DRAFT RECOMMENDATION LETTER – SUBJECT TO CHANGE

Mr. Rob Viehl
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

Dear Mr Viehl:

The Bureau of Land Management (BLM) is writing this letter to formally communicate its recommendation for an increase of an existing instream flow water right on Van Boxel Creek, located in Water Division 4.

Location and Land Status. Van Boxel Creek originates on High Mesa, approximately 10 miles south of Morrow Point Reservoir. The subject of this recommendation is a reach that begins at the headwaters and extends to the confluence with the Little Cimarron River, a distance of approximately 6.5 miles. The BLM manages approximately 3.2 miles of this reach, the U.S. Forest Service manages 2.0 miles, and 1.3 miles are in private ownership.

Existing Instream Flow Water Rights. The Colorado Water Conservation Board appropriated an instream flow water right on the Little Cimarron River in 1976. The water right extends from the headwaters to the confluence with the Little Cimarron River. The instream flow water right is for 2.0 cfs, year-round.

Biological Summary. Overall**,** Van Boxel Creek is a cold-water, high gradient stream. It starts out as a low gradient stream on the top of High Mesa, and then transitions rapidly into a high gradient stream that flow through a narrow canyon. The lower portions of the creek have large substrate, consisting of mostly of small cobbles and boulders of up to two feet in size. The stream has limited riffle habitat because of the high gradient, but it has a good supply of woody debris that provides an abundance of pool habitat.

Fishery surveys have revealed a self-sustaining population of brook trout. Intensive macro-invertebrate surveys have not been conducted, but spot samples have revealed various species of mayfly, caddisfly, and stonefly.

The riparian community is generally comprised of blue spruce, alder and willow species. The riparian community is in very good condition and provides abundant shading and cover for fish habitat.

R2Cross Analysis. The BLM collected the following R2Cross data from Van Boxel Creek:

Cross Section Date	Discharge Rate	Top Width	Winter Flow Recommendation (meets 2 of 3 hydraulic criteria)	Summer Flow Recommendation (meets 3 of 3 hydraulic criteria)
06/07/2021 #1	11.30 cfs	31.71 feet	Out of range	8.71 cfs
06/07/2021 #2	11.76 cfs	35.16 feet	Out of range	12.86 cfs
		Averages:	None	10.79 cfs

BLM's analysis of this data indicates that the following flows are needed to protect the fishery and natural environment to a reasonable degree.

> 10.80 cubic feet per second is recommended during warm weather period from April 15 to July 31. Protecting this flow rate would require an increase of 8.80 cfs to the existing instream flow water right. This recommendation is driven by the wetted perimeter criteria. It is important to protect a flow rate that makes most habitat possible available to the fish population while they are completing critical life history functions during the warm weather months,
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> 4.0 cubic feet per second is recommended from August 1 to October 31. This recommendation is driven by limited water availability. Protecting this flow rate would require an increase of 2.0 cfs to the existing instream flow water right. This flow rate will provide a transitional flow rate for the fish community between the higher flows during the warmer part of the year and low base flows during winter, allowing the population to adjust to gradually reduced physical habitat. This flow rate will also provide ample pool habitat, where the fish population resides during much of warm portion of the year.
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> 2.0 cubic feet per second is recommended during cold weather period from November 1 to April 14 because of limited water availability. Protecting this flow rate would require no change to the existing instream flow water right.

Rationale for Instream Flow Increase. BLM believes an instream flow increase for Van Boxel Creek is warranted because of physical habitat characteristics. The R2Cross data clearly indicates that the current instream flow water right does not provide sufficient physical habitat during the warm weather portions of the year when the fish populations are feeding, growing, and spawning. When the existing instream flow rights are applied to the cross sections that were collected, the stream would exhibit between 20% and 22% wetted perimeter, so a large portion of the potential habitat is not available. During the warm weather season, the fish population needs to have access to as much of the stream channel as possible for feeding, resting, and spawning if it is to survive the pronounced cold winters in this location.

Water Availability. The BLM recommends relying upon two sources of data for water availability analysis. A basin apportionment analysis could be performed on USGS Gage

09126000 (Cimarron River near Cimarron, CO) to derive flow rates for this stream reach. In addition, Streamstats should be consulted because it provides similar estimates of flows.

The BLM is aware of the following water right within the instream flow reach:

Ramsey Hydro Pipeline – 0.68 cfs absolute; 2.32 cfs conditional.

Relationship to Land Management Plans. BLM's land use plan calls for Van Boxel Creek to be managed to maintain, restore, or improve riparian conditions, such that proper functioning conditions are achieved. It also specifies that instream flow appropriations will be pursued on fishery streams to ensure sufficient flows rates for fisheries protection. Appropriation of an instream flow water right would assist BLM in long-term management of outstanding riparian values and important fishery values.

Data sheets, R2Cross output, fishery survey information, and photographs of the cross section were included with BLM's draft recommendation in February 2022. BLM thanks both Colorado Parks and Wildlife and the Colorado Water Conservation Board for their cooperation in this effort.

If you have any questions regarding our instream flow recommendation, please contact Roy Smith at 303-239-3940.

Sincerely,

Alan Bittner
Deputy State Director
Resources and Fire

Cc: Field Manager, Gunnison Field Office
Stephanie Connolly, Southwest District Office
Andrew Breibart, Gunnison Field Office