Basalt Water Conservancy District (BWCD) & Starwood Metropolitan District (SMD)

Proposed Acquisition of the Stapleton Brothers Ditch

Maroon Creek, Roaring Fork River near Aspen and Basalt, CO

HB 08-1280

Hearing Before the CWCB Board Members

November 16, 2009

resentation Outline

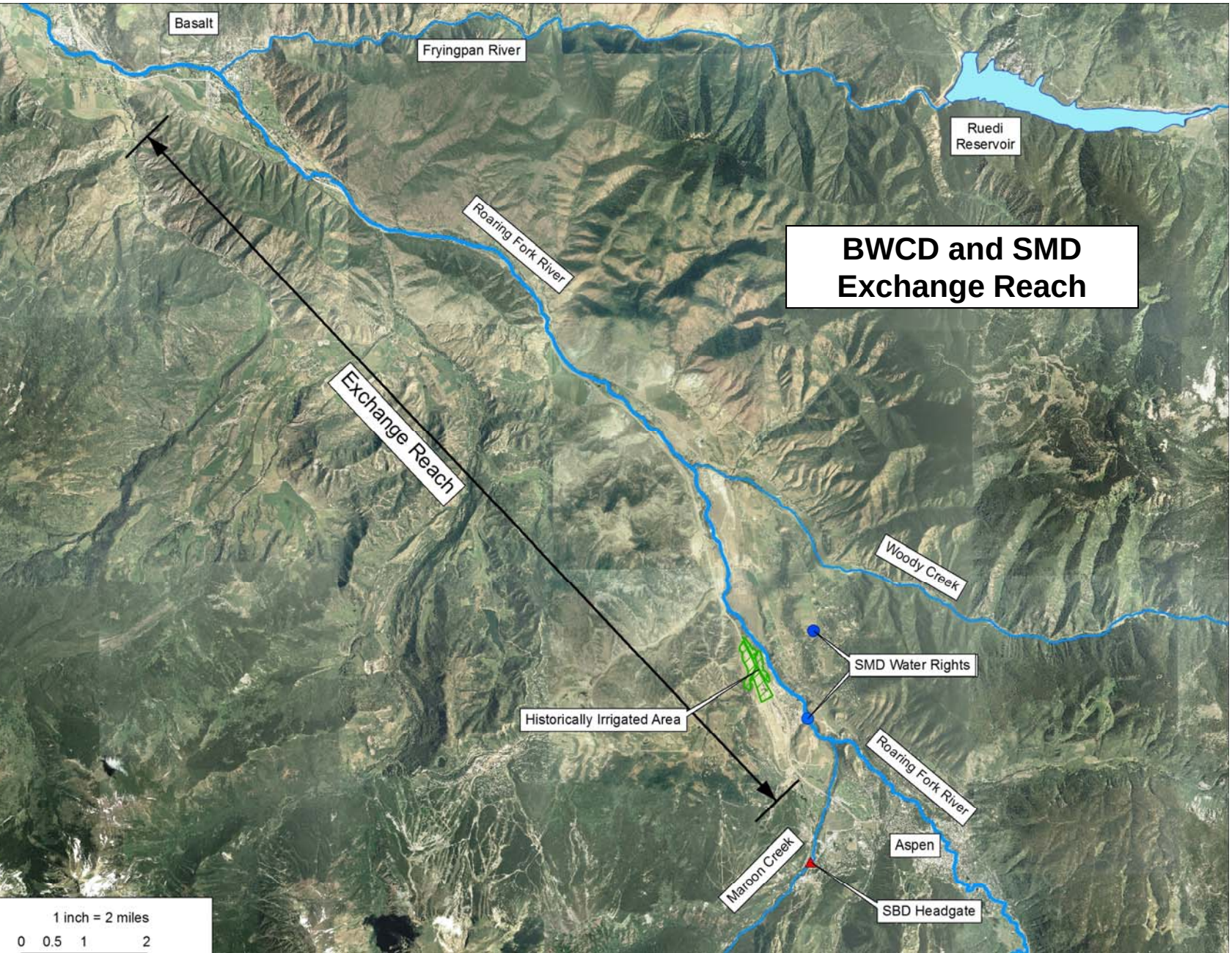
1. BWCD and SMD water rights and their relationship to location and historical use of Stapleton Brothers Ditch (SBD)
2. Acquisition and “stacking” of the SBD will potentially injure BWCD and SMD water rights
3. The offered water right is not dependable for ISF purposes
4. Based upon the evaluation criteria established under CWCB’s Rule 6e, SBD is not an appropriate water right for acquisition
5. Summary of Concerns
6. Practical Solutions for HB 08-1280, Let’s Work Together

BWCD and SMD Roaring Fork Exchanges

BWCD and SMD rely on the existing exchange capacity of the Roaring Fork River between the Fryingpan River and Maroon Creek.

The parties have three decreed exchanges within this reach that facilitate the augmentation of junior domestic water users. Additional cases are pending.

The junior depletions are augmented by exchange through the use of storage releases from Ruedi Reservoir located on the Fryingpan River.


Basalt
Fryingpan River
Ruedi Reservoir
Roaring Fork River
BWCD and SMD Exchange Reach
Exchange Reach
Woody Creek
SMD Water Rights
Historically Irrigated Area
Roaring Fork River
Aspen
Maroon Creek
SBD Headgate
1 inch = 2 miles
0 0.5 1 2

WCD Water Marketing Program

In 1982, the State Engineer approved the BWCD's Substitute Water Supply Plan (SWSP). Augmentation source, Ruedi Reservoir.

The State Engineer required the BWCD to periodically apply to Water Court and formally decree the augmentation uses approved in the SWSP.

In compliance with the State Engineer, the BWCD has periodically decreed plans for augmentation and exchange:

- 87CW155, 93CW319, and 98CW26 & 98CW89 Consolidated
- 2 cases pending: 01CW305 and 02CW77

WCD Water Marketing Program Statistics

As of the 2009 Annual Operating Plan, the BWCD has approximately 479 total contracts:

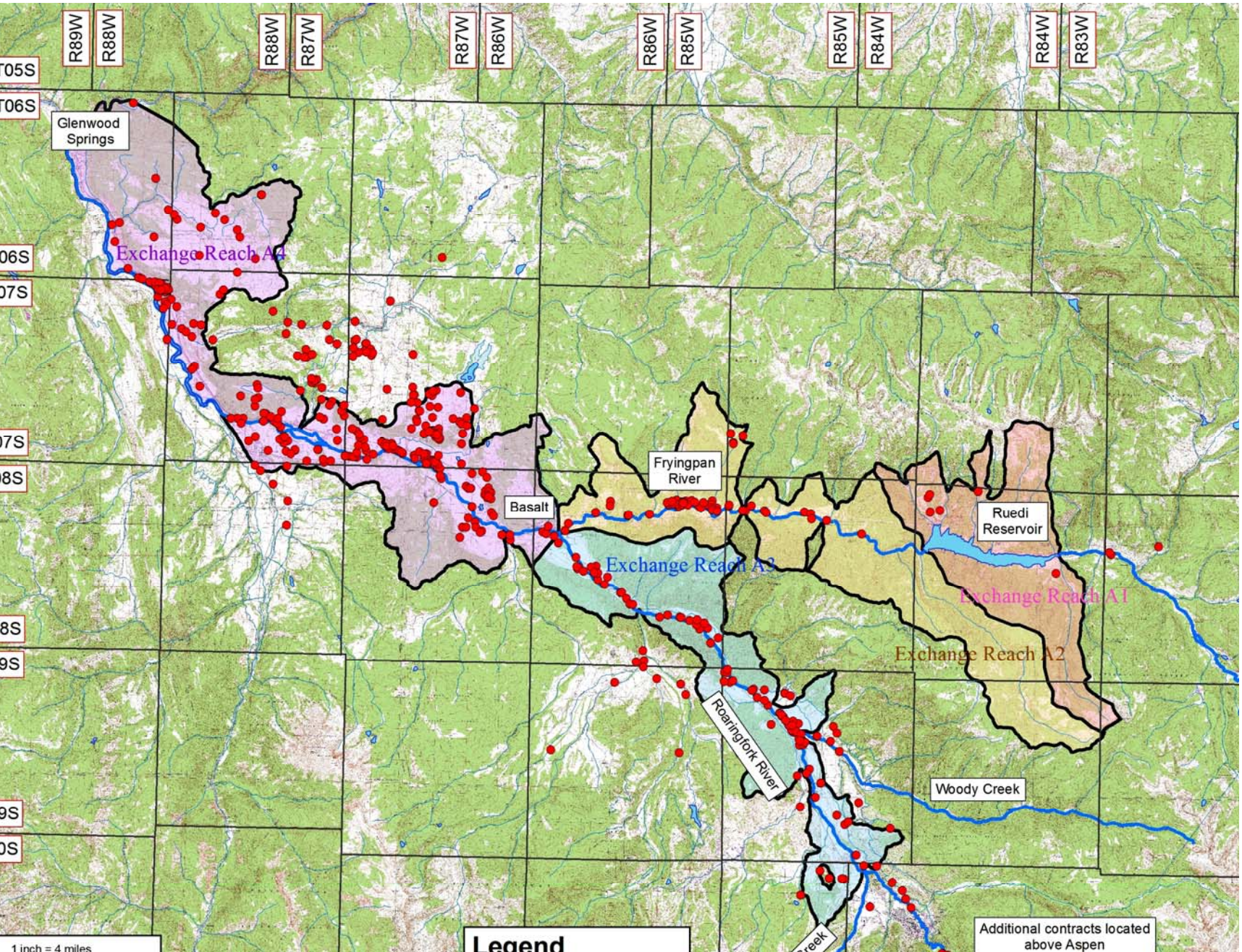
- Augmentation Plans decreed by BWCD = 120 contracts
- Augmentation Plans pending by BWCD = 105 contracts
- Private Augmentation Plans = 160 contracts (decreed & pending)
- Substitute Water Supply Plan = 94 contracts

Provides thousand of residents in the Roaring Fork with a cost effective source of legal water supply.

BWCD's program is well received and supported by the Division 5 Engineer's Office.

District tracks water use and requests augmentation releases for all contracts. Streamlines the State's administration.

119 Contracts are located within Pitkin County in the Roaring Fork River exchange reach.


R89W
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R84W
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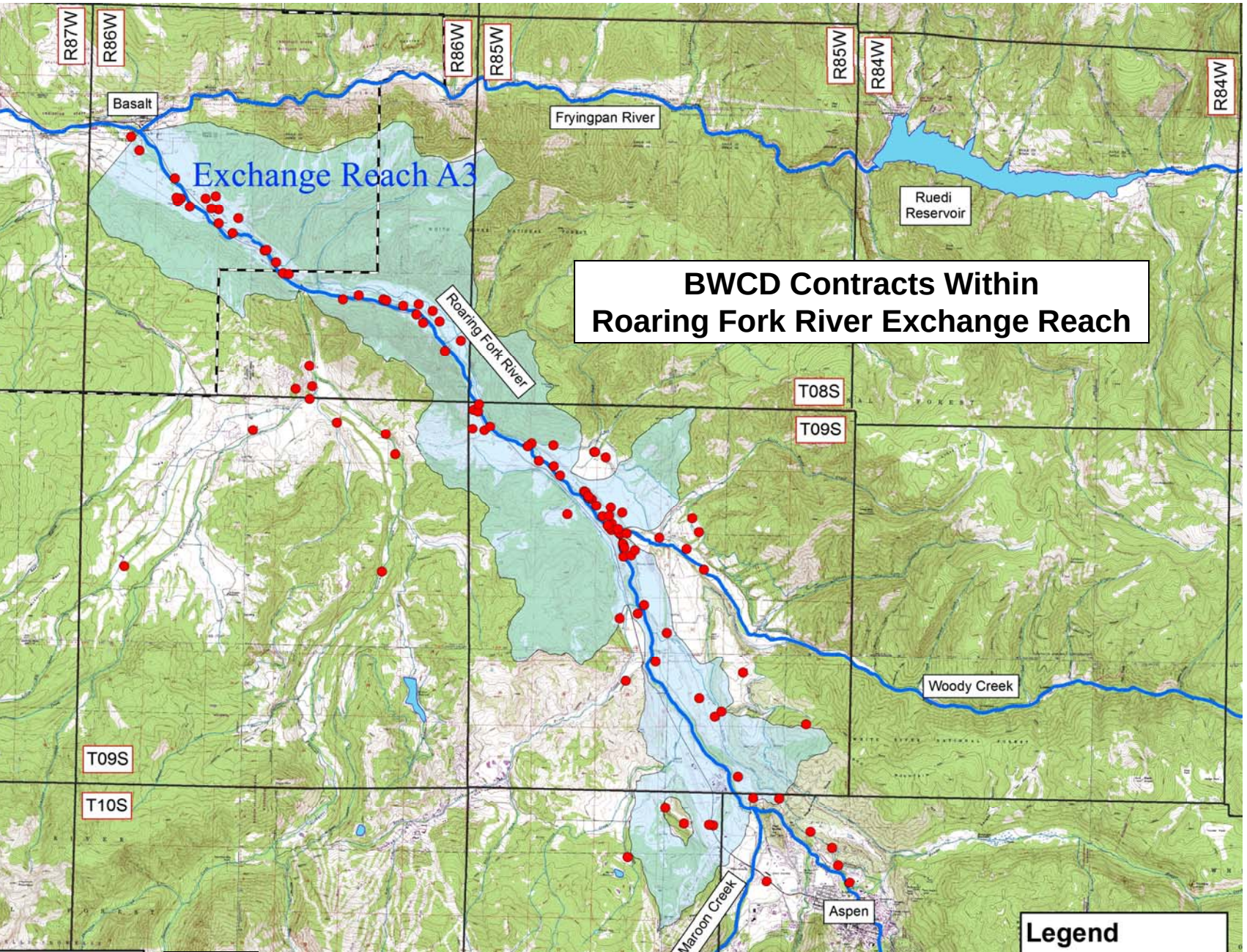
R83W
T05S
T06S
06S
07S
07S
08S
8S
9S
9S
0S
Glenwood Springs
Exchange Reach A4
Basalt
Fryingpan River
Exchange Reach A3
Ruedi Reservoir
Exchange Reach A1
Exchange Reach A2
Roaringfork River
Woody Creek
Additional contracts located above Aspen
1 inch = 4 miles
Legend


R87W
R86W
R86W
R85W
R85W
R84W
R84W
Basalt
Fryingpan River
Exchange Reach A3
Ruedi Reservoir
BWCD Contracts Within
Roaring Fork River Exchange Reach
Roaring Fork River
T08S
T09S
Woody Creek
T09S
T10S
Maroon Creek
Aspen
Legend

Acquisition and “stacking” of the SBD will potentially injure BWCD and SMD water rights

Acquisition of SBD provides no additional water to the river.

CWCB staff proposal to “stack” a senior water on top of its junior ISF right creates a changed stream condition. Reduces the exchange capacity available to BWCD and SMD.

Exchange capacity in the Roaring Fork River is limited thereby causing potential injury to BWCD and SMD.

cquisition will provide no additional water to the river

This assertion is contrary to the information provided by staff

- Staff report to Board Members, January 20, 2009

Book 1 / Tab 12 / Exhibit 7
or PDF Pages 141-147

Maroon Creek … The loaned 4.3 cfs could be used to bring flows up to 14 cfs at times when the ISF water right is not being met, or could be added to the existing 14 cfs ISF water right for a total of 18.3 cfs during the irrigation season.

Roaring Fork River … The loaned 4.3 cfs could be used to bring flows up to 55 cfs at times when the ISF water right is not being met, or could be added to the existing 55 cfs ISF water right for a total of 59.3 cfs during the irrigation season.

- DOW Letter to CWCB, August 26, 2009

Book 1 / Tab 12 / Exhibit 8
or PDF Pages 163-166

Maroon Creek and Roaring Fork River hydrographs. The ability to use this water to improve the environment on both Maroon Creek (14 cfs + 4.3 cfs), … to the point of return flow near the Aspen Airport (approximately at or above Galvin Gulch), will provide instream flow protection for additional fish habitat during the warmer irrigation season (deeper runs and pools), additional protection from harmful water quality parameters (high temperatures and low oxygen levels) and better connectivity for fish passage to different habitats (deeper riffles).

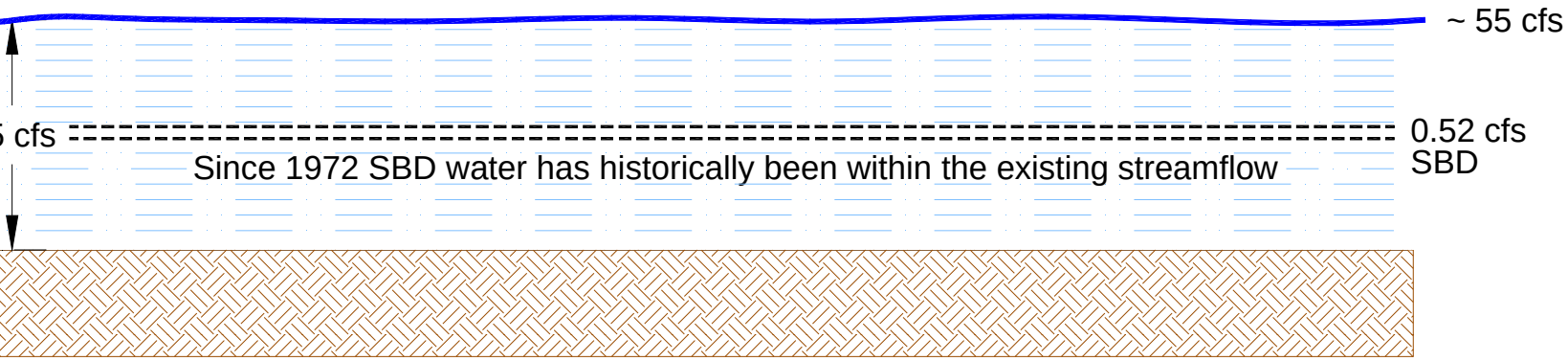
Timeline

1970 President **Nixon's 2nd Year** in Office - **Vietnam War** Continues
1971
1972 **Land Removed from Irrigation under the Stapleton Brothers Ditch**
1973 Senate Bill 97 Passed - Creates the **Instream Flow Program**, which Allows CWCB to Appropriate Water "Instream"
1974
1975
1976 Water Court Decrees **ISF Water Right on Maroon Creek for 14.0 cfs** (CWCB Case No. 76W-2945).
1977
1978
1979
1980
1981
1982 Inception of **BWCD Water Marketing Program** including **Exchange up Roaring Fork River**
1983
1984
1985 Water Court Decrees **ISF Water Right on Roaring Fork River for 55 / 30 cfs** (CWCB Case No. 85CW646).
1986
1987 Water Court Decrees **BWCD Plan for Augmentation and Exchange** (Case No. 87CW155).
1988
1989
1990
1991
1992 Water Court Decrees **Starwood Plan for Augmentation and Exchange** (Case Nos. 92CW347 & 95CW302).
1993
1994
1995
1996
1997
1998 Water Court Decrees **BWCD Plan for Augmentation and Exchange** (Case Nos. 98CW026 & 99CW089).
1999 Pitkin County files for a **Plan for Augmentation**, which Includes **Dry-Up Credits from Stapleton Brother's Dtich**
2000
2001 Application Filed for **BWCD Plan for Augmentation and Exchange** (Case No. 01CW305)
2002 Application Filed for **BWCD Plan for Augmentation and Exchange** (Case No. 02CW077)
2003
2004
2005
2006
2007
2008 **House Bill 08-1280**

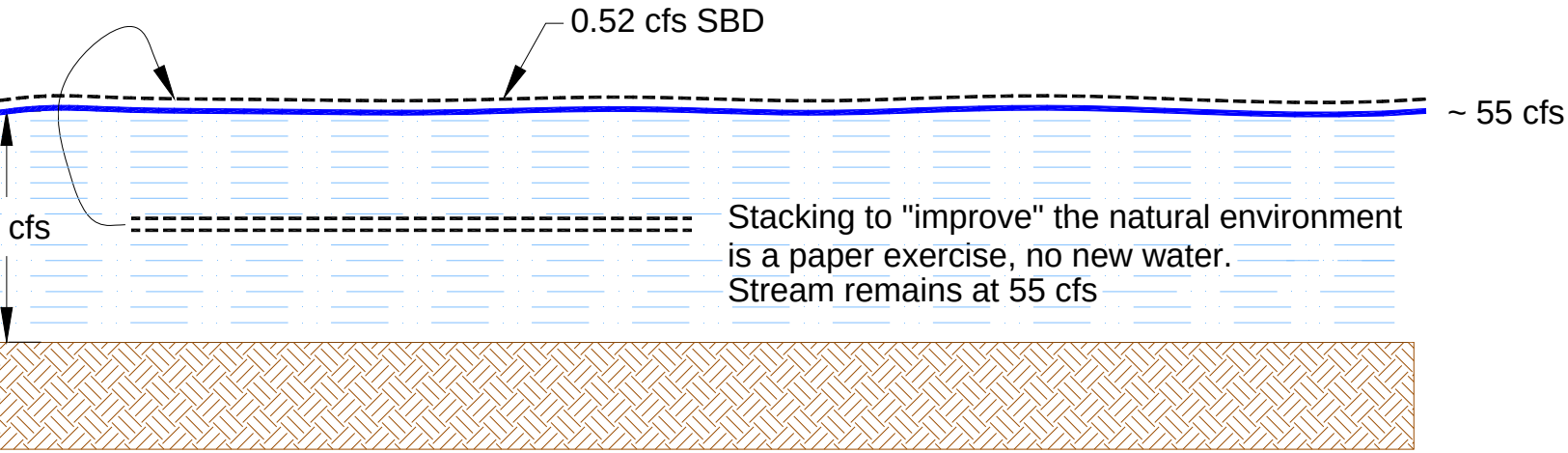
tacking the SBD right on top of the ISF creates a hanged stream condition that has potential to jure BWCD and SMD

- No new water added to the system
- Dry-up predates the CWCB ISF Program
- SBD water was in the river when CWCB made its ISF appropriation; the 1985 ISF relies on the SBD
- SBD water was in the river when BWCD / SMD Exchanges were decreed
- Historical exchange capacity is lessened by CWCB staff proposal

istoric River Conditions



roposed River Conditions



xchange Potential in Roaring Fork River is Limited – otential for Injury is Real

RESOURCE has previously opined that the Roaring Fork has exchange capacity above the 55.0 cfs.

Canyon Water Resources, on behalf of Pitkin County, opines that flows will often be below 55.0 cfs.

Pitkin County's position underscores the fact that the river has limited exchange capacity and any decision that could result in a loss of capacity is critical to BWCD and SMD.

WCD has a History of Cooperation with CWCB

In context of its various exchanges, the BWCD has worked with CWCB to ensure protection of the 55 cfs ISF.

Developed Injury with Mitigation Plan

- Stream Gage Funding
- Comprehensive Water Study
- Water Conservation
- New Augmentation Supplies

After one year of effort and tens of thousands of dollars, CWCB Board approves the Injury with Mitigation Plan (IMP). CWCB later suspends IMP Program in Division 5.

Despite this cooperative history, staff proposes to stack the SBD resulting in loss of critical exchange capacity. This jeopardizes the BWCD's water supply program.

. The Offered Water Right is not Dependable for ISF Purposes

SBD will lose its Historic User Pool (HUP) protection when used for ISF purposes.

Without HUP, SBD will be placed on call by the Cameo demand (typically mid-July through October in a dry year).

No certainty that the water right will be available in 10 years.

oss of Historic User Pool (HUP) Protection

SBD has historically benefitted from the release of water from Green Mountain Reservoir under the HUP.

A water right used for instream flow purposes is not a preferred use under Senate Document 80, and therefore not protected by the release of HUP water from Green Mountain Reservoir.

SBD is relatively junior in priority and will be out of priority mid-July through October due to the loss of HUP protection (Cameo call).

When placed on call, there will be a corresponding reduction in the release of HUP water from Green Mountain Reservoir. This results in less water to the Blue River, including reaches with CWCB ISF rights, and Colorado River above Shoshone.

hen SBD is in priority and available for ISF purpose, ream flows in Maroon Creek and the Roaring Fork ver remain well above CWCB rights

Figure 1

roon Creek below SBD Headgate:

hen SBD is in priority for ISF, flows are eater than 33 cfs.

Figure 1. Maroon Creek below Stapleton Brothers Ditch
Dry Year Hydrograph (1977, 1 in 50 dry)

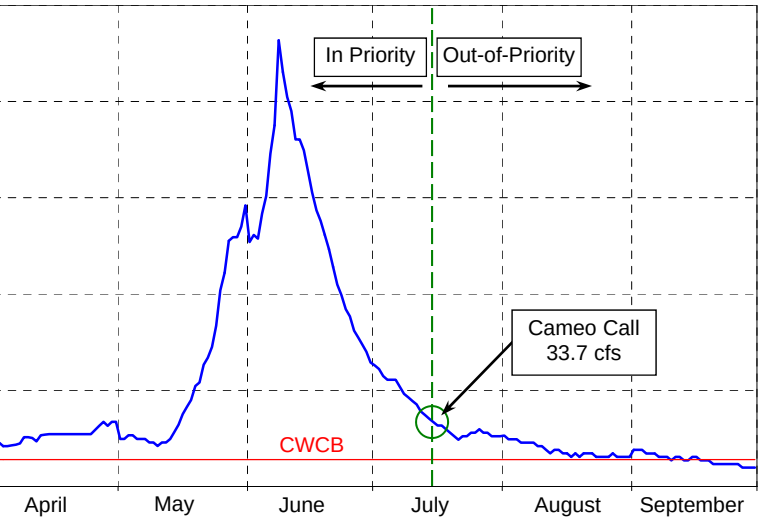
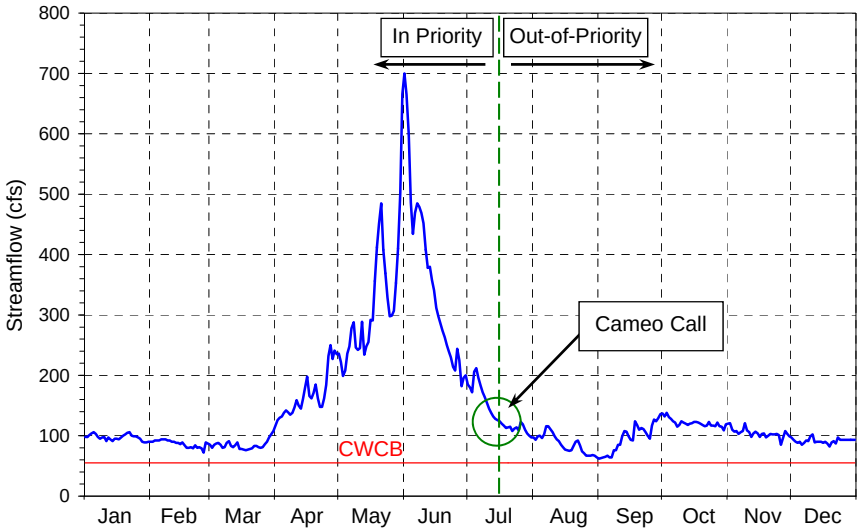


Figure 2

Roaring Fork River at ABC gage:

- When SBD is in priority for ISF, flows are greater than 100 cfs.

Figure 2. Roaring Fork River at ABC Gage
Dry Year Hydrograph (2002, 1 in 100+ dry)



o certainty that the SBD water right will be vailable to the CWCB (or others) in 10 years

Pitkin County letter to CWCB, January 8, 2009:

Book 1 / Tab 12 / Exhibit 7
or PDF Pages 150-152

"Pitkin County also requires the ability to withdraw water rights from the trust with adequate notice to the CWCB, for future needs that cannot be foreseen at this time."

- Significant effort and cost to CWCB for short duration.

Marketing of CU credits to others to preserve domestic and irrigation protection is limited.

- 10 years does not provide a sufficient legal water supply for domestic uses.
- State Engineer would not accept this short duration as evidence of a reliable augmentation supply for domestic uses. A backup water supply would be necessary.
- Reliable, reasonable priced water is already available to downstream users from Ruedi and Wolford Mountain reservoirs.

V. Appropriateness of the Acquisition, CWCB Rule 6e

Rule 6e items 1, 4 and 5 direct staff to examine both river gains and river losses in consideration of an offered right.

CWCB staff and CDOW consider only streamflow gains and ignores losses.

In its January 20, 2009 report to the CWCB Board, staff promised to conduct and deliver to the Board an engineering assessment that examined both streamflow gain and loss. Never delivered.

These issues will be examined in detail if the SBD proceeds to a Water Court change case.

ule 6e 5. Requires determination that the right ill preserve or improve that natural environment a reasonable degree

Acquisition of SBD will not improve the natural environment of the Roaring Fork River exchange reach to a reasonable degree.

Facts in this case simply do not support an affirmative finding.

- No new water to the exchange reach.
- Even if 0.52 cfs were added, virtually no change to the stream depth and velocity. This finding is based on CDOW's original R-2 Cross data used to quantify its ISF claim.
- R-2 Cross evaluation and conclusions confirmed by CDOW staff.

TABLE 1
Colorado Division of Wildlife R2 Cross Data - Roaring Fork River

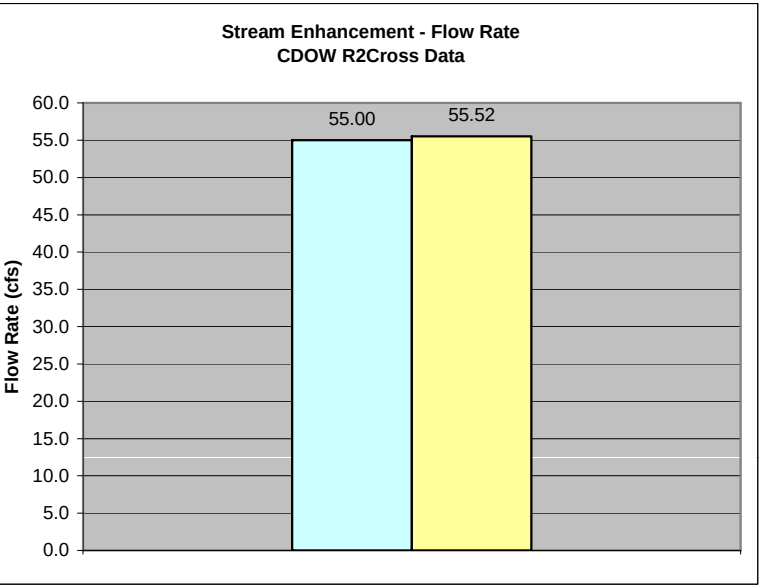
EAM NAME: Roaring Fork #3
OCATION: 1/2 m. above Basalt (between 2 irrigation ditches)
NUMBER; 2 Constant Manning's n

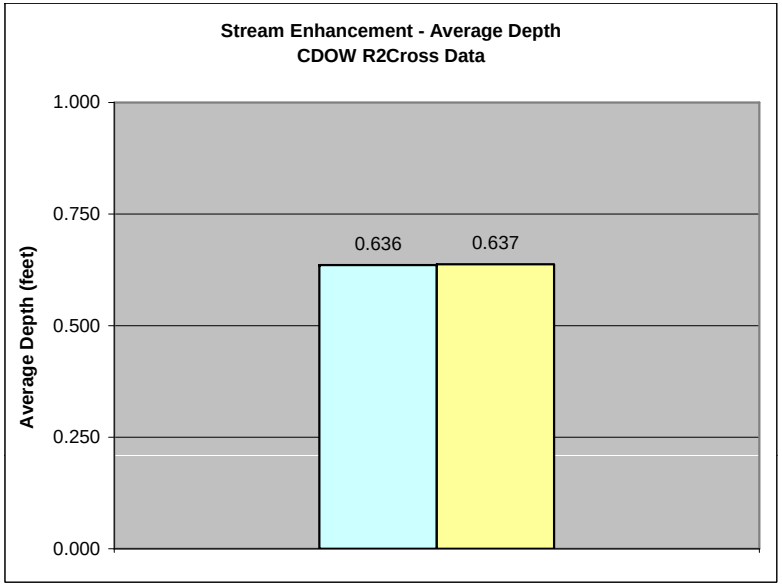
GL = Lowest Grassline elevation corrected for sag
WL = Waterline corrected for variations in field measured water surface elevations and sag

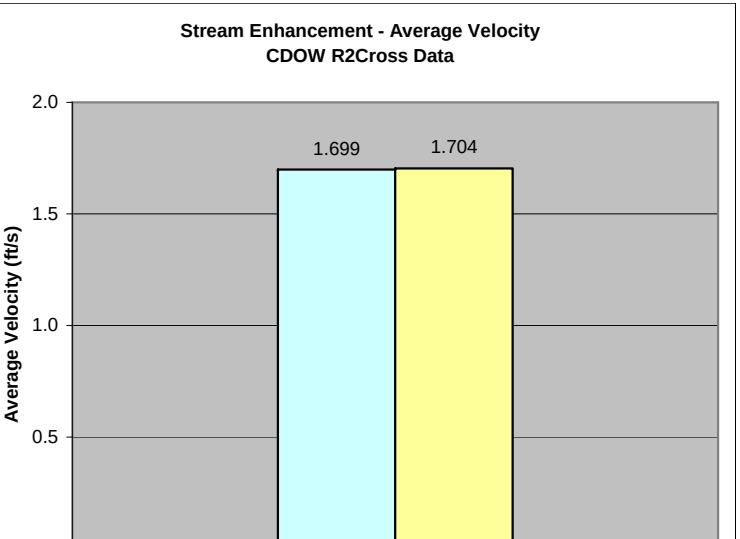
GING TABLE

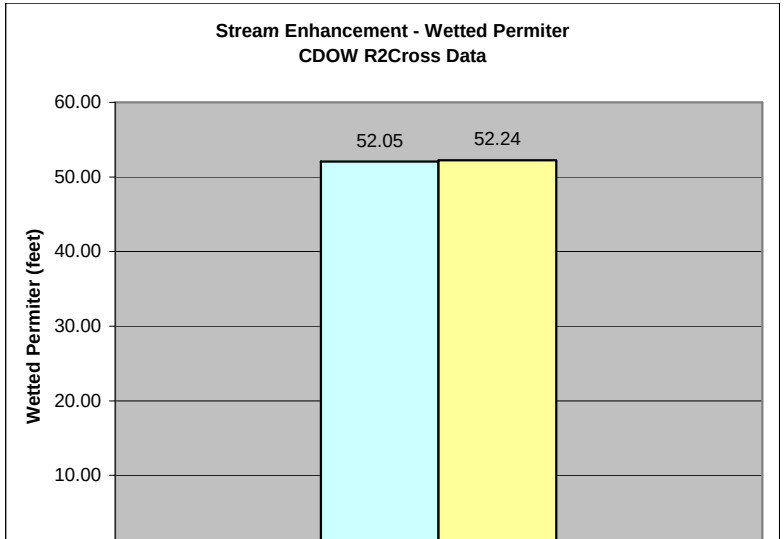
DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ.FT.)	WETTD PERIM (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
2.46	57.39	1.00	1.81	57.30	58.87	91.4	0.97	131.34	2.29
2.51	56.57	0.96	1.76	54.45	58.04	90.1	0.94	121.79	2.24
2.56	55.67	0.93	1.71	51.64	57.13	88.7	0.90	112.68	2.18
2.61	54.79	0.89	1.66	48.88	56.24	87.3	0.87	103.90	2.13
2.66	54.31	0.85	1.61	46.15	55.75	86.5	0.83	94.98	2.06
2.71	53.82	0.81	1.56	43.45	55.26	85.8	0.79	86.40	1.99
2.76	53.34	0.76	1.51	40.77	54.76	85.0	0.74	78.17	1.92
2.81	52.86	0.72	1.46	38.12	54.27	84.2	0.70	70.29	1.84
2.86	52.30	0.68	1.41	35.49	53.70	83.3	0.66	62.84	1.77
2.91	51.11	0.64	1.36	32.90	52.50	81.5	0.63	56.23	1.71
erated by Resource		**0.637**	**1.354**	**32.583**	**52.239**	**81.098**	**0.626**	**55.520**	**1.704**
erated by Resource		**0.636**	**1.349**	**32.351**	**52.047**	**80.803**	**0.623**	**55.000**	**1.699**
2.96	49.05	0.62	1.31	30.38	50.42	78.3	0.60	50.58	1.66
3.01	44.98	0.62	1.26	28.03	46.34	71.9	0.60	46.79	1.67
3.06	43.23	0.60	1.21	25.82	44.57	69.2	0.58	41.89	1.62
3.11	41.48	0.57	1.16	23.71	42.81	66.4	0.55	37.31	1.57
3.16	40.19	0.54	1.11	21.67	41.51	64.4	0.52	32.79	1.51
4.16	2.99	0.05	0.11	0.16	3.07	4.8	0.05	0.05	0.32
4.21	1.54	0.03	0.06	0.04	1.57	2.4	0.03	0.01	0.22

FIGURE 1
Roaring Fork River - 0.5 Miles Above Basalt
Stream Improvement From Stapleton Brothers Ditch Historical Consumptive Use Credit









valuate Instream Flow Right Acquisition with espect to Fisheries Habitat

Historical Consumptive Use Reach (Reach 3)

- Point of return on Roaring Fork to Fryingpan River

Monthly pro-rata Historical Consumptive Use Flows available only from May 1st to October 31st

Historical Daily Stream Flow at the Roaring Fork River below Maroon Creek gage (ROABMCCO), 1989 - 2008

ll the Historical Consumptive Use Flow from apleton Brothers Ditch Right Provide Sufficient provement, to a Reasonable Degree, to Fish Habitat?

Approached question using 3 lines of evidence

- Historical flow conditions
- R2-Cross information for Reach 3
  - Riffle transect ½ mile above Basalt
- Seasonal timing of additional water if new water is available

istorical Flow Conditions
pper Roaring Fork River below Maroon Creek

Use a “Best-case” scenario for beneficial change

- Minimum daily flow for each month (May-Oct)
- Similar to other calculations, including CDOW

Flow	May	June	July	August	September	October
Minimum Daily Flow (cfs)	123	182	97	64	62	109
Historic C.U. (cfs)	0.25	0.47	0.52	0.39	0.27	0.05
Return Flow as Percentage	0.20%	0.26%	0.54%	0.61%	0.44%	0.05%

Even during extreme drought conditions, a less than 1% change in the lowest observed flow will not provide a reasonable benefit to fish habitat.

Typical (50^{th} Percentile) minimum flows range from 147 cfs to 552 cfs which makes SBD even more inconsequential.

2-Cross in Reach 3

Evaluates hydraulic conditions necessary to support fish passage across typical riffle habitat in Roaring Fork River

- Average water depth
- Average water velocity
- Percent total wetted perimeter width

A change from 55 cfs to 55.52 cfs would result in no change in 2 of the 3 hydraulic parameters.

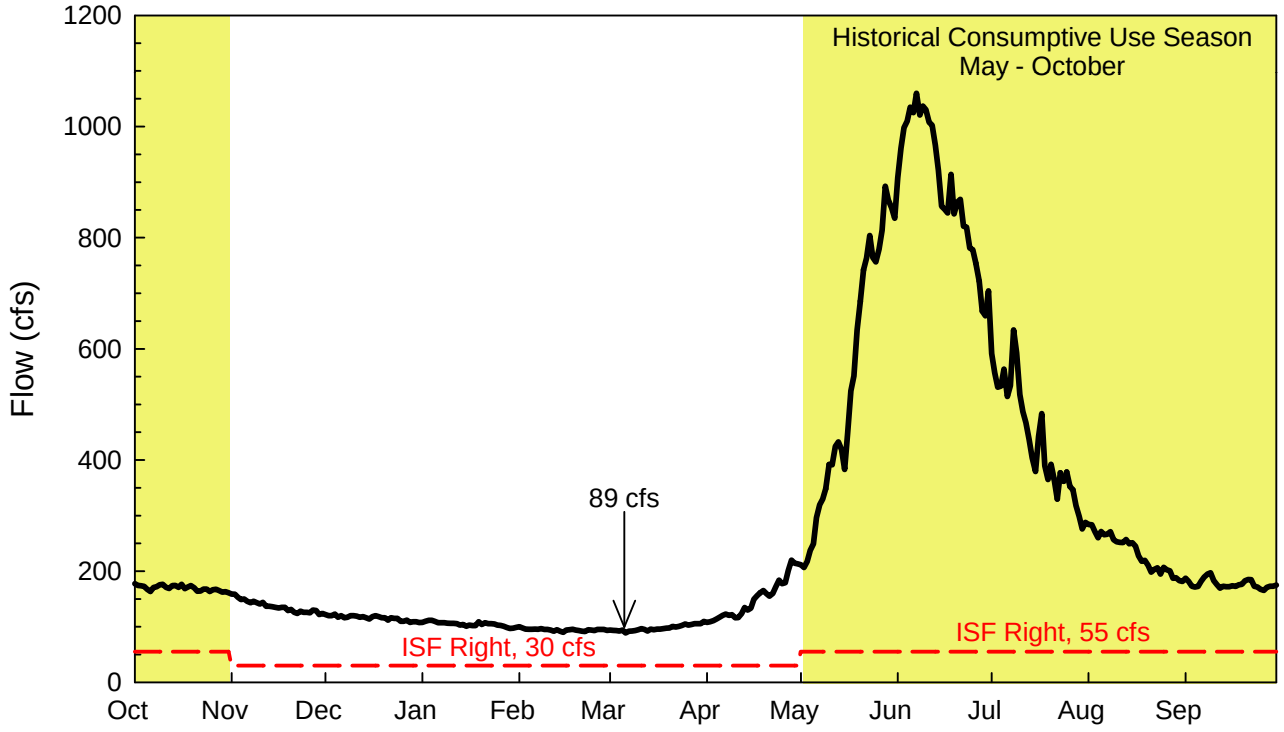
Only the percent total wetted perimeter width showed a mathematical change, representing a widening of ~2 inches in a stream that is over 50 ft wide.

No measurable benefit to the fish habitat will result.

easonal Timing of Adding New Water to the ypical Hydrograph (50th Percentile)

Winter baseflow season is often more important than seasonally high flows in summer.

SBD occurs when flows are normally moderate to high.



ow Much Flow is Needed to Show a Change Hydraulic Criteria in Reach 3?

10% change in hydraulic criterion is commonly used to evaluate changes in fish habitat.

Reference flow of 89 cfs (typical winter low flow)

- 10 % increase in average water depth equates to a 15 cfs increase from 89 cfs

Reference flow of 55 cfs (ISF)

- 10 % increase in average water depth equates to a 12 cfs increase from 55 cfs

At least 20 cfs is needed to change average water velocity and % of total wetted perimeter width for either reference flow.

EI Summary

A potential maximum addition (even new flow) of 0.52 cfs in July represents less than a 1% change during extreme drought conditions.

These *diminimus* changes in flow are not measurable by R2CROSS methodology or even by other methodologies.

No benefit in fish habitat would occur.

In Reach 3, an additional 12 to 15 cfs would probably be needed to show a beneficial change in fish habitat.

Summary of Concerns

1. ***New water to the stream?*** Most SBD water rights in this case were removed from irrigation 37 years ago. Action by CWCB will not result in new water added to the river.

2. ***Changed stream condition, potential for injury.*** Stacking agricultural rights on top of ISF changes historic water rights administration. This was not a condition on the river when the BWCD decreed and/or applied for its various exchanges.

3. ***Elimination of HUP protection.*** Instream flow use is not a preferred use under Senate Document 80. Not protected by Green Mountain releases. Less storage release to Blue River and Colorado River above Shoshone.

4. ***Out of Priority in Mid Summer.*** Without HUP protection, water right will be called out by Cameo demand in mid-July through October. Will also require requantification of historical use credits, including delayed irrigation return flows, per current DEO policy.

5. ***Dependable Water Rights?*** Marketing of CU credits to others to preserve domestic and irrigation protections. The SBD donation can be terminated by county in 10 years. Therefore, this is an unreliable & unmarketable water supply. Competes with reliable, reasonable priced water from Ruedi & Wolford Mountain.

6. ***Minimal Benefits.*** 4.3 cfs diversion amount may be reduced to 1.47 cfs. Even if 0.52 cfs were added to the lower Roaring Fork River exchange reach, there is no measurable increase in stream velocity or stream depth.

7. ***Minimal Benefits at What Cost?*** Allocation of scarce CWCB staff resources and cost for contested change cases, including attendant costs to BWCD and SMD to defend against it.

I. Practical Solutions for HB 08-1280, Let's Work Together

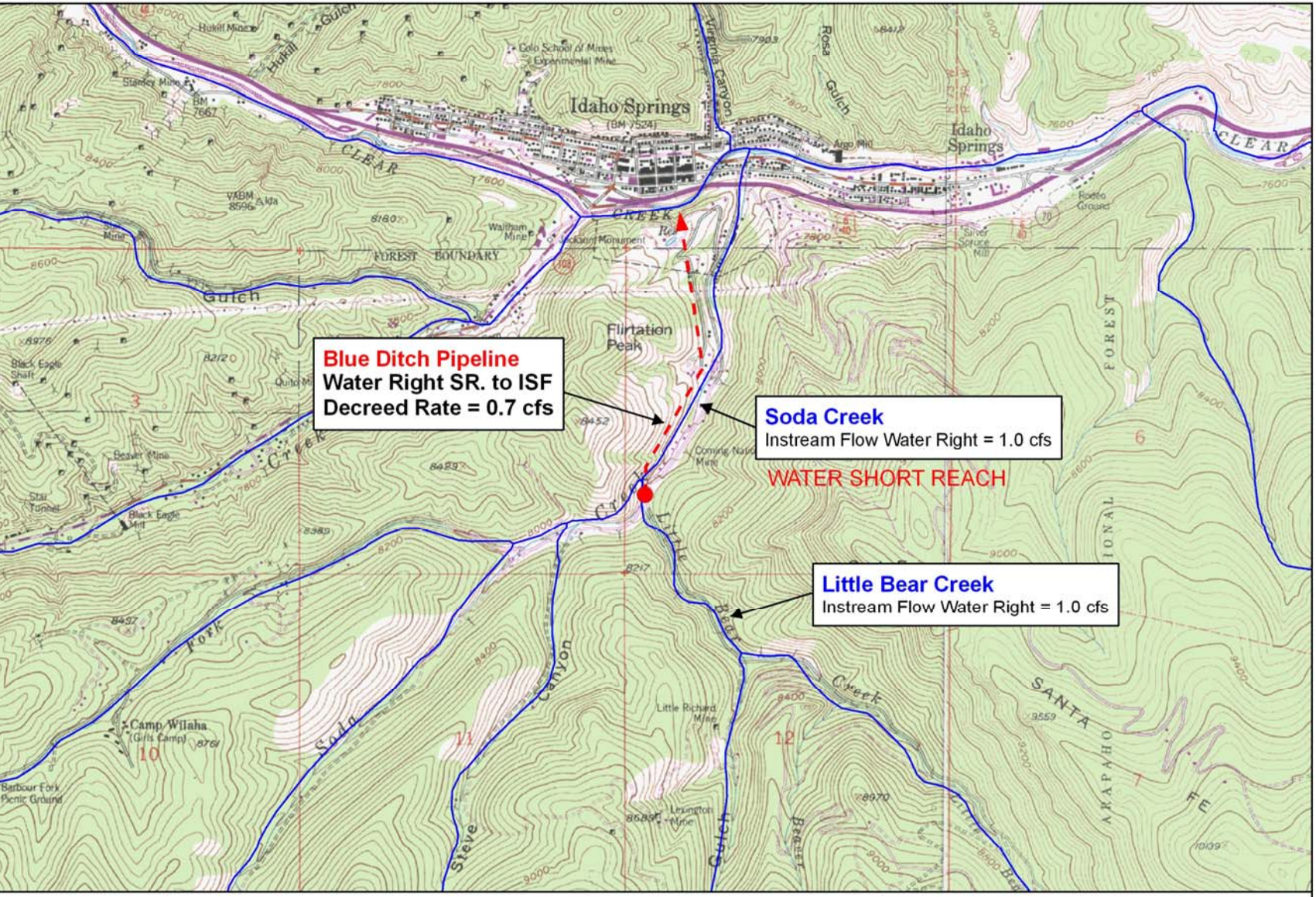
Be selective, not all water rights are suitable for acquisition.

If a water right has been retired for a extended period (+3 years), particularly if it was retired prior to the ISF right, use the water right for preservation within the ISF. No stacking.

- Will protect water right in the context of interstate compacts.
- Will support the maximum utilization of the waters of Colorado.
- Will prevent the right that the ISF depends upon currently from being removed for other use.

Stacking a water right to improve the natural environment should be limited to instances where an acquisition and change in operation will actually improve the natural environment (i.e. water is added to the river with tangible benefit).

Give preference to those water rights in basins where the ISF is often in deficit. One example, which staff is familiar with, is Soda Creek near Idaho Springs.



Example of a Water Rights Acquisition that Could Preserve or Improve the Natural Environment to a Reasonable Degree

Date: 11-12-2009

I. Practical Solutions for HB 08-1280, Let's Work Together (Continued)

Give preference to water rights senior to downstream calls, particularly the Cameo call. Eliminates HUP issues.

Give preference to water rights permanently donated to the CWCB or at least a 25 year term lease agreement.