Sep	205	102	380	752
15-Sep	204	102	380	752
Subtotal (af)		25452	Subtotal (af)	47401
Total (af)		112425	Total (af)	269755

<p>DISTRICT COURT, WATER DIVISION NO. 5, COLORADO</p> <p>109 - 8th Street, Suite 104 Glenwood Springs, CO 81601-3361 (970) 947-3861</p> <hr/> <p>CONCERNING THE APPLICATION FOR WATER RIGHTS OF BOARD OF COUNTY COMMISSIONERS OF PITKIN COUNTY, COLORADO</p> <p>IN PITKIN COUNTY</p> <hr/>	<p>05/09/2011 DRAFT</p> <p>▲ COURT USE ONLY ▲</p> <hr/> <p>Case Number: 10CW305</p>
<p>FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RULING OF THE REFEREE</p>	

This matter is before the Court on the application of the Board of County Commissioners of Pitkin County ("Pitkin County") for Surface Water Right Appropriations for Recreational In-Channel Diversion. The undersigned Referee, having made such investigations as are necessary to determine whether or not the statements in the Application are true and having considered the application, the pleadings, and other materials and having become fully informed and advised with respect to the subject matter of the application, hereby makes the following ruling in this matter:

FINDINGS OF FACT

1. Applicant. The applicant is Board of County Commissioners of Pitkin County, c/o John M. Ely, Pitkin County Attorney, 530 East Main Street, Third Floor, Aspen, Colorado 81611, (970) 920-5190.
2. Application, Notice and Jurisdiction. The application in this case was filed with the District Court, Water Division No. 5 on December 30, 2010. Timely and adequate notice of the application was given in the manner prescribed by law, and the Court has jurisdiction over the subject matter of this proceeding and over all persons and property affected hereby, whether those persons or owners of property have appeared or not. The

lands and water involved in this case are not within the boundaries of a designated groundwater basin.

3. Statements of Opposition. Statements of opposition were filed timely by Basalt Water Conservancy District, Colorado River Water Conservation District and the Colorado River Water Conservation District, acting by and through its Colorado River Water Projects Enterprise, Colorado Water Conservation Board, Elk Mountain Lodge, LLC, Fall Line Properties, LLC, GRE II, LLP, Grand County Board of County Commissioners, Mountain Valley Cabin, LLC and Warren Creek LLC, PT RANCH BARN LLC, Southeastern Colorado Water Conservancy District, Starwood Metropolitan District, and Twin Lakes Reservoir and Canal Company. _____ have stipulated to the entry of this decree and such stipulations are incorporated into this ruling and decree.
4. Referral. The Application was referred to the Water Referee for Water Division No. 5 on January 3, 2011.
5. Report of the Division Engineer. The Division Engineer issued a Summary of Consultation on April 6, 2011. Pitkin County filed a Response to the Summary of Consultation on _____. The Referee has considered the Summary of Consultation and Pitkin County's response.
6. CWCB Recommendations Considered. The Colorado Water Conservation Board ("CWCB") submitted its findings of fact and recommendations to the Court on _____. The Water Referee has duly considered the findings and recommendations as required by § 37-92-305, C.R.S.
7. General Description of Application. Pitkin County seeks two conditional recreational in-channel diversion ("RICD") water right appropriations for the Pitkin County River Park Project, which consists of two in-channel diversion and control structures that divert, capture, possess, and/or control the flow of the Roaring Fork River in its natural course to create reasonable recreation experiences in and on the water for all non-motorized boating and related recreational uses as described more fully below.
8. Description of Water Rights. The Pitkin County River Park Project is comprised of two water rights: (1) the Pitkin County River Park Project Upper Control Structures ("Upper Structure Unit") and (2) the Pitkin County River Park Project Lower Control Structures ("Lower Structure Unit"). The two water rights are collectively referred to as the "RICD water rights" in this decree.
 - A. Location of structures: The Pitkin County River Park Project will be located on the Roaring Fork River downstream of the Highway 82 Upper Bypass Bridge, upstream of the confluence of the Fryingpan and Roaring Fork Rivers, within the

channel of the Roaring Fork River in Sections 17 and 18, Township 8 South, Range 86 West of the 6th P.M., Pitkin County, Colorado. The Pitkin County River Park Project will consist of two structure units within the Roaring Fork River. Each of the two structure units are designed to control, concentrate and direct the stream flows between the upper and lower extent of the structure unit; each structure creates a separate hydraulic feature on the river for the beneficial uses described below. A map depicting the upstream and downstream extent of the Pitkin County River Park Project, within which both structure units will be constructed, is attached as **Exhibit A**. Each of the two structure units will be constructed in the channel of the Roaring Fork River between the following two points:

- i. The Pitkin County River Park Project Upstream Extent will be located in the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 17, Township 8 South, Range 86 West, 6th P.M., Pitkin County, Colorado, at a point 320 feet from the west section line and 1480 feet from the north section line of said Section 17.
- ii. The Pitkin County River Park Project Downstream Extent will be located in the NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 18, Township 8 South, Range 86 West, 6th P.M., Pitkin County, Colorado, at a point 265 feet from the east section line and 560 feet from the north section line of said Section 18.

The precise location of the two structure units and related water right appropriations, upon construction, may be located within this stretch of the Roaring Fork River and will be confirmed upon making the RICD water rights absolute.

B. Source. Roaring Fork River, tributary to the Colorado River.

C. Appropriation Information.

- i. Date of initiation of appropriation: July 13, 2007.
- ii. How appropriation was initiated: Engineering, requests for proposals, field work, planning, considerations and decisions of the Board of County Commissioners, and posting notice of the appropriations.
- iii. Date water first applied to beneficial use: Not applicable.

D. Rates of Flow. The amounts of water claimed are rates of flow for different levels of recreational use as follows:

Structure	Period	Flow Rate (cfs)	Experience
Upper Structure Unit	April 1 – May 14	240	Blue
	May 15 – June 30	1,500	Double Black
	July 1 – August 15	1,000	Black
Lower Structure Unit	May 14 – May 31	1,350	Blue
	June 1 - July 14	2,000	Black
	July 15 – Sept. 15	380	Green

- E. Uses: Recreational uses, including all beneficial uses associated with RICD water rights as permitted under Colorado law (as such laws may be later changed or amended), including but not limited to non-motorized boating such as kayaking, canoeing, rafting, tubing, floating, and paddling.
13. Findings Pursuant to § 37-92-305(13)(a), C.R.S.. As required by § 37-92-305(13)(a), C.R.S., the Court has considered the evidence presented by the parties and the findings of fact made by Colorado Water Conservation Board, and finds as follows:
- A. The RICD water rights decreed herein will not materially impair the ability of the State of Colorado (“State”) to fully develop and place to consumptive beneficial use its compact entitlements.
- B. The adjudication and administration of the water rights decreed herein will promote maximum utilization of waters of the State. The RICD water rights decreed herein control water and place it to the intended beneficial uses via a reasonably efficient means of diversion without waste. The RICD water rights are non-consumptive and do not preclude all other water development opportunities.
- C. The reach of the Roaring Fork River in which the Pitkin County River Park Project will be located is an appropriate reach of stream for the intended recreational in-channel uses.
- D. The Pitkin County River Park Project will be accessible to the public for recreational in-channel uses. Pitkin County owns and controls the property over which access will be allowed.
- E. The RICD water rights decreed herein will not cause material injury to instream flow water rights appropriated pursuant to § 37-92-102(3) and (4), C.R.S.
14. Volume of Water. As summarized in the table below, the total volume of water represented by the flow rates for the RICD water rights decreed herein exceeds fifty

percent of the sum of the total average historical volume of water for the reach of stream in which the Pitkin County River Park Project will be located.

Structure	Period	Number of Days	Flow Rate (cfs)	Total Volume of Water Represented by RICD Flow Rates (af)	Fifty Percent of the Sum of the Total Average Historical Volume (af)
Upper Structure Unit	April 1 – May 14	44	240	20,909	13,744
	May 15 – June 30	47	1,500	139,590	68,494
	July 1 – Aug 15	46	1,000	91,080	38,228
			Total	251,579	120,466
Lower Structure Unit	May 14 – May 31	18	1,350	48,114	17,685
	June 1 - July 14	44	2,000	174,240	69,288
	July 15 – Sept 15	63	380	46,649	25,124
			Total	269,003	112,097

15. Availability of Unappropriated Water. With respect to the conditional water rights and priorities that are awarded herein, Pitkin County has shown that unappropriated water is available for appropriation.
16. Intent to appropriate. Pitkin County has effected appropriations of water by demonstrating a specific plan and intent to divert the claimed amounts of water at the claimed time periods and to apply such water to beneficial uses, specifically recreational in-channel non-motorized boating use in the Pitkin County River Park Project. § 37-92-103(3)(a), C.R.S. Pitkin County has completed the "first step" toward the conditional appropriations by showing the requisite intent to appropriate accompanied by an open, physical demonstration of that intent.

CONCLUSIONS OF LAW

17. Incorporation of Findings of Fact. The foregoing Findings of Fact are incorporated herein.
18. Notice and Jurisdiction. The Water Court for Water Division No. 5 has jurisdiction over the subject matter of these proceedings and over all persons, owners of property and water rights that may be affected hereby, whether or not they have chosen to appear. The application in this matter and the resume publication of the application placed such persons on notice of the relief requested by the application and granted by this decree.
19. RICD Water Rights Contemplated by Law. The application for approval of the RICD water rights described in paragraph 8 of this ruling and decree is contemplated by law

and satisfies the requirements of §§ 37-92-101, C.R.S., *et seq.*, including, but not limited to, §§ 37-92-102(6)(b), 37-92-103(10.3), 37-92-302, 37-92-305(13), 37-92-305(15) and 37-92-305(16), C.R.S.

20. Can and Will. The water rights decreed herein can and will be diligently completed and water can and will be diverted and beneficially used for the purposes adjudicated by this ruling and decree within a reasonable time.
21. Control Structures. The amounts of water claimed and decreed herein will be controlled in the water's natural course in the Roaring Fork River during the claimed time periods by means of the Upper and Lower Structure Units as described in paragraph 8 above. *See* § 37-92-103(7), C.R.S. Flow rates up to 2000 cfs will be efficiently controlled, concentrated and diverted, without waste, to create waves, hydraulic holes, large changes in current direction, and whitewater features that are used by kayakers and other boaters for the intended recreational experiences.
22. Diversion and Use. Controlling the claimed amounts of water during the claimed time periods by the proposed in-channel structures and devices and the use of such water for the intended recreational in-channel boating purposes:
 - A. Represents a reasonably efficient practice of diversion and beneficial use, *Alamosa-La Jara Water Users Protection Ass'n v. Gould*, 674 P.2d 914, 934-5 (Colo. 1983); §§ 37-92-102(2)(b), 37-92-103(4) and (7), C.R.S.;
 - B. Represents the use of the minimum amounts of water that are reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriations were lawfully made by Pitkin County, § 37-92-103(4) and (10.3), C.R.S.; and
 - C. Will create opportunities for the intended recreational experiences to occur, at the minimum stream flows needed to provide the identified recreational experiences. § 37-92-103(10.3), C.R.S.
21. Reasonable Recreational Experience. The proposed recreation experiences are reasonable. By using the proposed in-channel structures and devices in a reasonably efficient manner to control that amount of water that is reasonable and appropriate to accomplish without waste the intended recreational in-channel non-motorized boating purposes, and by thereby providing opportunities for reasonable recreation experiences to occur with the minimum amounts of water for each recreational opportunity, the proposed appropriations of water meet the beneficial use standards historically applied to water rights, which standards, as recognized by Senate Bill 01-216, are to be applied to

"recreational in-channel diversions." *See* § 37-92-103(4) and (10.3), C.R.S. *See also Santa Fe Ranches Property Owners Assoc. v. Simpson*, 990 P.2d 46, 53-54 (Colo. 1999).

23. No Injury to Instream Flow Rights and Flood Control. Decreed instream flow water rights exist in the reach of the RICD water rights decreed herein. However, exercise of the water rights decreed herein will complement, and will not cause material injury to, any CWCB instream flow water rights. Construction of the Pitkin County River Park Project will not adversely affect the reach of the stream or the natural environment of the stream that such decreed instream flow rights protect. The CWCB maintains no liability for any damages, injury or other issues related to or arising from Pitkin County's control structures.
24. No Injury: Operation of the RICD water rights decreed herein will not injuriously affect any owner of or person entitled to use water under a vested water right or decreed conditional water right so long as administered in accordance with this ruling and decree.

RULING OF THE REFEREE

25. Incorporation of the Findings of Fact and Conclusions of Law: The Findings of Fact and Conclusions of Law set forth in paragraphs 1 through 24 above are incorporated herein.
26. Approval of RICD Water Rights: The RICD water rights, described in paragraph 8 above, are hereby confirmed, approved and decreed, subject to the terms and conditions contained in this ruling and decree.
27. Terms and Conditions: The following terms and conditions are necessary to prevent injury to other water rights from the operation of the RICD water rights decreed herein:
 - A. Pitkin County shall provide to the Division Engineer and the Water Court final design documents for the Pitkin County River Park Project control structures that are signed and sealed by a professional engineer. Pitkin County will ensure that the design of the control structures will comply with applicable floodplain management requirements.
 - B. Pitkin County shall maintain and repair the control structures to conform to the original design.
 - C. Pitkin County may place a call for the RICD water rights only when such call will produce flows at the decreed control structures during daylight hours, subject to other terms and conditions decreed herein.

- D. Pitkin County may place a call for either the Upper Structure Unit or the Lower Structure Unit on any individual day.
28. Call Restrictions. The total volume of water represented by the flow rates for the RICD water rights decreed herein exceeds fifty percent of the sum of the total average historical volume of water for the reach of stream in which the Pitkin County River Park Project will be located. Therefore, pursuant to § 37-92-305(13)(f), C.R.S., when administration of a call for a RICD water right would not produce flows equal to or greater than eighty-five percent of the decreed flow rate at the decreed control structure, the Division Engineer shall not administer a call for the RICD water right.
29. Measurement and Administration. Colorado Division of Water Resources Gauge ROARING FORK RIVER AB FRYINGPAN RIVER NR BASALT (ROAFRYCO) is located 300 feet upstream of the Pitkin County River Park Project Upstream Extent. The RICD water rights decreed herein can be adequately measured and administered through the proposed reach by using the ROAFRYCO Gauge, or any other gauge acceptable to the Division Engineer, with or without adjustment for any intervening inflows and diversions between the RICD water rights and that gauge, as may be determined by the Division Engineer.
30. No Material Injury. The terms and conditions provided for in this ruling and decree are adequate to assure that no material injury to any water users will result from the operation of the RICD water rights.
31. Measuring Devices. Pitkin County shall install and maintain, at Pitkin County's expense, such additional meters, gauges or other measuring devices as are reasonably required by the Water Commissioner or Division Engineer, and shall report at reasonable times to the Water Commissioner and/or Division Engineer the readings of such meters, gauges or other measuring devices pursuant to § 37-92-502(5)(a), C.R.S.
32. Accounting. Pitkin County shall provide accounting forms in a manner acceptable to the Division Engineer to incorporate the RICD water rights decreed herein. Such accounting forms are not decreed herein, and may be changed, from time to time, with the approval of the Division Engineer, as may be appropriate under circumstances then existing. The accounting forms shall be adequate to account for Pitkin County's use under this ruling and decree on a daily basis and shall be completed and provided to the Division Engineer at intervals reasonably required by the Division Engineer. Upon request, Pitkin County shall provide such accounting forms to other opposers hereto, upon payment of reasonable reproduction costs.
33. Priorities. The RICD water rights and priorities granted herein are based on the appropriation dates contained herein and on the filing of the application in this case in the

Water Court in the year of 2010. Said RICD water rights and priorities shall be administered as having been filed in 2010, and shall be junior to all water rights granted pursuant to applications filed in previous years. As between all water rights applied for in the same calendar year, priorities shall be determined by historical dates of appropriation and shall not be affected by the date of application or the date of entry of ruling.

34. Diligence. The conditional RICD water rights decreed herein are hereby continued in full force and effect until the last day of _____, 20___. To maintain such conditional RICD water rights, an application for a finding of reasonable diligence shall be filed on or before the last day of _____, 20___, or a showing made on or before such date that such conditional rights have become absolute water rights by reason of the completion of the appropriations.
35. Notice of Transfer: Upon the sale or other transfer of any conditional water right decreed herein, the transferee shall file with the Water Court having jurisdiction a notice of transfer which shall state: (1) the title and case number of the case in which the conditional decree was issued, (2) the description of the conditional water right transferred, (3) the name of the transferor, (4) the name and mailing address of the transferee, and (5) a copy of the recorded deed or other transfer document. The owner of any conditional water right shall notify the Clerk of the Water Court having jurisdiction of any change in mailing address.
36. The Water Clerk shall file a copy of this Decree with the Division Engineer of Water Division No. 5 and the State Engineer.

Dated: _____

BY THE COURT

Holly Kirsner Strablizky
Water Referee
Water Division No.5

No protest was filed in this matter.

The foregoing ruling is confirmed and approved and is hereby made the judgment and
decreed of the Court.

DATED: _____

James Boyd
Water Judge
Water Division No. 5
State of Colorado

Staff's Recommended Findings of Fact
Board of Commissioners for the County of Pitkin
Case No. 5-10CW305
July 12, 2011

- I. Considering the specific amounts and activities as claimed in the application and proposed decree, and after deliberation in a public meeting held on July 12, 2011, the Board makes the following findings about this RICD:
- a. The Board must consider whether the adjudication and administration of the RICD would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements. The Board makes the finding that there remains unallocated Colorado River Compact apportionment available for consumptive use within Colorado. However, the Board also finds that the adjudication and administration of the RICD, for the flow amounts and time periods specified in the proposed decree, will materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements and will have an impact on the manner, cost, and timing of such development. The Board makes the following findings about this RICD for the flow amounts claimed:
 - i. There remains unappropriated water that Colorado could consumptively use upstream of the RICD reach but for the RICD water right pulling water down through this reach. The RICD will impair Colorado's ability to fully develop and place to consumptive beneficial use Colorado's compact entitlements under the Colorado River Compact, the Upper Colorado River Basin Compact, and the associated "Law of the River" upstream of the RICD. Effects on upstream compact development are significant because the Applicant seeks to double the number of flow rates allowed by law. For applicants seeking more than 50% of the total average historic volume of stream flows, as the Applicant is here, section 37-92-305(13(f)(II)&(III), C.R.S. (2010) requires that the RICD be limited to only 3 time periods and each time period be limited to one flow rate. Additionally, where more than 50% of the total average historic volume of stream flows is sought, applicants may only seek to impose a call if the call will produce at least 85% of the flow sought. § 37-92-305(13(f)(I). Applicant has not complied with the first statutory provision because it claims more than 50% of the total average historic volume of stream flows, but it claims 6 time periods and 6 flow rates. Applicant's failure to comply with the first statutory provision by seeking 6 different flow rates for 6 time periods (as indicated in the table below) will almost double the frequency of a call and the volume called. Applicant acknowledges that it may only place a call for the RICD water rights if the call will produce at least 85% of the flow sought and when such call will produce flows at the decreed control structures during daylight hours, but by claiming different flow rates at each control structure, Pitkin County will be able to call for water even when such a call would produce less than 85% of the maximum claimed rate of flow. For example, between May 15 and May

31, Pitkin County could place a call if it would produce only 76% of the maximum claimed flow rate. During that period, the claimed flow rate for the Upper Structure Unit is 1,500 c.f.s. Pitkin County could call for water at the Upper Structure Unit if such a call would produce between 1,500 c.f.s. and 1,275 c.f.s. (85% of 1,500 c.f.s.). At the same time, Pitkin County could place a call at the Lower Structure Unit if such a call would produce between 1,350 c.f.s. and 1,147 c.f.s. In effect, Pitkin County could place a call if such a call would produce between 1,500 c.f.s. and 1,147 c.f.s. (76% of 1,500). During other times of the year, Pitkin County would be able to call for water when such a call would produce between 63% and 76% (June 1 through July 1), 42% and 50% (July 1 through July 15), and 32% and 38% (July 15 through August 15) of the maximum claimed rate. Pitkin County's proposal clearly contravenes the plain language and the intent of section 37-92-305(13)(f). Because the Applicant fails to limit the RICD as required by law, the Board finds that the RICD will materially impair the ability of the State of Colorado to consumptively use its compact entitlements.

	Period	Flow Rate (cfs)
Upper Structure Unit	April 1 – May 14	240
	May 15 – June 30	1,500
	July 1 – Aug 15	1,000
Lower Structure Unit	May 14 – May 31	1,350
	June 1 - July 14	2,000
	July 15 – Sept 15	380

- ii. The Board finds that the distance of this RICD to the State line is considerable, which demonstrates that the location of RICD application does not significantly impact Colorado's ability to develop its compact entitlements, in light of the other issues.
- iii. The RICD is in close proximity to potentially suitable upstream points of diversion and upstream storage (Aspen, Snowmass or diversion to Hunter Tunnel of the Fry-Ark Project) that may be utilized by those who would place the water to consumptive beneficial use. The Board finds that these impacts will be exacerbated because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, roughly doubling the number of calls (and volume of water called) that may occur. Given the proposed terms and conditions, the Board finds that the RICD will materially impair the ability of the State of Colorado to consumptively use its compact entitlements.
- iv. The existence of suitable downstream points of diversion or storage for consumptive beneficial use before the water leaves the state may serve as a factual basis for the Board to determine whether the RICD should be granted under this factor. There are numerous potential downstream diversions and storage reservoirs that could be used to capture water that would flow through the RICD that may allow Colorado to fully use its compact entitlements.

However, it is unclear how the RICD's significant impact on the natural hydrograph will impact these potential diversion or storage sites.

- v. Exchange opportunities (such as exchanges of water released from Ruedi Reservoir up to Aspen or Snowmass or exchanges up to Hunter Tunnel of the Fry-Ark Project) within the state may be adversely impacted by the existence of the RICD. The Board finds that the RICD will likely materially impair the ability of the State of Colorado to consumptively use its Compact entitlements because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, roughly doubling the number of calls (and volume of water called) that may occur.
 - vi. The basin is already over-appropriated, or "water critical" during a portion of the RICD season. There will be significant impact to development of water above and below the RICD. Therefore, the Board finds that the RICD will materially impair Colorado's ability to fully use its compact entitlements.
 - vii. Existing undecreed and reasonably foreseeable uses within the state may be adversely impacted by the existence of the RICD. The Board finds that the RICD will likely materially impair the ability of the State of Colorado to consumptively use its Compact entitlements because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, roughly doubling the number of calls (and volume of water called) that may occur.
 - viii. The RICD will likely shield waters from consumptive uses upstream of the RICD that would otherwise be available under the Colorado River Compacts and the associated Law of the River, thereby materially impairing Colorado's ability to fully use its compact entitlements.
 - ix. Beneficial consumptive water use opportunities upstream from the claimed RICD that would further develop Colorado's compact entitlements would likely be materially impaired by Applicant's proposed stream flow amounts.
 - x. The Applicant has not included any provisions in the application or proposed decree for reducing or canceling the RICD.
- b. The Board must consider whether the exercise of the RICD would cause material injury to existing instream flow (ISF) water rights. The Board makes the following findings about this RICD regarding the potential of material injury to existing ISF water rights:
- i. As summarized below, there are two ISF water rights held by the CWCB. The nature and extent of these ISF water rights do not serve as a basis to recommend denial of the RICD application.

CWCB Case No.	Stream	Amount (cfs)	Approp. Date	Watershed	Counties
5-85CW646	Roaring Fork River	30 (10/1-3/31) 55 (4/1-9/30)	11/8/1985	Roaring Fork	Eagle & Pitkin
5-85CW639	Roaring	75 (10/1-3/31)	11/8/1985	Roaring	Eagle,

- | | Fork River | 145 (4/1-9/30) | Fork | Garfield & Pitkin |
|------|---|----------------|------|-------------------|
| ii. | The timing and duration of the proposed RICD as related to the existing ISF water rights do not serve as a basis for denying the RICD water rights application. The Board notes, however, that the RICD and the ISF water rights should not be stacked (or tabulated separately). | | | |
| iii. | Based on information provided by the Applicant, the Board finds that the RICD would not negatively impact the natural environment for which the ISF was decreed. | | | |
| iv. | The Board finds that the RICD could affect the natural environment that the ISF water rights protect during the construction and maintenance process, so the Board conditions this factor on the Applicant consulting with the DOW before and during construction and maintenance of the RICD structures to assure that these actions will not injure the natural environment that the ISF water rights protect. | | | |
| c. | The Board must determine whether the adjudication and administration of the RICD, in the amounts claimed, would promote maximum utilization of the waters of the State. The Board makes the following findings about this RICD regarding maximum utilization of waters of the State: | | | |
| i. | The Board finds that there are probable future upstream junior appropriations for direct diversion or storage (Aspen, Snowmass or diversions to Hunter Tunnel of the Fry-Ark Project) that may be adversely affected. The Board finds that the RICD will prohibit upstream junior appropriations for direct diversion and storage and, therefore, will hamper maximum utilization of the waters of the State because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, roughly doubling the number of calls (and volume of water called) that may occur. | | | |
| ii. | The Board finds that the proposed RICD appropriation for the flow amounts sought and the time periods specified will inhibit maximum utilization by restricting probable future changes, transfers, or exchanges of water rights from points of diversion downstream of the reach affected by the RICD to points upstream of or in the reach affected by the RICD. Examples of impacted future exchanges could be releases from Ruedi Reservoir exchanged up to Aspen or Snowmass through the RICD reach or exchanges up to Hunter Tunnel of the Fry-Ark Project through the RICD reach. The Board finds that these impacts will be roughly doubled because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, roughly doubling the number of calls (and volume of water called) that may occur. Given these proposed terms and conditions, the Board | | | |

- finds that the opportunity to allow future changes, transfers, and exchanges of water from points located downstream of the RICD to points located upstream of the RICD will be unduly impacted.
- iii. The RICD should not be denied or granted based upon any federal policies, regulations and laws.
 - iv. The Board finds that the proposed RICD appropriation does not promote maximum utilization of Colorado's water resources because the Applicant has not attempted to minimize its call upon the river and avoid waste. It is neither reasonable nor legal to claim flow rates for more than 50 percent of the total average historical volume of water in the reach and claim 6 flow rates, roughly doubling the number of calls (and volume of water called) that may occur under the statutory limitations for all RICDs.
 - v. The Board finds that there is a reasonable demand for the recreational activities sought for the time period claimed in application but not in the proposed decree. However, the Board finds that the Applicant has not demonstrated that there is need for the RICD season past Labor Day, as required by statute.
 - vi. The Board finds that the application does not have appropriate limitations on the days per period and the time of year during which the RICD would be exercised; thus it does not promote maximum utilization of Colorado's water resources. More specifically, the Applicant has requested that the RICD extend past Labor Day without demonstrating a demand, thereby impairing maximum utilization. The application to water court indicates that the proposed RICD season ends on Labor Day. Therefore, the request to extend the RICD season past Labor Day has not been properly noticed in the Division 5 Water Court Resume and seeks more water than properly claimed.
 - vii. The depths and individual flow rates of the proposed RICD do not promote maximum utilization for the flow amounts sought for the individual time periods because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, which significantly impairs maximum utilization.
 - viii. The frequency and duration of the requested amounts of water for the RICD for the requested periods do not promote maximum utilization of waters of the State.
 - ix. The economic effect of the proposed RICD does not serve as a factual basis for the Board to determine that the RICD should be denied or granted under this factor.
 - x. The environmental effects of the proposed RICD do not serve as a factual basis for the Board to determine that the RICD should be denied or granted under this factor.
 - xi. The relationship of the requested individual RICD flow rates to the historic appropriated and unappropriated flow rates for each time period requested are not appropriate because the Applicant is seeking flow rates for more than 50

percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, roughly doubling the number of calls (and volume of water called) that may occur, which impairs maximum utilization of the water.

- xii. The requested RICD will negatively affect other potential uses of water because the Applicant is seeking flow rates beyond that allowed by the statute, roughly doubling the volume of water allowed claimed called. Therefore, the proposed RICD will not promote maximum utilization of Colorado's water resources.
- xiii. The application fails to meet several of the elements of the definition of a RICD, as defined in section 37-92-103(10.3). The application has been filed by a county government. However, while the application claimed water from April 1 to Labor Day, the proposed decree requests flow rates beyond Labor Day, which is in conflict the application and notice requirements. Further, Pitkin County claims multiple flow rates during the same time periods. Finally, the RICD is not the minimum amount for a reasonable recreation experience because the Applicant has failed to meet the statutory limitation to have 3 flow rates, thereby failing to meet the definition by doubling the volume of water allowed.
- xiv. The requested RICD does not conserve or efficiently use the available stream flow because the Applicant claims more water than the statute allows, and therefore negatively impacts the maximum utilization of Colorado's water.
- xv. The basin is already over-appropriated or "water critical" during a portion of the RICD season; therefore the impact on existing water rights and users will directly impact future development above and below the RICD. Therefore, the Board finds that the RICD does not promote maximum utilization.
- xvi. The Applicant has failed to show how the proposed RICD works together with existing and/or future uses within the State of Colorado in order to promote maximum utilization of waters of the State.
- xvii. The Applicant has not included any provisions in the application or proposed decree for reducing or canceling the RICD.
- xviii. The Applicant has included descriptions of each recreational opportunity sought by the applicant at each flow amount sought. However, the Board finds that because the Applicant is seeking flow rates for more than 50 percent of the total average historical volume of water in the reach and the Applicant is proposing 3 additional flow rates above those allowed by law, the flow rates sought do not promote maximum utilization.
- xix. The historic frequency and flow rates of imported water and reservoir releases through the proposed RICD reach do not serve as a factual basis for the Board to determine that the RICD should be denied or granted under this factor.
- xx. The Board finds unappropriated native flows exist in the proposed RICD stream reach during some of the periods claimed; however, the percentage of unappropriated flows claimed by the RICD is excessive and indicates that the proposed RICD will not promote maximum utilization of waters of the State.

<p>DISTRICT COURT, WATER DIVISION NO. 5, COLORADO</p> <p>109 - 8th Street, Suite 104 Glenwood Springs, CO 81601-3361 (970) 947-3861</p> <hr/> <p>CONCERNING THE APPLICATION FOR WATER RIGHTS OF BOARD OF COUNTY COMMISSIONERS OF PITKIN COUNTY, COLORADO</p> <p>IN PITKIN COUNTY</p> <hr/> <p>Timothy J. Beaton, #10403 Patricia M. DeChristopher, #36951 Aaron S. Ladd, #41165 Moses, Wittemyer, Harrison and Woodruff, P.C. P. O. Box 1440 Boulder, Colorado 80306-1440 Telephone: (303) 443-8782 Facsimile: (303) 443-8796 tbeaton@mwhw.com; pdechristopher@mwhw.com; aladd@mwhw.com</p>	<p style="text-align: center;">▲ COURT USE ONLY ▲</p> <hr/> <p>Case Number: 10CW305</p>
<p style="text-align: center;">Statement of Pitkin County to the Colorado Water Conservation Board</p>	

INTRODUCTION

The Board of County Commissioners of Pitkin County (“Pitkin County”) filed its Application for Surface Water Right Appropriations for Recreational In-Channel Diversion, Case No. 10CW305, in Water Division No. 5 on December 30, 2010. Pitkin County intends to construct the Pitkin County River Park (“River Park”) on the Roaring Fork River upstream of the Town of Basalt and the confluence of the Roaring Fork and Fryingpan Rivers. The River Park was designed by Jason P. Carey, P.E., of RiverRestoration.org, a Colorado-based company that has designed whitewater features across Colorado and the West. The River Park has been designed for “park and play” whitewater recreation, where boaters can “put in,” play for several hours at either or both of the two whitewater features, and then “take out” at the same location. Pitkin County seeks to protect the consistency of stream flows at the River Park through Recreational In-Channel Diversion (“RICD”) water rights for each whitewater feature in order to attract boaters with consistent recreational experiences at the River Park.

Pitkin County submits this Statement to summarize its claims for RICD water rights in the context of the Colorado Water Conservation Board’s (“CWCB”) fact-finding review

pursuant to C.R.S. § 37-92-102(6). As discussed below, Pitkin County believes its proposed RICD water rights warrant favorable findings of fact from the CWCB.

PROCEDURAL SETTING

Colorado allows governmental entities to obtain RICD water rights with certain restrictions. Unlike other Water Court applications, RICD applications are subject to fact-finding review by the CWCB. C.R.S. § 37-92-102(6). The scope of the CWCB's fact-finding review is defined by statute:

The board, after deliberation in a public meeting, shall consider the following factors and make written findings as to each:

- (I) Whether the adjudication and administration of the recreational in-channel diversion would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements;
- (II) and (III) (Deleted by amendment....) [¹]
- (IV) Whether exercise of the recreational in-channel diversion would cause material injury to instream flow water rights appropriated pursuant to subsections (3) and (4) of this section; and
- (V) Whether adjudication and administration of the recreational in-channel diversion would promote maximum utilization of waters of the state.

C.R.S. § 37-92-102(6)(b); *see also Colo. Water Conservation Board v. Upper Gunnison River Water Conservancy Dist.*, 109 P.3d 585 (Colo. 2005). The CWCB adopted rules to offer guidance for the Board's consideration of RICD applications. 2 C.C.R. 408-3 ("CWCB Rules").

To assist in the Board's consideration of its application, Pitkin County has submitted the following documents for review by the CWCB staff and Board:

- Application, Case No. 10CW305, Water Division No. 5;
- *Design Engineering Report*, prepared by Jason P. Carey, P.E.;
- *Preliminary Design Drawings*, prepared by Jason P. Carey, P.E.;
- *Report in Support of Pitkin County River Park RICD Water Rights Application 10CW305*, prepared by James F. Pearce;
- *Supplemental Report for Pitkin County RICD*, prepared by James F. Pearce;
- *Draft CWCB Findings and Recommendations*, prepared by Pitkin County; and
- *Draft Proposed Decree*, dated May 9, 2011, prepared by Pitkin County.

¹ Senate Bill 06-037 deleted "the appropriate reach of stream required for the intended use" and "whether there is access for recreational use" as factors for consideration by the CWCB.

After the CWCB Board makes its findings of fact and recommendations to the Water Court, Pitkin County must proceed with its Water Court application to obtain a decree. Pitkin County must satisfy all statutory requirements for the RICD water rights, including but not limited to demonstrating to the Water Court and opposers that it can and will develop the RICD water rights, that a need for the RICD water rights exists, and that the RICD water rights are appropriate for the Roaring Fork River.

PITKIN COUNTY'S RICD PROPOSAL

Pitkin County has designed two control structure units to create two distinct recreational experiences at the River Park. To protect the stream flows necessary to achieve the intended recreational experiences, Pitkin County has claimed a water right for each control structure unit that is narrowly tailored for the design of that control structure unit. Each of Pitkin County's two RICD water rights consists of flow rates for three time periods. Each flow rate represents a different recreational experience associated with that specific water feature, as summarized in the table below:

Proposed Pitkin County River Park RICD Water Rights Amounts and Timing

Structure	Period	Flow Rate (cfs)	Feature	Experience²
Upper Structure Unit	April 1 – May 14	240	Hole	Blue
	May 15 – June 30	1,500	Wave	Double-Black
	July 1 – August 15	1,000	Wave-Hole	Black
Lower Structure Unit	May 14 – May 31	1,350	Wave-Hole	Blue
	June 1 – July 14	2,000	Wave	Black
	July 15 – Sept. 15	380	Hole	Green

Each type of whitewater feature utilizes different skills and provides a different recreational experience to navigate and play in than other types of features. For example, the Upper Structure Unit creates a whitewater feature referred to as a “wave” at flows above 1,500 cfs, which differs from the wave-hole feature that occurs at flows from 1,000 cfs to 1,500 cfs and the hole feature that occurs at flows between 240 cfs and 1,000 cfs. Whitewater features created by the Upper Structure Unit will generally require additional skill than those created at the Lower Structure Unit, in part due to the limited recovery pool for boaters who are “washed out” of the upper feature. In comparison, the Lower Structure Unit provides a larger recovery pool. A more detailed description of the control structure units and recreational experiences sought by Pitkin County is found in Jason Carey's *Design Engineering Report*.

The RICD flow rates claimed by Pitkin County are based on the design of the underlying control structure units and the range of natural stream flows expected on this stretch of the Roaring Fork River. Natural stream flows at the River Park historically range from 150 cfs to 3,500 cfs during the RICD season. James F. Pearce, *Report in Support of Pitkin County RICD Water Rights Application*, at p. 5. The RICD flow rates were identified by studying and modeling the hydraulics of the water surface at various flows to quantify the “hydraulic jump” expected at certain flow rates. This analysis is provided in Jason Carey's *Design Engineering*

² For convenience, the level of recreational experience is described by analogy to green (beginner), blue (intermediate), black (advanced) and double black (expert) runs on a ski hill.

Report at pages 9 through 11. As a result of this analysis, Pitkin County's proposed RICD water rights claim only the minimum stream flow necessary for the intended recreational experiences at each control structure unit.

ANALYSIS

The CWCB Board is required to make written findings of fact regarding the three factors identified in C.R.S. § 37-92-102(6)(b), which will be reviewed by the Water Court as Pitkin County proceeds with its Water Court application. For the reasons discussed below, Pitkin County requests favorable written findings of fact from the CWCB Board for all three factors.

Factor 1: Whether the adjudication and administration of the recreational in-channel diversion would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements.

To evaluate this factor, the Board must consider whether, if unappropriated compact entitlements remain to be developed, Pitkin County's proposed RICD water rights would *materially impair* the development of those resources. The CWCB Rules instruct the Board to consider how the proposed RICD water rights may impact compact entitlements, looking to criteria such as the proximity of the RICD to the State line, the availability of unappropriated water and the possibility that water would be shielded from consumptive use by virtue of the RICD. CWCB Rule 7.a.

The compacts relevant to Pitkin County's RICD water rights are the Colorado River Compact and the Upper Colorado River Compact. Whether and to what extent unappropriated compact entitlements exist in the Roaring Fork River basin and Colorado River basin is not known at this time; the CWCB has dedicated significant resources in the form of the State Water Supply Initiative and the State Water Availability Study to begin to answer questions regarding the amounts and locations of unappropriated entitlements under the Colorado River and Upper Colorado River Compacts.

The River Park will be located on the upper Roaring Fork River upstream of Basalt, leaving a significant reach of the Roaring Fork River and the Colorado River for future development of Colorado compact entitlements. Because Pitkin County's RICD water rights are located almost 200 river miles from the State line, with sizable intervening agricultural and industrial uses, water may be beneficially used for consumptive purposes before the water leaves the State. See James F. Pearce, *Report in Support of Pitkin County River Park*, p. 17. As non-consumptive water rights in the upper reach of the river basin, Pitkin County's RICD water rights will not impact downstream consumptive uses that seek to utilize Colorado's compact entitlements. As discussed in greater detail below under Factor 3, unappropriated water will continue to be available for development in the Roaring Fork River basin, including upstream of the River Park, after development of the RICD water rights.

Due to the location of Pitkin County's RICD water rights and the availability of unappropriated water in the upper Roaring Fork River basin, it is the position of Pitkin County's expert that its RICD water rights will not materially impair development of Colorado compact

entitlements. Therefore, Pitkin County requests that the CWCB Board find that Pitkin County's RICD water rights will not materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements.

Factor 2: Whether exercise of the recreational in-channel diversion would cause material injury to instream flow water rights.

The second factor under C.R.S. § 37-92-102(6) addresses whether Pitkin County's RICD water rights will cause material injury to instream flow water rights appropriated by the CWCB. One existing instream flow water right overlaps the RICD reach:

Stream	Amount	Priority Date	Case No.
Roaring Fork River	30 cfs (10/1 – 3/31) 55 cfs (4/1 – 9/30)	Nov. 8, 1985	85CW646

Additional instream flow water rights exist upstream of the River Park on the Roaring Fork River and its tributaries. These instream flow water rights will be protected from injury by the RICD water rights as a result of the priority system, limits on the RICD water rights' ability to call, and the non-consumptive nature of the water rights.

As with all water rights, the instream flow rights and the RICD water rights operate within the priority system. The CWCB's existing instream flow water rights will be senior to Pitkin County's RICD water rights, which will have a 2010 priority date. Consequently, the instream flow rights must be satisfied before the RICD water rights can be exercised. The call restrictions of C.R.S. § 37-92-305(13)(f) will also ensure that the existing instream flow right within the RICD reach is satisfied before the RICD water rights can be exercised. The lowest RICD flow rate claimed is 240 cfs, associated with the Upper Structure Unit. Because of the restrictions of C.R.S. § 37-92-305(13)(f), Pitkin County can only place a call for this water right if the call would result in at least 85% of that flow rate at the Upper Structure Unit, or 204 cfs, which is significantly greater than the 55 cfs minimum instream flow water right. Therefore, whenever adequate flows exist to permit the RICD water rights to affect river administration, the minimum instream flow will be satisfied by a significant margin.

Furthermore, the RICD water rights will not affect the development of future instream flow rights upstream of the River Park. Because they are non-consumptive, upstream instream flow rights should not be curtailed to deliver additional water to the RICD water rights. Upstream instream flow rights and the RICD water rights can operate simultaneously, allowing for the development of additional instream flow rights upstream of the River Park.

For the foregoing reasons, Pitkin County requests that the CWCB Board find that the RICD water rights will not cause material injury to the CWCB's appropriated instream flow water rights.

Factor 3: Whether adjudication and administration of the recreational in-channel diversion would promote maximum utilization of the waters of the state.

The maximum utilization doctrine is intended to make water available for as many decreed uses as available supply allows. *Pagosa Area Water and Sanitation District v. Trout Unlimited*, 170 P.3d 307, 313 (Colo. 2007) (citing C.R.S. § 37-92-102(1)(a)). In evaluating this factor, the CWCB Rules instruct the Board to consider whether the claimed RICD is structured to achieve a reasonable recreational experience while minimizing negative impacts to other water rights.

Pitkin County has designed the River Park to provide recreational experiences that are consistent with and reasonable for the nature of the upper Roaring Fork River basin. Whitewater recreation has been, and continues to be, an important recreational, community, and economic priority in Colorado's mountain communities, including Pitkin County. Commercial whitewater rafting, only one of many activities at whitewater parks, generated a positive economic impact of more than \$150 million across Colorado in 2010. **Exhibit A**, Colorado River Outfitters Association, *Commercial River Use in the State of Colorado, 1988-2010*, p. 5. With only 0.5% of the market share, the upper Roaring Fork River basin saw an economic impact of approximately \$700,000. **Exhibit A**, p. 7, 9. The River Park presents an opportunity for Pitkin County to increase the upper Roaring Fork River basin's market share, thereby increasing the economic benefit to local communities from whitewater activities and participants. Ensuring consistent water supply through the RICD water rights is a critical component of developing the River Park.

While providing economic benefits to local communities through the River Park, Pitkin County will not unnecessarily impact other water users. The priority date and non-consumptive nature of the RICD water rights will protect the majority of other water rights from negative impacts. Water rights senior to the RICD water rights' 2010 priority date, including conditional water rights, will not be affected by the RICD water rights. Only upstream water rights junior to a 2010 priority date may be subject to a call from the RICD water rights. No downstream water rights can be called out by the RICD water rights. In sum, only a limited number of water rights could potentially be impacted by the RICD water rights.

Water users may have additional opportunities to obtain water without impact from the RICD water rights by virtue of municipal suppliers. Municipal water suppliers upstream of the River Park, such as the City of Aspen, Starwood Metropolitan District, the Basalt Water Conservancy District, and the Town of Snowmass Village, rely on senior water rights and exchanges on the Roaring Fork River to replace out-of-priority depletions. These entities have senior water rights and exchanges utilizing Ruedi Reservoir to serve their respective service areas that have not been fully developed. As a result, junior water rights may be developed upstream of the River Park without impact from the RICD water rights, if the depletions from those junior water rights are replaced through an exchange senior to the RICD.

To further protect junior water rights, the General Assembly has enacted additional limitations on RICD water rights. Section 37-92-305(13)(f), C.R.S., places significant

restrictions on Pitkin County's ability to call for the RICD water rights,³ by requiring that the decree:

- I. Specify that the state engineer shall not administer a call for the recreational in-channel diversion unless the call would result in at least eighty-five percent of the decreed flow rate for the applicable time period;
- II. Limit the RICD to three time periods; and
- III. Specify that each time period is limited to one flow rate.

Pitkin County has adopted each of these restrictions in its draft proposed decree.

The effect of the 85% call limitation in C.R.S. § 37-92-305(13)(f)(I) is to create "call bands" for each flow rate and time period; the upper limit of the call band is the claimed flow rate, and the lower limit of the call band is 85% of the claimed flow rate. A graphical representation of the call bands for Pitkin County's RICD water rights in comparison to the historical hydrograph is shown in **Exhibits B-1** and **B-2**. If a potential call for one of the RICD water rights would not result in a flow rate within the call band at the location of the calling RICD water right, then the call will not be honored by the Division Engineer. As a result of these restrictions, the potential for the RICD water rights to call out water rights junior to the 2010 priority date is greatly reduced.

James Pearce's *Supplemental Report for Pitkin County RICD* analyzes the extent of the RICD water rights' ability to call out junior upstream water rights. Mr. Pearce overlaid the call bands associated with each RICD water right on the historical hydrology for each day of the RICD season during a 30-year study period (1980-2010), as shown on **Exhibits B-1** and **B-2**. The analysis shows that, had the two RICD water rights existed during the last 30 years, they could have called on average for 24 days over the course of the 168-day RICD season, thereby calling on only 14% of the RICD season days. In other words, on 86% of the days during the RICD season, historical natural stream flows have been either above or below the RICD call bands. Using this historical data to infer future conditions, the RICD water rights would not impact junior upstream water rights on 86% of days of the RICD season, on average.

To further limit the impact of the RICD water rights, Pitkin County has agreed to a daylight-only call (see draft decree at paragraph 27.C.), meaning that upstream junior water rights, if otherwise in priority, will be able to divert at times when such diversions will not deplete the RICD water rights during daylight hours. In addition, the RICD water rights will not impact in any way upstream junior water rights during the non-RICD season, which extends for 6-½ months from September 16 through March 31.

³ These restrictions apply when the volume of water claimed under a RICD water right exceeds fifty percent of the river flow volume historically at that location during the claimed time period. A more detailed look of the application of these restrictions to Pitkin County's claims can be found in Mr. Pearce's *Supplemental Report for Pitkin County RICD* at pp 2-5.

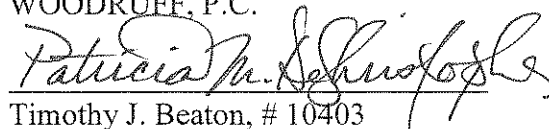
The River Park presents an opportunity to develop Pitkin County's recreation-based economy by ensuring consistent stream flows with RICD water rights. Other water rights will be protected through the priority system and call restrictions on the RICD water rights. Upstream junior water rights will be able to divert during the majority of the RICD season (average of 86% of days) and will be further protected through restrictions in the proposed decree. Senior and downstream water rights will see no impacts from the RICD water rights. The value of the RICD water rights to the local community greatly outweighs these minimal effects. For these reasons, Pitkin County requests that the CWCB Board find that the RICD water rights will promote maximum utilization of the waters of the state.

CONCLUSION

In summary, Pitkin County has designed the River Park and associated RICD water rights to protect recreational experiences that complement the nature of the upper Roaring Fork River basin. The RICD water rights claimed by Pitkin County have been carefully developed to minimize impacts to other water rights while allowing for sufficient water to maintain the intended recreational experiences of the River Park within the confines of existing statutory restrictions. For the reasons detailed above, Pitkin County requests that the CWCB Board make favorable written findings of fact for the RICD water rights.

Respectfully submitted this 27th day of June, 2011.

MOSES, WITTEMYER, HARRISON AND
WOODRUFF, P.C.



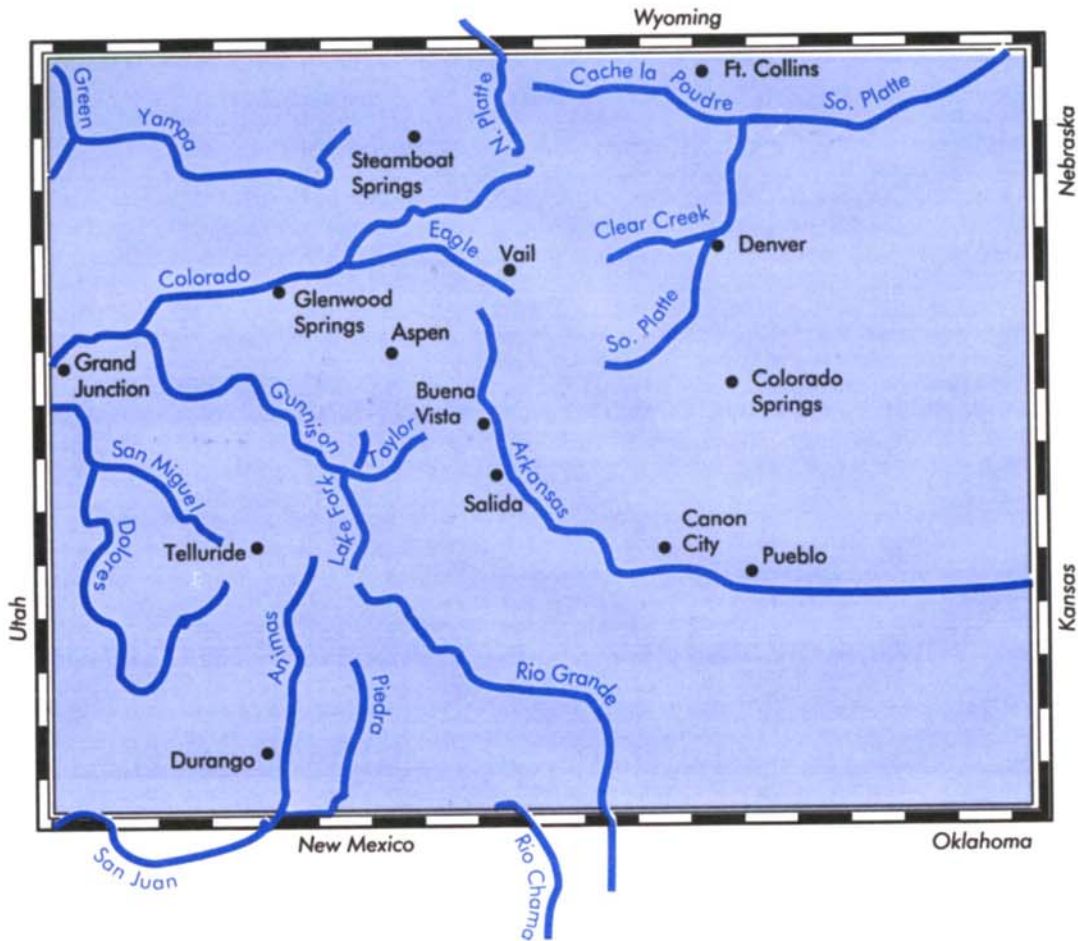
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Attorney for Applicant, Board of County
Commissioners of Pitkin County, Colorado

EXHIBIT A



Commercial River Use in the State of **COLORADO**

1988-2010

Colorado
River Outfitters Association
(CROA)

EXECUTIVE SUMMARY

COMMERCIAL RIVER USE IN COLORADO

2010 Year End Report

From 2009 to 2010, river use in the State of Colorado climbed 16,500 user days or 3.4% to 507,000 user days. Use in this mature industry has fluctuated between 460,000 and 540,000 since 1997. Total use in Colorado is down 7% from the peak of 544,000 user days in 2007.

This increase is another small sign of improvement in the overall economy as rafting guests seem to be partially motivated by success in their stock market portfolios. Discounting and “Deals” were also ubiquitous in the industry, creating a demand by the budget traveler.

The Colorado and Arkansas Rivers saw the biggest increases. These two rivers contribute not only the largest percentage of use in the state, but are also rivers that have excess capacity for increased use. Many other rivers in the state have limits to increased use and therefore river use has stabilized.

Increased use combined with an inflation rate of 1.5% in the United States in 2010 increased the economic impact of commercial rafting by 4.9% or \$7 million dollars to a total of \$150 million. This amount has only been surpassed once which was in 2007. The economic impact in 2010 has nearly doubled from a dip in 2002 when use plunged due to drought and massive wildfires on the heels of 9/11.

The outlook for 2011 is bright as consumer spending increases and excellent snowpack across the state portends adequate flows in the rivers when the snowmelt begins this spring.

The Colorado River Outfitters Association (CROA) compiled this study. Copies are available by contacting Joe Greiner at rapids@inaraft.com. It can also be downloaded from the web at <http://croa.org/site/media.html>. Members of CROA adhere to a Code of Ethics and offer quality trips on all of Colorado's rivers.

COMMERCIAL USER DAYS IN THE STATE OF COLORADO 1988 - 2010

River	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Animas	12,000	13,000	10,000	18,000	22,000	26,000	28,600	30,200	23,000	37,000	36,000	45,000	29,000
Animas - Upper	510	510	690	730	810	887	369	368	0	400	920	989	700
Arkansas	109,883	119,045	157,380	157,862	181,716	185,123	201,040	199,109	228,153	235,931	250,098	243,709	250,861
Blue	2,138	1,400	1,928	2,288	2,173	4,129	416	9,338	5,854	5,361	1,300	2,100	2,347
Clear Creek		600	650	800	900	3,700	4,400	5,900	7,543	11,889	12,908	16,887	13,616
Colorado - Glenwood	15,000	21,300	26,938	32,435	39,149	31,256	46,579	26,150	32,764	43,146	59,822	60,191	57,265
Colorado - Upper	21,500	21,000	26,593	33,032	30,877	33,571	34,405	31,020	36,757	36,758	40,309	40,000	42,933
Colorado - Horsethief/Ruby	2,540	2,660	3,560	3,870	5,013	4,954	4,614	5,387	3,654	4,875	4,171	4,410	4,508
Colorado - Westwater	7,041	6,468	6,351	6,841	7,473	8,780	9,456	8,108	7,977	6,614	7,452	7,208	6,859
Dolores	1,595	1,111	10	968	1,258	1,707	1,493	3,257	0	2,333	2,406	439	921
Eagle - Upper	1,956	2,246	5,466	7,055	5,935	10,285	6,482	18,735	11,906	11,738	6,361	7,290	3,830
Eagle - Lower		1,108	1,642	2,182	949	952	700	2,862	2,038	2,825	2,226	2,500	2,167
Green/Yampa	14,885	15,204	16,836	17,700	19,313	20,513	19,870	22,936	20,097	20,408	22,454	19,818	22,569
Gunnison Gorge	1,942	3,056	2,760	3,618	2,921	3,304	3,996	1,804	3,377	3,289	3,155	3,169	3,928
Gunnison - Upper	957	1,038	835	2,201	1,808	1,946	1,485	1,123	1,365	1,774	1,420	1,720	1,400
Gunnison - Escalante		24	115	241	286	213	179	275	2,083	2,340	899	1,011	1,884
Gunnison - Lake Fork	293	394	178	426	292	276	446	1,476	1,081	1,850	1,315	1,848	1,310
North Platte	1,289	297	481	620	97	864	157	1,277	1,351	1,232	804	882	165
Piedra		14	71	55	35	37	67	76	17	31	294	305	50
Poudre	7,148	8,581	11,779	14,345	19,355	21,415	24,949	30,845	33,235	31,981	32,721	32,446	29,012
Rio Grande	2,800	2,800	2,800	2,800	2,800	2,800	2,000	2,900	2,800	3,000	2,800	3,100	1,950
Roaring Fork - Upper	1,500	1,500	1,500	1,500	1,500	1,500	2,000	4,000	4,500	5,074	4,500	5,000	4,500
Roaring Fork - Lower	3,000	3,000	1,500	1,500	1,500	2,000	2,500	5,000	1,100	1,200	1,500	2,000	1,500
San Juan - Pagosa	300	400	600	800	800	800	1,400	1,600	1,200	2,680	3,460	3,400	2,200
San Miguel	50	60	125	365	1,518	2,181	1,642	3,321	1,157	2,000	2,500	3,442	1,379
South Platte				5,000	5,000	700	101	816	1,112	3,137	3,650	1,306	2,035
Taylor		5,843	5,683	9,008	8,400	11,910	12,877	12,859	15,655	13,612	15,367	15,367	13,989
Total User Days	208,327	232,659	286,471	326,242	363,878	381,803	412,223	430,742	449,776	492,478	520,812	525,537	502,878
% Change From Previous Year		11.7%	23.1%	13.9%	11.5%	4.9%	8.0%	4.5%	4.4%	9.5%	5.8%	0.9%	-4.3%
User Day Change From Previous Year		24,332	53,812	39,771	37,636	17,925	30,420	18,519	19,034	42,702	28,334	4,725	-22,659

Sources: National Park Service
US Forest Service
Bureau of Land Management
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Colorado State Parks

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COMMERCIAL USER DAYS IN THE STATE OF COLORADO 1988 - 2010

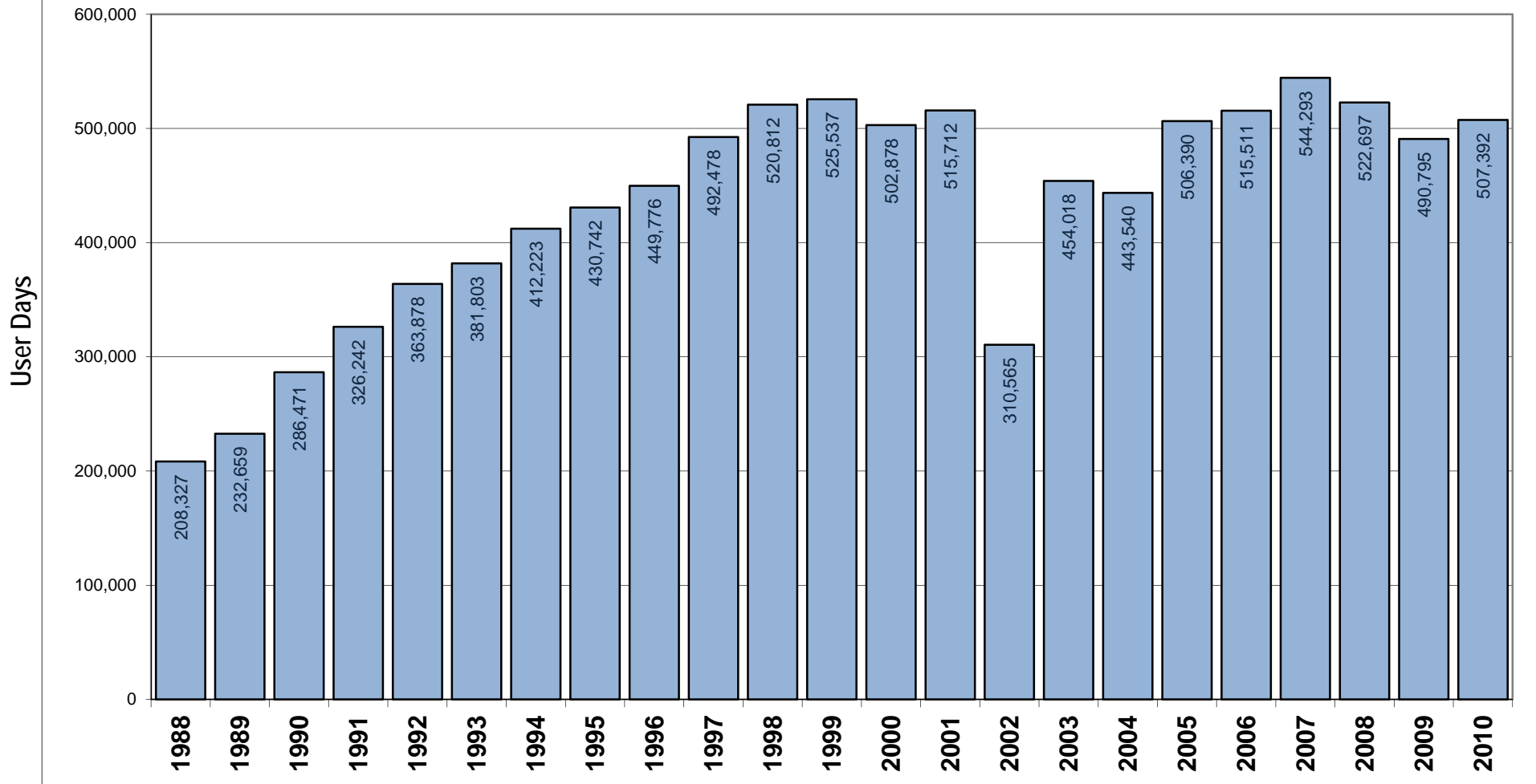
River	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Animas	42,000	12,000	34,500	35,470	52,700	42,500	44,322	42,250	41,921	41,000
Animas - Upper	721	300	690	658	872	167	598	533	500	411
Arkansas	252,213	139,178	214,555	203,840	228,091	237,160	239,887	214,234	205,876	211,150
Blue	14	0	264	788	1,212	760	2,038	2,906	3,089	1,181
Clear Creek	20,798	7,498	24,495	20,115	32,357	36,889	49,190	52,340	49,626	51,301
Colorado - Glenwood	55,829	42,581	56,876	58,751	57,712	62,652	65,502	52,738	52,737	61,673
Colorado - Upper	34,381	37,801	32,188	33,224	29,449	36,280	37,068	34,769	33,077	41,504
Colorado - Horsethief/Ruby	4,188	2,324	3,222	3,383	3,318	2,810	2,761	3,283	3,090	2,667
Colorado - Westwater	6,858	6,626	7,352	7,548	7,043	7,233	7,632	7,624	6,833	7,621
Dolores	0	0	214	174	936	81	195	868	536	112
Eagle (Below Edwards)	3,702	0	1,239	858	3,630	4,621	4,390	4,390	1,374	1,095
Eagle - Upper (Dowd Chutes)	594	446	1,153	820	1,419	1,441	1,369	1,369	1,369	1,710
Green/Yampa	21,147	18,158	13,379	12,919	13,435	12,961	15,242	21,325	12,194	14,741
Gunnison Gorge	3,401	3,292	2,328	3,010	3,016	3,800	2,826	4,342	3,956	1,390
Gunnison - Upper	2,690	1,334	1,590	1,982	2,112	2,212	2,500	2,669	2,669	2,669
Gunnison - Escalante	1,887	1,044	2,113	2,988	3,363	2,265	3,272	2,106	2,549	2,794
Gunnison - Lake Fork	1,543	0	160	177	195	165	126	369	203	149
North Platte	137	0	312	191	566	511	372	851	712	482
Piedra	650	0	210	454	725	400	500	547	547	190
Poudre	34,192	26,004	34,164	31,042	36,088	34,533	37,824	37,566	36,991	37,392
Rio Grande	3,300	92	1,300	2,800	3,060	2,900	3,100	3,200	2,464	2,016
Roaring Fork - Upper	2,500	0	2,000	1,500	2,215	2,609	2,834	6,187	4,248	2,404
Roaring Fork - Lower	1,000	0	500	500	10	79	100	2,500	1,263	1,363
San Juan - Pagosa	2,000	138	1,586	2,550	2,500	1,900	1,900	2,280	4,107	3,900
San Miguel	3,625	120	1,959	2,212	4,493	2,800	2,943	5,969	3,782	1,762
South Platte	2,055	453	935	836	901	655	690	1,150	750	383
Taylor	14,287	11,176	14,734	14,750	14,972	15,127	15,112	14,332	14,332	14,332
Total User Days	515,712	310,565	454,018	443,540	506,390	515,511	544,293	522,697	490,795	507,392
% Change From Previous Year	2.6%	-39.8%	46.2%	-2.3%	14.2%	1.8%	5.6%	-4.0%	-6.1%	3.4%
User Day Change From Previous Year	12,834	-205,147	143,453	-10,478	62,850	9,121	28,782	-21,596	-31,902	16,597

Sources: National Park Service
US Forest Service
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COMMERCIAL USER DAYS IN COLORADO 1988-2010



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ECONOMIC IMPACT OF COMMERCIAL RIVER RAFTING IN COLORADO

YEAR	TOTAL USER DAYS	INFLATION RATE (CPI)	EXPENDITURES- INFLATION ADJUSTED	DIRECT EXPENDETURES	ECONOMIC IMPACT	% CHANGE
1988	208,327		\$63.80	\$14,166,236	\$36,265,564	
1989	232,659	4.6%	\$66.73	\$15,526,325	\$39,747,392	9.6%
1990	286,471	6.1%	\$70.81	\$20,283,592	\$51,925,995	30.6%
1991	326,242	3.1%	\$73.00	\$23,815,666	\$60,968,105	17.4%
1992	363,878	2.9%	\$75.12	\$27,333,424	\$69,973,565	14.8%
1993	381,803	2.7%	\$77.15	\$29,454,253	\$75,402,888	7.8%
1994	412,223	2.7%	\$79.23	\$32,659,636	\$83,608,668	10.9%
1995	430,742	2.5%	\$81.21	\$34,980,032	\$89,548,883	7.1%
1996	449,776	3.3%	\$83.89	\$37,731,110	\$96,591,643	7.9%
1997	492,478	1.7%	\$85.31	\$42,015,651	\$107,560,066	11.4%
1998	520,812	1.7%	\$86.77	\$45,188,320	\$115,682,100	7.6%
1999	525,537	2.7%	\$89.11	\$46,829,439	\$119,883,364	3.6%
2000	502,878	3.4%	\$92.14	\$46,333,898	\$118,614,778	-1.1%
2001	515,712	1.9%	\$93.89	\$48,419,201	\$123,953,154	4.5%
2002	310,565	2.2%	\$95.95	\$29,799,830	\$76,287,565	-38.5%
2003	454,018	1.9%	\$97.78	\$44,392,391	\$113,644,520	49.0%
2004	443,540	3.3%	\$101.00	\$44,799,026	\$114,685,507	0.9%
2005	506,390	3.4%	\$104.44	\$52,886,088	\$135,388,385	18.1%
2006	515,511	2.0%	\$106.53	\$54,915,435	\$140,583,514	3.8%
2007	544,293	4.1%	\$110.89	\$60,358,713	\$154,518,305	9.9%
2008	522,697	0.1%	\$111.00	\$58,021,815	\$148,535,846	-3.9%
2009	490,795	2.7%	\$114.00	\$55,951,518	\$143,235,886	-3.6%
2010	507,392	1.5%	\$115.71	\$58,711,260	\$150,300,826	4.9%

% Change from 1988 - 1993 = 51.9%

% Change from 1994 - 1999 = 30.3%

% Change from 2000 - 2005 = 12.4%

% Change from 2006 - 2010 = 6.5%

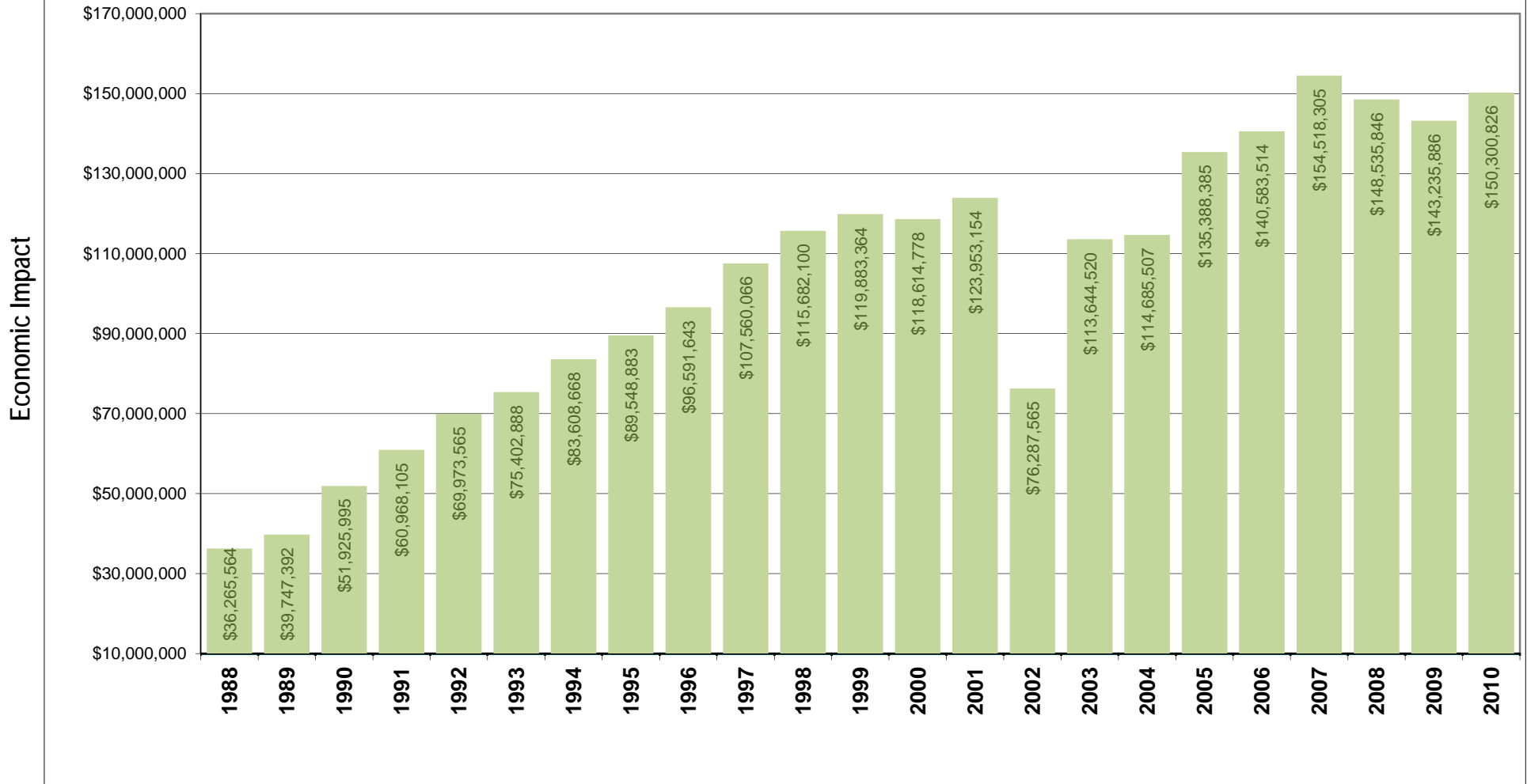
See glossary for above economic impact formulas and sources

Sources: National Park Service
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ECONOMIC IMPACT OF COMMERCIAL RIVER RAFTING IN COLORADO 1988-2010



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2010 ECONOMIC IMPACT BY RIVER

RIVER	USER DAYS	DIRECT EXPENDITURES	ECONOMIC IMPACT
Animas	41,000	\$4,744,185	\$12,145,114
Animas - Upper	411	\$47,558	\$121,747
Arkansas	211,150	\$24,432,554	\$62,547,339
Blue	1181	\$136,656	\$349,839
Clear Creek	51,301	\$5,936,133	\$15,196,500
Colorado - Glenwood	61673	\$7,136,296	\$18,268,918
Colorado - Upper	41,504	\$4,802,504	\$12,294,410
Colorado - Horsethief/Ruby	2667	\$308,603	\$790,025
Colorado - Westwater	7,621	\$881,840	\$2,257,510
Dolores	112	\$12,960	\$33,177
Eagle - Upper	1,095	\$126,704	\$324,363
Eagle - Lower	1710	\$197,867	\$506,540
Green/Yampa	14,741	\$1,705,708	\$4,366,613
Gunnison Gorge	1390	\$160,839	\$411,749
Gunnison - Upper	2,669	\$308,835	\$790,617
Gunnison - Escalante	2794	\$323,299	\$827,645
Gunnison - Lake Fork	149	\$17,241	\$44,137
North Platte	482	\$55,773	\$142,779
Piedra	190	\$21,985	\$56,282
Poudre	37392	\$4,326,697	\$11,076,344
Rio Grande	2,016	\$233,275	\$597,184
Roaring Fork - Upper	2404	\$278,171	\$712,118
Roaring Fork - Lower	1,363	\$157,715	\$403,751
San Juan - Pagosa	3900	\$451,276	\$1,155,267
San Miguel	1,762	\$203,884	\$521,944
South Platte	383	\$44,318	\$113,453
Taylor	14,332	\$1,658,382	\$4,245,458
Totals	507,392	\$58,711,260	\$150,300,826

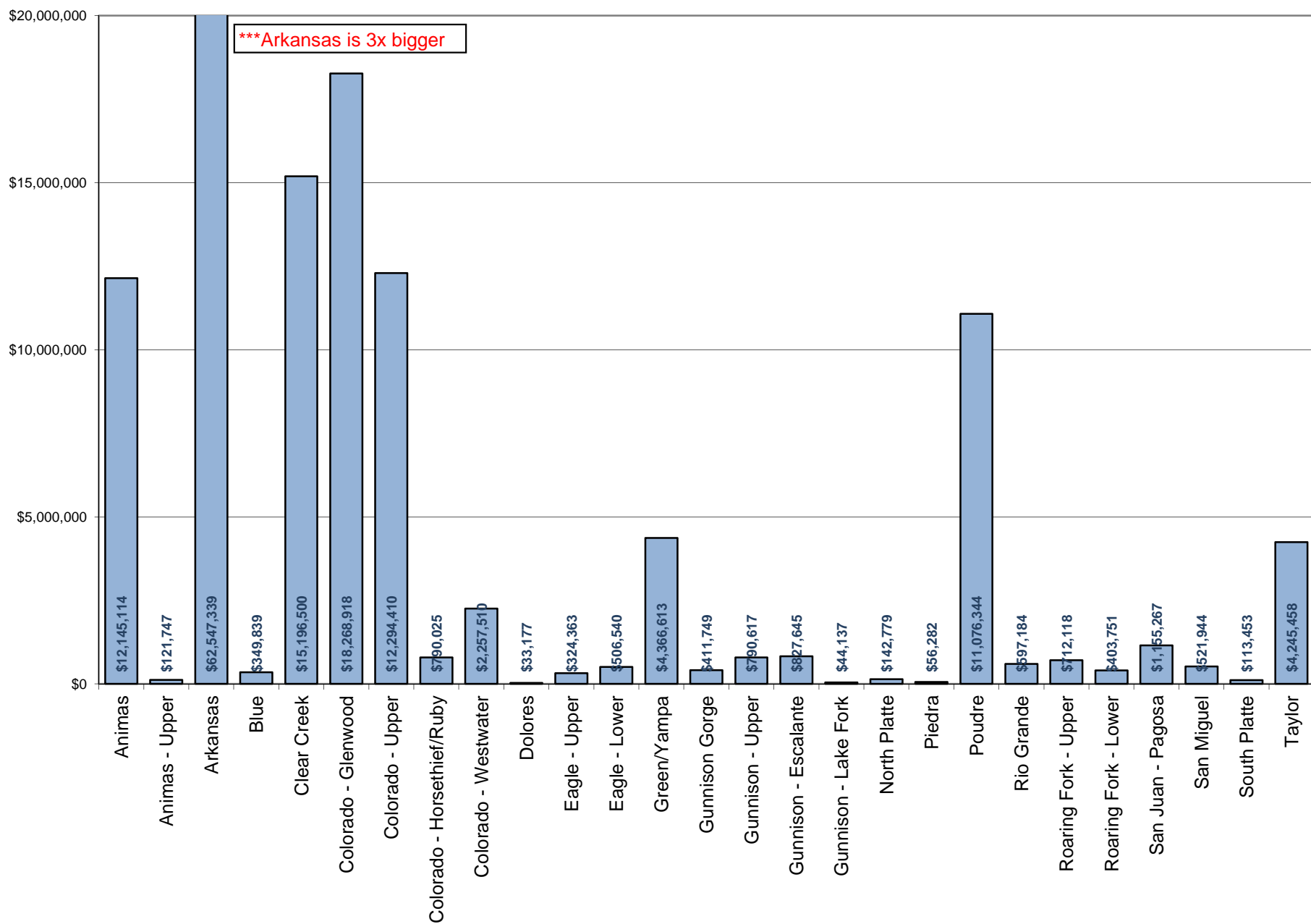
See glossary for above economic impact formulas and sources

Sources: National Park Service
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ECONOMIC IMPACT OF COMMERCIAL RIVER RAFTING IN COLORADO - 2010



INDIVIDUAL RIVER COMMERCIAL RAFTING STATISTICS - 3 YR RANGE

RIVER	2008 USER DAYS	2009 USER DAYS	2010 USER DAYS	% CHANGE '08 - '09	% CHANGE '09 - 10	2008 % MARKET SHARE	2009 % MARKET SHARE	2010 % MARKET SHARE
Animas	42,250	41,921	41,000	-0.8%	-2.2%	8.1%	8.5%	8.1%
Animas - Upper	533	500	411	-6.2%	-17.8%	0.1%	0.1%	0.1%
Arkansas	214,234	205,876	211,150	-3.9%	2.6%	41.0%	41.9%	41.6%
Blue	2,906	3,089	1,181	6.3%	-61.8%	0.6%	0.6%	0.2%
Clear Creek	52,340	49,626	51,301	-5.2%	3.4%	10.0%	10.1%	10.1%
Colorado - Glenwood	52,738	52,737	61,673	0.0%	16.9%	10.1%	10.7%	12.2%
Colorado - Upper	34,769	33,077	41,504	-4.9%	25.5%	6.7%	6.7%	8.2%
Colorado - Horsethief/Ruby	3,283	3,090	2,667	-5.9%	-13.7%	0.6%	0.6%	0.5%
Colorado - Westwater	7,624	6,833	7,621	-10.4%	11.5%	1.5%	1.4%	1.5%
Dolores	868	536	112	-38.2%	-79.1%	0.2%	0.1%	0.0%
Eagle - Upper	4,390	1,374	1,095	-68.7%	-20.3%	0.8%	0.3%	0.2%
Eagle - Lower	1,369	1,369	1,710	0.0%	24.9%	0.3%	0.3%	0.3%
Green/Yampa	21,325	12,194	14,741	-42.8%	20.9%	4.1%	2.5%	2.9%
Gunnison Gorge	4,342	3,956	1,390	-8.9%	-64.9%	0.8%	0.8%	0.3%
Gunnison - Upper	2,669	2,669	2,669	0.0%	0.0%	0.5%	0.5%	0.5%
Gunnison - Escalante	2,106	2,549	2,794	21.0%	9.6%	0.4%	0.5%	0.6%
Gunnison - Lake Fork	369	203	149	-45.0%	-26.6%	0.1%	0.0%	0.0%
North Platte	851	712	482	-16.3%	-32.3%	0.2%	0.1%	0.1%
Piedra	547	547	190	0.0%	-65.3%	0.1%	0.1%	0.0%
Poudre	37,566	36,991	37,392	-1.5%	1.1%	7.2%	7.5%	7.4%
Rio Grande	3,200	2,464	2,016	-23.0%	-18.2%	0.6%	0.5%	0.4%
Roaring Fork - Upper	6,187	4,248	2,404	-31.3%	-43.4%	1.2%	0.9%	0.5%
Roaring Fork - Lower	2,500	1,263	1,363	-49.5%	7.9%	0.5%	0.3%	0.3%
San Juan - Pagosa	2,280	4,107	3,900	80.1%	-5.0%	0.4%	0.8%	0.8%
San Miguel	5,969	3,782	1,762	-36.6%	-53.4%	1.1%	0.8%	0.3%
South Platte	1,150	750	383	-34.8%	-48.9%	0.2%	0.2%	0.1%
Taylor	14,332	14,332	14,332	0.0%	0.0%	2.7%	2.9%	2.8%
Totals	522,697	490,795	507,392	-6.1%	3.4%	100.0%	100.0%	100.0%

Sources: National Park Service
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GLOSSARY

User Day: A user day is defined as a paying guest on a river for any part of a day.

Direct Expenditures: The total cash outlay for rafting, food, lodging, souvenirs, etc. spent in the local area by one river rafting customer in one day. Taken from a survey conducted in 1991 and published in 1993 titled "The Use and User Characteristics, Management Preferences, and Satisfaction of Boaters and Anglers on the Arkansas Headwaters Recreation Area (Colorado)"

Report to the Bureau of Land Management
Canon City District Office
PO Box 2200
Canon City, CO 81215

by:
Joseph W Roggenbuck
William T Borrie
Daniel R Williams
Department of Forestry
Virginia Tech
Blacksburg, VA 24061-0324

Economic Multiplier: The number of times a dollar is spent (2.56 times) in the local area before being spent outside that area. Colorado Tourism Board.

Inflation Rate (CPI): Consumer Price Index for all items, all urban consumers. Customary source for measuring the inflation rate nationwide.

<http://www.bls.gov/news.release/cpi.nr0.htm>

Economic Impact: Direct Expenditures x User Days x Economic Multiplier

2010 CROA Membership

Name	Address	City	State	Zip	Contact Person	Phone	EmailAddress
A Wanderlust Adventures	3500 Bingham Hill Rd	Ft Collins	CO	80521	Bob Klein	(970) 484-1995	info@awanderlustadventure.com
Adventure Bound River Expeditions	2392 H Road	Grand Junction	CO	81505	Tom Kleinschnitz	(970) 245-5428	info@AdventureBoundUSA.com
All American Adventures	PO Box 1176	Idaho Springs	CO	80452	Jed Ward	(720) 259-7238	jed@raftdenver.com
American Adventure Expeditions	12844 E Hwy 24/285	Buena Vista	CO	81211	Michael Kissack	(719) 395-2409	mikekissack@americanadventure.com
Arkansas River Tours	PO Box 337	Cotopaxi	CO	81223	Bob Hamel	(719) 942-4362	bob@arkansasrivertours.com
Arkansas Valley Adventures	PO Box 4310	Buena Vista	CO	81211	Duke Bradford	(719) 486-2827	duke@coloradorafting.net
Aspen Whitewater Rafting	PO Box 11763	Aspen	CO	81611	James Ingram	(970) 920-3511	jim@aspenwhitewater.com
Blazing Adventures	PO Box 5068	Snowmass Village	Co	81615	Bob Harris	(970) 923-4544	bob@blazingadventures.com
Bucking Rainbow Outfitters	PO Box 774832	Steamboat Sprgs	CO	80477	John Duty III	(970) 879-8747	john@buckingrainbow.com
Buffalo Joe's Whitewater Rafting	PO Box 1526	Buena Vista	CO	81211	Jahvee & Coby Vidakovich	(719) 395-8757	coby@buffalojoe.com
Clear Creek Rafting Company	PO Box 3178	Idaho Springs	CO	80452	John Rice	(303) 567-1000	john@clearcreekrafting.com
Colorado Discover Ability	PO Box 1924	Grand Junction	CO	81502	Martin Wiesiolek	(970) 257-1222	rafting@coloradodiscoverability.com
Colorado River & Trail Expeditions	5058 S. 300 West	Salt Lake City	UT	84107	Vicki Mackay	(801) 261-1789	crate@crateinc.com
Colorado River Guides, Inc	PO Box 391	Yampa	CO	80483	Paul or Brenda Worley	(970) 638-9742	wetraft@raftcolorado.com
Echo Canyon River Expeditions	45000 US Hwy 50 N	Canon City	CO	81212	Andy Neinas	(719) 275-3154	Andy@raftecho.com
Gateway Canyons	2454 Patterson Road, Ste 200	Grand Junction	CO	81505	Luke Reece	(970) 245-6292	lreece@gtwycanyons.com
Geo Tours Whitewater Raft Trips	PO Box 483	Morrison	CO	80465	Bruce Becker	(303) 756-6070	bruce@georrafting.com
Glenwood Canyon Rafting, Inc	PO Box 1566	Glenwood Springs	CO	81601	Gary Hansen	(970) 384-0445	goraft@raftingglenwoodsprings.com
Gunnison Fish & Raft	PO Box 7122	Gunnison	CO	81230	Albert Mismash	(970) 641-9420	albert@floatfish.com
Gunnison River Expeditions	14494 F Road	Delta	CO	81416	Alan DeGrange	(970) 874-8184	gre@sopris.net
Highside Adventure Tours, Inc.	183 Meadow Dr.	Dillon	CO	80438	John Cantamessa	(970) 668-1228	info@raftingcolorado.com
Independent Whitewater	333 Maxwell St	Salida	CO	81201	Scott Ledwith	(719) 539-7737	twodogs@salida.net
KODI Rafting	PO Box 4275	Frisco	CO	80443	Christian "Campy" Campton	(970) 668-1548	info@whitewatercolorado.com
Kokopelli Rafting Adventures	10829 CRE 165	Salida	CO	81201	John Seiner	(719) 539-3729	info@kokopellirafting.com
Liquid Descent	1700 Westbridge	Fort Collins	CO	80526	Alan Blado	(970) 372-2870	alan@liquiddescent.com
Mild to Wild Rafting (AAM's)	53 Rio Vista Circle	Durango	CO	81301	Alex & Molly Mickel	(970) 247-4789	info@mild2wildrafting.com
Mile Hi Rafting, LLC	PO Box 1744	Idaho Springs	CO	80452	Suzen Raymond	(303) 567-0717	info@milehirafting.com
Mountain Man Tours, Inc.	408 Starlight Circle	Creede	CO	81130	Delen Coln	(719) 658-2663	mntman@amigo.net
Mountain Waters Rafting	PO Box 2681	Durango	CO	81302	Casey Lynch	(970) 259-4191	Casey@durangorafting.com
Noah's Ark Whitewater Rafting Co.	PO Box 850	Buena Vista	CO	81211	Micah Salazar	(719) 395-2158	micah@noahsark.com
Nova Guides	PO Box 2018	Vail	CO	81658	Greg Caretto	(719) 486-2656	greg@novaguides.com
OARS Canyonlands	PO Box 12	Angels Camp	CA	95222	Lannie Yeager	(435) 789-4316	info@donhatchrivertrips.com
Paddle Colorado	PO Box 19606	Boulder	CO	80308	Don Badtram	(720) 771-0022	
Pagosa Rafting Outfitter Inc. / Wilderness Journey	PO Box 222	Pagosa Springs	CO	81147	Wayne Walls	(970) 731-4081	walls@pagosa.net
Performance Tours Rafting	115 Gregg Drive	Buena Vista	CO	81211	Kevin Foley	(719) 395-6097	raft@performancetours.com
Raft Masters	2315 E Main St	Canon City	CO	81212	Dennis Weid	(719) 275-6645	fun@raftmasters.com
Raven Adventure Trips, Inc.	2315 E. Main Street	Canon City	CO	81212	Will Colon	(719) 275-2890	info@ravenraft.com
Rimrock Adventures	PO Box 608	Fruita	CO	81521	Travis Baier	(970) 858-9555	info@rradventures.com
River Runners	24070 CR 301	Buena Vista	CO	81211	Jon Donaldson	(719) 395-2466	jon@whitewater.net
Rock Gardens, Inc.	1308 County Road 129	Glenwood Springs	CO	81601	Kevin Schneider	(970) 945-6737	kevin@rockgardens.com
Rocky Mountain Adventures, Inc.	PO Box 1989	Fort Collins	CO	80522	David Costlow	(970) 493-4005	dcostlow@shoprma.com
Royal Gorge Rafting	45045 Hwy 50 W	Canon City	CO	81212	James Whiteside	(719) 275-7238	info@royalgorgerafting.net
Sage Outdoor Adventures	483 La Plata Peak	Twin Lakes	CO	81251	Darryl Bangert	(719) 476-3700	darrylbangert@msn.com
Scenic River Tours	703 W Tomichi Ave	Gunnison	CO	81230	Ches Russell	(970) 641-3131	info@scenicrivertours.com
Three Rivers Resort & Outfitting	PO Box 339	Almont	CO	81210	Mark Schumaker	(970) 641-1303	email@3riversresort.com
Timberline Tours	PO Box 131	Vail	CO	81658	Greg Kelchner	(970) 328-6161	gkelchner@hotmail.com
Vessels For Honor Rafting	27077 Hwy 50 Ste 4	Texas Creek	CO	81223	Dwight Grant	(719) 276-2227	vfhrafting@earthlink.net
Wilderness Aware Rafting	PO Box 1550	Buena Vista	CO	81211	Joe Greiner	(719) 395-2112	joe@inaraft.com

2010 Report Providers

Name	Address1	City	State	Zip	Contact Person	Phone	EmailAddress
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USFS - Blue River	PO Box 620	Silverthorne	CO	80498	Alex Faught	(970) 468-5400	afaught@fs.fed.us
USFS- Glenwood Canyon	PO Box 720	Eagle	CO	81631	Janie Pardo	(970) 328-6388	jpardo@fs.fed.us
BLM Kremmling	PO Box 68	Kremmling	CO	80459	Andy Windsor	(970) 724-3025	andy_windsor@co.blm.gov
BLM Grand Junction	2815 H Road	Grand Junction	CO	81506	Mike Jones	(970) 244-3044	mike_d_jones@co.blm.gov
BLM Moab	82 E. Dogwood Ste G	Moab	UT	84532	Jennifer Jones	(435) 259-2136	jljones@blm.gov
Dolores Public Lands Office	29211 Hwy 184	Dolores	CO	81323	Tom Kelly	(970) 882-7296	tjkelly@fs.fed.us
BLM Glenwood Field Office	2300 River Frontage Rd	Silt	CO	81652	Greg Wolfgang	(970) 947-2866	gregory_wolfgang@blm.gov
Dinosaur National Monument	4545 Hwy 40	Dinosaur	CO	81610	Ginger Raborn	(970) 374-3020	Virginia_Raborn@nps.gov
BLM Montrose	2505 S. Townsend	Montrose	CO	81401	Edd Franz	(970) 240-5309	edd_franz@blm.gov
BLM Gunnison	216 N. Colorado	Gunnison	CO	81230	Sally Thode	(970) 641-0471	Sally_Thode@blm.gov
USFS - N. Platte	South Hwy 130, PO Box 249	Saratoga	WY	82331	Penny Walters	(307) 326-2532	pmwalters@fs.fed.us
USFS - Ft Collins	2150 Centre Ave Bldg E	Ft. Collins	CO	80526	Jon Halverson	(970) 295-6723	jhalverson@fs.fed.us
Clear Creek Rafting	PO Box 3178	Idaho Springs	CO	80452	John Rice	(303) 567-1000	john@clearcreekrafting.com
Pagosa Rafting Outfitters, Inc.	PO Box 222	Pagosa Springs	CO	81147	Wayne Walls	(970) 731-4081	walls@pagosa.net
Scenic River Tours	703 W Tomichi Ave	Gunnison	CO	81230	Ches Russell	(970) 641-3131	info@scenicrivertours.com
Divide Ranger District	PO Box 270	Creede	CO	81130	Jody Fairchild	(719) 658-2556	jfiarchild@fs.fed.us
Rock Gardens, Inc.	1308 Road 129	Glenwood Springs	CO	81601	Ken Murphy	(970) 945-6737	ken@glenwoodcanyonresort.com
Pitkin County Open Space & Trails	530 E Main St 3rd Floor	Aspen	CO	81611	Fran Soroka	(970) 920-5232	fran.soroka@co.pitkin.co.us
Three Rivers Resort	PO Box 339	Almont	CO	81210	Mark Schumaker	(970) 641-1303	email@3riversresort.com
Mountain Waters Rafting	PO Box 2681	Durango	CO	81302	Casey Lynch	(970) 259-4191	casey@durangorafting.com

EXHIBIT B-1

Figure 5-1: Stream flow Statistics and the Proposed Upper Structure Unit RICDs

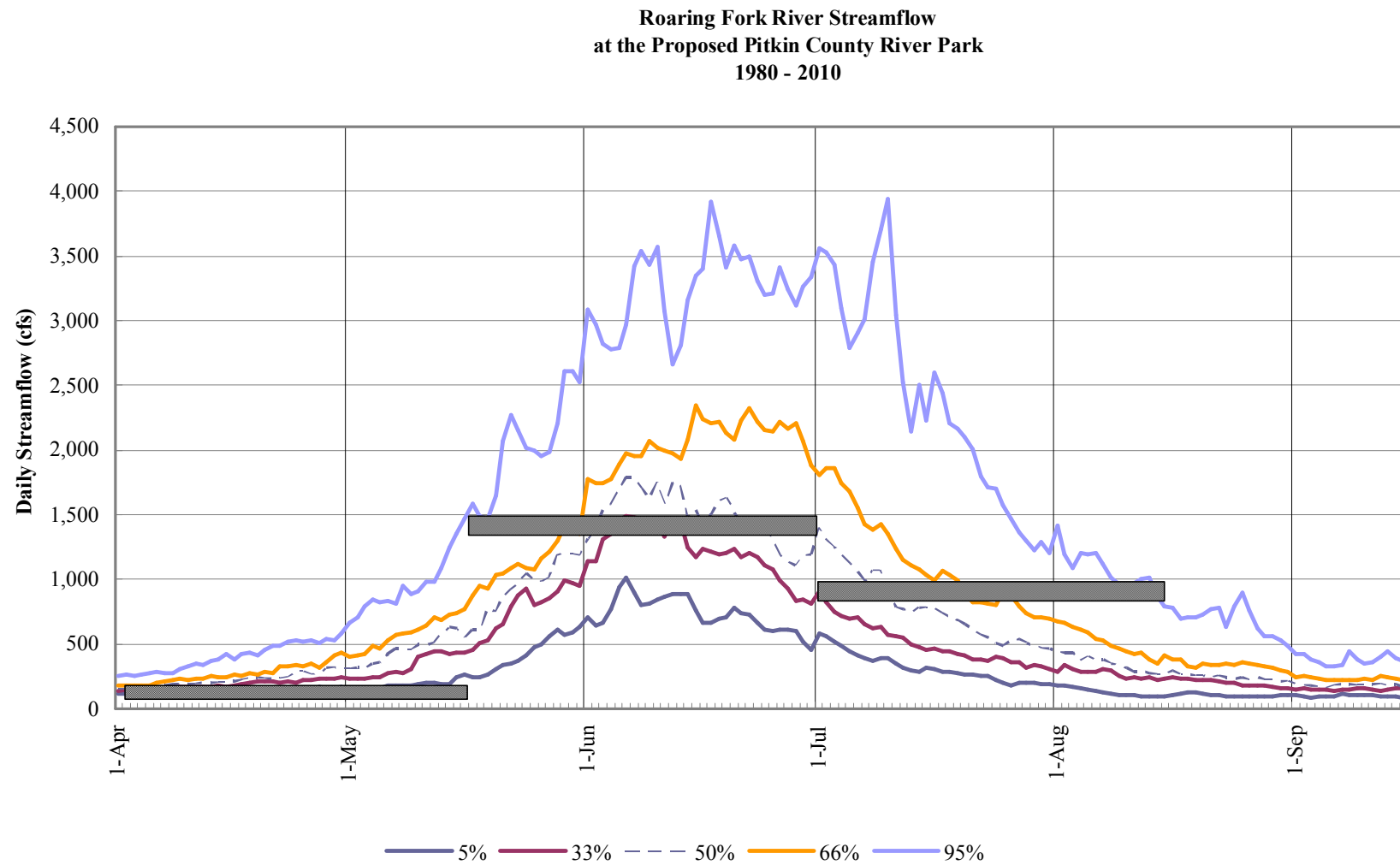
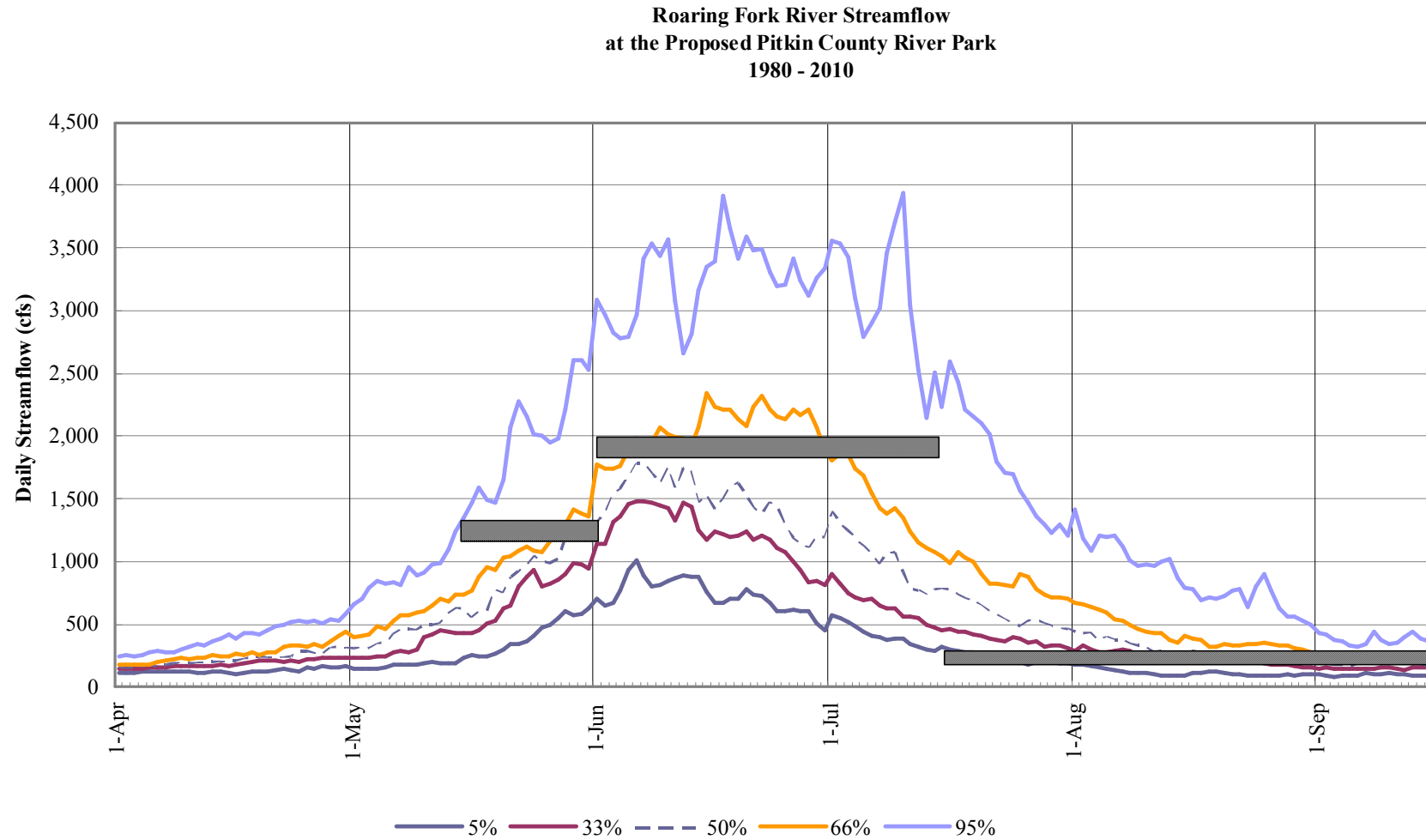


EXHIBIT B-2

Figure 5-2: Stream Flow Statistics and the Lower Structure Unit RICDs





Paul L. Noto*
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reply to Aspen office

*licensed in CO

June 27, 2011

Colorado Water Conservation Board
c/o Susan Schneider, Esq.
Assistant Attorney General
Natural Resources and Environment Section
1525 Sherman Street, 5th Floor
Denver, CO 80203

VIA EMAIL

RE: *Comments of Elk Mountain Lodge, LLC and GRE II, LLP for CWCB
Deliberation of Pitkin County RCID Application, Case No. 10CW305,
Division 5 (our file # 822B and 1027)*

Dear Board:

We understand that the Colorado Water Conservation Board ("CWCB") intends to hold its public deliberation on the application for recreational in-channel diversion water rights ("RICDs") filed by the Board of Commissioners of Pitkin County ("Pitkin County") in Case No. 10CW305, Water Division 5, at its July 12th – 13th Board Meeting. We understand that following the Board Meeting, the CWCB shall consider the following factors and make written findings as to each pursuant to C.R.S. § 37-92-102(6)(b) (2011):

- (I) Whether the adjudication and administration of the RICD will materially impair the ability of Colorado to fully develop and place consumptive beneficial use its compact entitlements;
- (II) Whether exercise of the RICD will cause material injury to instream flow water rights ("ISFs") appropriated pursuant to C.R.S. § 37-92-102(3) – (4); and
- (III) Whether adjudication and administration of the RICD will promote maximum utilization of waters of the state.

We are writing to submit comments on behalf of Elk Mountain Lodge, LLC and GRE II, LLP in support our view that the CWCB should not recommend that the Pitkin County RICDs be adjudicated as proposed for the reasons set forth below.

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(I) Adjudication and administration of Pitkin County’s proposed RICDs will materially impair the ability of Colorado to fully develop and place consumptive beneficial use its compact entitlements.

Under the first factor of C.R.S. § 37-92-102(6)(b), the CWCB should consider “whether a RICD shields waters from a consumptive use that would otherwise be available under a particular compact.” Colorado Water Conservation Bd. v. Upper Gunnison River Water Conservancy Dist., 109 P.3d 585, 595 (Colo. 2005). Here, the size and magnitude of flows of that Pitkin County is requesting will restrict future upstream consumptive uses and development potential, and will reduce the flexibility that Colorado has to manage its water entitlements under Colorado and Upper Colorado River Compacts. As summarized in the table below, the total volume of water of the flow rates of the RICDs will significantly exceed 50% of the sum of the total average historical volume of water for the reaches of the stream in which the RICDs will be located:

Structure	Period	# of Days	Claimed Flow Rate (cfs)	Claimed Total Volume (af)	50% of Average Historical Volume	Claimed % of Average Historic Volume
UPPER	Apr. 1 - May 14	44	240	20,909	13,744	76.1%
	May 15 - June 30	47	1,500	139,590	68,494	101.9%
	July 1 - Aug. 15	46	1,000	91,080	38,228	119.1%
			Total	251,579	120,466	104.4%
LOWER	May 14 - May 31	18	1,350	48,114	17,685	136.0%
	June 1 - July 14	44	2,000	174,240	69,288	125.7%
	July 15 - Sept. 15	63	380	46,649	25,124	92.8%
			Total	269,003	112,097	120.0%

The Upper RICD will tie-up on average **104.4%** of the total average historical volume of water in its reach of the stream (**119.1%** between July 1st and August 15th). The Lower RICD will tie-up on average **120.0%** (**136.0%** between May 14th and May 31st). These vast flow quantities will leave essentially no future ability to develop compact apportionments on the Roaring Fork River or its tributaries above the RICDs. These quantities will also adversely affect, if not completely prohibit, upstream consumptive uses from being developed through exchanges of Ruedi Reservoir water supplies, as leased through the Basalt Water Conservancy District or from the Bureau of Reclamation, to points above the confluence of the Roaring Fork and Frying Pan Rivers.

Furthermore, the Roaring Fork River Basin is already over-appropriated. A “Cameo” call occurs when senior agricultural rights in Grand Valley near Grand Junction do not have adequate water supplies and call out upstream junior diversions in the Colorado River Basin, including on the Roaring Fork River. The Cameo call has occurred in 15 of the past 24 years, for an average of 70 days each year. The call lasted 122 days in 2002 and 92 days in 2004. Additionally, local calls within the Roaring Fork Basin are occurring with escalating frequency as the number of appropriations within the basin increases. Prior to 2008, the only two calls placed locally were on Cattle Creek and the Fryingpan River in 2002 – a historically dry year. However, in the past



three years – years with average or above average precipitation – the mainstem of the Roaring Fork River and the following seven tributaries have gone on call:

	2008	2009	2010
Roaring Fork Mainstem	X		X
Cattle Creek	X	X	X
Crystal River			X
Four Mile Creek		X	X
Fryingpan River	X	X	X
Hunter Creek	X	X	X
Sopris Creek	X	X	X
Woody Creek	X	X	X

Thus, the CWCB should find that Pitkin County's proposed RICDs on the already over-appropriated Roaring Fork River will materially impair the ability of Colorado to fully develop and place consumptive beneficial use its compact entitlements.

(II) Exercise of Pitkin County's proposed RICDs will cause material injury to existing ISFs.

The legislative purpose of an ISF is to “correlate the activities of mankind with some reasonable preservation of the natural environment.” C.R.S. § 37-92-102(3). The CWCB's instream flow and natural lake level water rights protect diverse environments in Colorado including coldwater and warm water fisheries, waterfowl habitat, unique glacial ponds, habitat for neotenic salamanders, riparian vegetation, unique hydrologic and geologic features, and critical habitat for threatened or endangered native fish. See <http://cwcb.state.co.us/environment/instream-flow-program/Pages/main.aspx>.

The CWCB ISF decreed in Case No. 85CW646, Water Division 5, includes the reach of the proposed Pitkin County RICDs. The ISF extends from the Roaring Fork River's confluence with Maroon Creek to its confluence with the Fryingpan River, and has a decreed flow rate of 55.0 cfs from April 1 through September 30. The appropriation date of the ISF is November 8, 1985 and the adjudication date is December 31, 1985. This historically unstable reach of the Roaring Fork River is managed by the Colorado Division of Wildlife for cold water fisheries and Brown Trout species protection.

Pitkin County's proposed RICDs may materially injure the ISF by harming the natural environment that the ISF was decreed to protect. The RICDs' water parks will be created via construction of manmade whitewater features such as “holes,” “waves,” “hydraulic jumps” and “downstream pools.” Construction activities will necessarily include track equipment driving on and excavating the bed material in the Roaring Fork River's wet channel and temporarily redirecting the flow of its main channel. Construction activities may cause increases in turbidity and flow velocities, trapped fish in the coffered area, reach-wide sediment transport and fluvial geomorphology, and change in location of the downstream riffle. The features once constructed may cause permanent damage to this ISF reach. Thus, although the relative priority of Pitkin County's proposed RICDs will not harm any existing ISFs in the traditional sense of diminishing



their decreed flow rates, the CWCB should find that the RICDs cause material injury to the statutory purpose of the ISF decreed in Case No. 85CW646.

(III) Adjudication and administration of Pitkin County’s proposed RICDs will not promote maximum utilization of the waters of the state.

The Supreme Court of Colorado in Fellhauer v. People, 447 P.2d 986, 994 (Colo. 1968) first stated that it is implicit in the Colorado Constitution that “there shall be maximum utilization of the water of this state” (citing C.R.S. § 37-92-102(1)(a) (1990)). There, the court defined maximum utilization as “efficiency”. Id. It stated that each diverter “must establish some reasonable means of effectuating his diversion” and that he “is not entitled to command the whole or a substantial flow of the stream...” Id. In Empire Lodge Homeowners’ Ass’n v. Moyer, 39 P.3d 1139, 1150 (Colo. 2001), the court expanded upon the principal of maximum utilization, explaining that the term also means “maximizing the use of Colorado’s limited water supply for as many decreed uses as possible” and “for multiple beneficial purposes”.

Pitkin County’s proposed RICDs are not a maximum utilization of the waters of the state under any definition of the term. The RICDs are not “efficient.” The Nov. 21, 2003 RICD Technical Criteria suggest that a RICD have a minimum depth of 3.0-3.3 ft. However, the Pitkin County RICDs will have the following depths:

Structure	Period	# of Days	Claimed Flow Rate (cfs)	Claimed Depth (ft.)
UPPER	Apr. 1 – May 14	44	240	3.0
	May 15 – June 30	47	1,500	6.4
	July 1 – Aug. 15	46	1,000	5.2
LOWER	May 14 – May 31	18	1,350	5.0
	June 1 – July 14	44	2,000	5.8
	July 15 – Sept. 15	63	380	3.0

The proposed RICDs will thus have nearly double the recommended RICD depth *on top of* the 55 cfs already decreed to the ISF on this reach of the Roaring Fork River. This is not a “reasonable means of effectuating” Pitkin County’s proposed water use as is required under Fellhauer. Furthermore, as discussed above, tying-up such vast flow quantities will leave essentially no unallocated apportionments available on the Roaring Fork River or its tributaries above the RICDs. It will also adversely affect, if not completely prohibit, future exchange, change, and transfer opportunities from points downstream of the RICDs to points upstream. Specifically, individuals and entities that own properties located above the RICDs will no longer be able to exchange water. Currently, Ruedi exchanges are one of the principal ways that upstream residents can drill domestic wells for household water supplies in the Roaring Fork Valley. Pitkin County’s proposed RICDs therefore do not “maximize[e] the use of Colorado’s limited water supply for as many decreed uses as possible” as is required under Empire Lodge.

Moreover, Pitkin County is applying for not one but two separate RICDs, 1/4th of a mile apart, with no significant inflow between them. The claimed flow rates for the Lower RICD are 500 cfs greater than those for the Upper RICD. Pitkin County has not justified a need for two distinct



water parks with distinctly different flow rates on precisely the same river reach. Additionally, the stretch of the Roaring Fork River between the City of Aspen and the Town of Carbondale already has a decreed RICD and a pending RICD. In 2000, the City of Aspen was decreed a RICD for 350 cfs in Case No. 00CW284, Water Division 5. In 2006, the Town of Carbondale applied for a RICD for 1600 cfs in Case No. 06CW77, Water Division 5. A third and fourth RICD on a 30 mile stretch of river is not “management of Colorado’s water resources to extend its benefit for multiple beneficial purposes”.


Thus because Pitkin County’s proposed RICDs “command the whole or a substantial flow” of the Roaring Fork River, and because they do not “use water efficiency to serve all the water needs of the state,” the CWCB should find that the RICDs will not promote maximum utilization of the waters of the state.

Thank you for your attention to this matter. Please feel free to contact us with any questions you may have. We will not be making an oral presentation to the CWCB on behalf of our clients at the July 12th – 13th Board Meeting.

Very truly yours,

PATRICK, MILLER & KROPF, P.C.

A Professional Corporation

By: 

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PLN/KLP/dml

cc/encl.: clients

June 27, 2011

VIA EMAIL

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

**Re: Pre-Hearing Statement of PT Barn Ranch LLC and Fall Line Properties, LLC
Application for Water Rights of Board of County Commissioners of Pitkin County,
Case No. 10CW305, Water Division 5**

Dear Board:

The Board of County Commissioners of Pitkin County ("County") seeks approval of recreational in-channel diversion water rights ("RICDs") through the application in the above case ("Application"). Our law firm represents two opposers in that case, PT Ranch Barn LLC and Fall Line Properties, LLC ("Opposers"). Both Opposers are the owners, users and beneficiaries of existing unadjudicated water rights in Pitkin County that may be injured by approval of the Application.

On behalf of Opposers, we are submitting this pre-hearing statement to the Colorado Water Conservation Board ("Board") in advance of the July 12-13 meeting at which the Board will deliberate the proposed RICDs. As you know, after such deliberation the Board shall make written findings regarding three factors, one of which is whether adjudication and administration of the RICDs would promote maximum utilization of waters of the state. C.R.S. § 37-92-102(6)(b)(V). For the reasons set forth below, the Board's written findings to the Water Court in the above case should include a finding that the RICDs will not promote maximum utilization of waters of the state.

The County acknowledges that the RICDs may affect undecreed water rights located upstream of the RICDs. *See* proposed decree dated May 9, 2011; Report of Canyon Water Resources, LLC dated February 2011 at p. 14 (RICDs may affect upstream undecreed water uses); Supplemental Report of Canyon Water Resources, LLC dated May 2011 at p. 8 (RICDs will not cause injury to senior decreed water rights but may affect development of other consumptive uses upstream of the RICDs). It argues that injury to such existing water rights is acceptable because the RICDs operate in the prior appropriation system. *See* Supplemental Report at p. 8. The County's position is inconsistent with the statutory requirement that the



Water Court make affirmative findings that the RICDs will promote maximum utilization of the waters of the state. *See* C.R.S. § 37-92-305(13)(a)(II).

Since administration of the RICDs as currently proposed will result in curtailment of existing unadjudicated upstream water uses that have historically operated under free river conditions, the Board should find that the RICDs will not promote maximum utilization of waters of the state. At a minimum, terms and conditions must be imposed on the RICDs to protect such water rights, including:

- Similar to instream flow water rights, the RICDs must be “subject to the present uses or exchanges of water being made by other water users pursuant to appropriation practices in existence on the date of such appropriation, whether or not previously confirmed by court order of decree.” *See* C.R.S. § 37-92-103(3)(b); and
- The ability of upstream water users to exchange water through the claimed RICD reach in order to utilize replacement releases from Ruedi Reservoir should be preserved.

Opposers reserve the right to make additional arguments in connection with this matter. Thank you for your consideration.

Sincerely yours,

Mark E. Hamilton
Meghan Winokur
for Holland & Hart^{LLP}

cc: Arthur B. Ferguson, Jr.
Alison E. Eastley
PT Barn Ranch LLC
Fall Line Properties, LLC
Colorado Water Conservation Board Recipient List

/mnw

BEFORE THE COLORADO WATER CONSERVATION BOARD STATE OF COLORADO	 ▲ COURT USE ONLY ▲
CONCERNING THE APPLICATION FOR SURFACE WATER RIGHT APPROPRIATIONS FOR RECREATIONAL IN-CHANNEL DIVERSION IN PITKIN COUNTY	
Attorneys for Objector Southeastern Colorado Water Conservancy District Lee E. Miller (#26663) Alix L. Joseph (#33345) BURNS, FIGA & WILL, P.C. 6400 South Fiddlers Green Circle, Suite 1000 Greenwood Village, CO 80111 Phone: (303) 796-2626 Fax: (303) 796-2777 E-mail: lmiller@bfw-law.com ajoseph@bfw-law.com	Case No. 2010CW305
<p align="center">PRE-MEETING STATEMENT OF SOUTHEASTERN COLORADO WATER CONSERVANCY DISTRICT</p>	

Southeastern Colorado Water Conservancy District (“Southeastern”) is a statutory water conservancy district (*see* C.R.S. §§ 37-45-101, *et seq.*), which includes within its boundaries most of the municipalities and irrigated land in the Arkansas River Valley in Colorado. Southeastern administers, holds all water rights for, and repays reimbursable costs for the Fryingpan-Arkansas Project, a \$550 million multi-purpose reclamation project authorized by Congress and built by the U.S. Bureau of Reclamation. The Project diverts water underneath the Continental Divide, from the Fryingpan and Roaring Fork River drainages, into the Arkansas River drainage, where Project water is stored in Pueblo Reservoir and other reservoirs. Southeastern provides Project water and return flows to supplement the decreed water rights of water users throughout the District, which extends across parts of nine counties. Southeastern repays a large part of the Project’s construction costs (estimated at \$127 million over a minimum 40-year period), as well as annual operation and maintenance costs, in accordance with its repayment contract with the United States. Payments are made primarily from property tax revenues available to Southeastern, supplemented by revenue from Project water sales.

Southeastern is interested in this matter as a water user who diverts water rights from the Fryingpan and Roaring Fork River basins upstream from the proposed RICD reach. The conditional decree of the Fryingpan-Arkansas Project was entered in Civil Action No. 4613 on August 3, 1959, supplementing and modifying the decree entered June 20, 1958, in the District Court in and for the County of Garfield, State of Colorado, in the proceedings captioned "In the Matter of the Supplemental Adjudication of the priority of Appropriation of Water for All Beneficial Purposes in Water District No. 38 in the State of Colorado; Robert L. Bridges, Executor of the Estate of Tucker McClure, Deceased, and M. Stanley Pings, Petitioners."

Fryingpan-Arkansas Project activities include operation, maintenance and improvement of the collection system. Operation is subject to the terms of Division 5 and Division 2 Decrees, the Fryingpan-Arkansas Project Operating Principles, and Congressional authorizing legislation. The West Slope structures have been operated to divert water to the East Slope reservoirs of the Fryingpan-Arkansas Project and thereafter for decreed beneficial uses. Southeastern has contractual agreements for planning, construction operation, maintenance and repayment of the Fryingpan-Arkansas Project with the United States Bureau of Reclamation.

1. Standard of Review

When an applicant files an application for an RICD, it must submit a copy to the CWCB for review. C.R.S. § 37-92-102(5). The CWCB, after deliberation in a public meeting, shall make written findings on several issues, including whether the RICD would materially impair Colorado developing its compact entitlements and whether the RICD would promote maximum utilization of the waters of the state.

a. Proposed finding to assure that the adjudication and administration of the recreational in-channel diversion would not materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements.

The Colorado General Assembly has placed great emphasis on the development and beneficial use of Colorado's entitlement to the Colorado River. To that end, Section 10 of the 2008 Projects Bill (HB 08-1346) authorized the expenditure of \$500,000 from the Colorado Water Conservation Board construction fund "for the board to undertake a study to identify issues associated with the administration of state water rights in the Colorado river basin under the terms of the Colorado river and upper Colorado river compacts, to evaluate options to avoid the curtailment of uses if at all possible, and to evaluate options for curtailing uses in Colorado in an equitable manner should the terms of the Colorado river compact fail to be met. The study is to be used by the state to look at options openly for avoiding curtailments if possible and by the state engineer to develop curtailment rules for use in water right administration should curtailments become necessary under the terms of the Colorado river compact." It is Southeastern's understanding that this study is proceeding.

During the CWCB's May 2011 Board meeting, the Board considered Agenda Item No. 9, regarding a recommendation for new instream flow appropriations on the Colorado River between Kremmling and Dotsero from the Upper Colorado River Wild and Scenic Stakeholders Group ("Stakeholders Group"). We understand that the Board will further consider this recommendation further during its July 2011 meeting. Consistent with General Assembly's concern regarding administration of the Colorado River, Southeastern understands that the Board is considering a proposed term and condition for the instream flow from CWCB Staff and the Stakeholders Group stating that when a compact curtailment is in effect within Colorado, pursuant to the Colorado River Compact of 1922 and the Upper Colorado River Basin Compact of 1948, the proposed instream flow water right will not be administered, under circumstances or definition to be resolved by the Board during its July 2011 meeting. Memo to CWCB members from Linda Bassi, Jeff Baessler and Ted Kowalski dated May 6, 2011, regarding Agenda Item 9, May 17-18, 2011 Board Meeting at p. 5. For the same reasons that CWCB Staff and the Stakeholders Group believe it important to limit the administration of the instream flow water right for this Colorado River wild and scenic segment during times of administration, Southeastern contends that a similar finding to the term and condition ultimately decided by the Board for the instream flow should be included in the CWCB's written findings on this RICD.

b. Proposed finding regarding maximum utilization of waters of the state.

In the Report of the Division Engineer and summary of consultation in this case, the Division Engineer recommended the following:

A ruling should also include the following terms and conditions:

- a. If the Upper and Lower Structures are decreed different amounts with different period for those amounts, Pitkin County will place an administrative call for one water right at one structure on any individual day.
- b. A call by the subject rights must yield at least 85% of the decreed amount for the call to be honored.
- c. Beneficial use by non-motorized boating must occur at the time any upstream junior rights are curtailed.

Report of the Division Engineer and Summary of Consultation in Case No. 10CW305 dated March 25, 2011. Southeastern asserts that the CWCB's findings should recognize the Division Engineer's recommended terms and conditions.

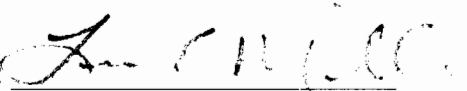
2. Witnesses

James W. Broderick, Executive Director, Southeastern Colorado Water Conservancy District. Mr. Broderick has knowledge regarding the water rights of Southeastern; the operation of the

Southeastern District; operation and administration of the Fryingpan Arkansas Project; plans for future water resource development in the Arkansas River basin; compliance with the Colorado River Compact; and the demand for water rights and exchanges on the Fryingpan and Roaring Fork Rivers. Mr. Broderick may testify consistent with the foregoing pre-hearing statement.

Respectfully submitted this 27TH day of June 2011.

BURNS, FIGA & WILL, P.C.

By: 
Lee E. Miller
Alix L. Joseph

**Attorneys for Objector
Southeastern Colorado Water
Conservancy District**



June 27, 2011

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Case No. 10CW305 (Water Division No. 5) Pitkin County RICD

Dear Board Members,

The Colorado River Water Conservation District ("River District") would like you to consider the following comments in your deliberation of the recreational in-channel diversion proposed by Pitkin County.

I. Introduction.

The River District is a political subdivision of the State formed by the Colorado Legislature (*See* C.R.S. § 37-46-101, *et seq.*) in 1937 for the purpose of safeguarding that portion of the waters of the Colorado River apportioned to the state by interstate compact and of promoting the welfare of the inhabitants of the River District. Geographically, the River District encompasses an area of approximately 29,000 square miles, including all of twelve and parts of three western Colorado counties. Included in that area are the headwaters and tributaries of the Colorado River mainstem and its principal tributaries, the Gunnison, the White and the Yampa Rivers.

The general powers of the River District, set forth in C.R.S. § 37-46-107, *inter alia*, direct the River District to make surveys and investigations to ascertain the best method of utilizing stream flows within the River District and to make appropriations "for the use and benefit of the ultimate appropriators" This statute further directs the River District "to perform all acts and things necessary or advisable to secure and insure an adequate supply of water, present and future, for irrigation, mining, manufacturing, and domestic purposes within said districts." The River District's primary comment regarding the Pitkin County RICD claim is to ensure that the adjudication and administration of the RICD will not interfere with the maximum utilization of the waters of the State. *See* C.R.S. § 37-92-102(6)(b)(V).

II. The Pitkin County RICD may adversely impact the maximum utilization of water by constraining future exchanges of water released from Ruedi Reservoir.

To promote its statutory objectives, the River District operates a water marketing enterprise that leases “wholesale” water supply within the Colorado River basin. The River District’s water marketing supply includes sources available to it by virtue of its contractual interest in Ruedi Reservoir. Ruedi Reservoir is located on the Fryingpan River, a tributary of the Roaring Fork River. The confluence of the Fryingpan and Roaring Fork Rivers is located just downstream from the proposed Pitkin County RICD. Numerous individual, municipal, and corporate water users in the Colorado River basin have entered contracts with the River District and the local conservancy district, the Basalt Water Conservancy District, which provides contractees with the right to use water released from Ruedi Reservoir in the upper reaches of the Roaring Fork basin by exchange. The supplies from Ruedi Reservoir allow beneficial uses of water on the upper Roaring Fork by satisfying calls from downstream senior rights lower on the Roaring Fork or on the mainstem of the Colorado River (primarily the Cameo call). The claimed RICD water right may constrain the ability of upstream water users in the Roaring Fork River basin to use Ruedi Reservoir supplies by exchange.

The application filed by Pitkin County in Case No. 10CW305, Water Division 5, claims flows of 1,500 cfs at the Upstream Structure Unit and 2,000 cfs at the Downstream Structure Unit from April 1 to Labor Day. These numbers are refined in the February 2011 Design Engineering Report (“Design Report”) and the Report in Support of the Pitkin County River Park (“Hydrology Report”). The Design Report (Table 1) and Hydrology Report (Table 2-1) identify that Pitkin County is seeking flow rates of 240 cfs from April 1-May 14; 1,000 cfs from July 1 – August 15; and 1,500 cfs from May 15-June 30 at the Upper Structure and 380 cfs from July 15-September 15; 1,350 cfs from May 14-May 31; and 2,000 cfs from June 1 – July 14 for the Lower Structure Unit. However, the Hydrology Report at Figure 3-2 and Table 3-1 identify that based on thirty years of hydrologic analysis these flow rates, especially on the higher end, are frequently unavailable on the Roaring Fork River at the location of Pitkin County’s RICD.

This raises questions about whether Pitkin County can demonstrate that water is available for appropriation in the amounts claimed in the application but it also raises issues regarding maximum utilization. As demonstrated in the Hydrology Report the mean monthly discharge at the Pitkin County River Park in June and July are 1,732 and 1,020 cfs respectively. See Hydrology Report, Table 3-1. Pitkin County’s claim of 2,000 cfs for the Downstream Structure Unit from June 1-July 14 exceeds the monthly mean available at the location of the RICD and if decreed for 2,000 cfs would reduce the ability for future exchanges of Ruedi water into the upper reaches of the Roaring Fork during June and July. Likewise, the claim for 1,500 cfs from May 15-June 30 at the Upper Structure and the claim for 1,500 cfs from May 14-May 31 at the Lower Structure appears, in large part, to exceed the mean monthly discharge of 771 cfs in May and 1,732 cfs in June. While it is true that “[m]aximum utilization does not mean that every ounce of Colorado’s natural stream water ought to be appropriated...”, (*Pagosa Area Water and Sanitation Dist. v. Trout Unlimited*, 170 P.3d 307, 314 (Colo. 2007)), Pitkin County’s claimed RICD may only be approved to the extent that it can be reconciled with state’s maximum utilization and optimum use goals that work to extend the public’s water resource to as many

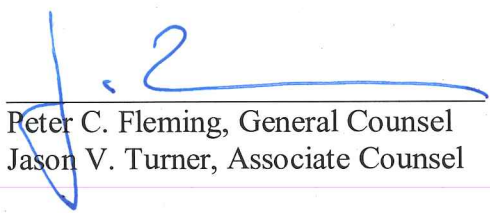
June 27, 2011

beneficial uses as the available supply will allow. *See Pagosa Area Water and Sanitation Dist. v. Trout Unlimited*, 219 P.3d 774, 779 -780 (Colo. 2009).

III. Conclusion.

The River District requests that the Water Conservation Board closely consider the hydrologic information provided by the applicant in assessing whether the amounts claimed meet the state's goal of maximum utilization. The River District is concerned that if the RICD is approved, in the amounts claimed, that it will reduce future beneficial uses on the Roaring Fork River above the location of the RICD.

Respectfully submitted this 27th day of June 2011



Peter C. Fleming, General Counsel
Jason V. Turner, Associate Counsel

COLORADO RIVER WATER
CONSERVATION DISTRICT

Cc: CWCB Staff
Parties to Case No. 10CW305, Water Division No. 5