Stream: Huerfano River (Lower Segment)

Executive Summary

Water Division: 2
Water District: 79
CDOW#: 30130
CWCB ID: 09/2/A-004

Segment: Confluence with Unnamed Tributary to the Confluence with Stanley Creek

Upper Terminus: CONFLUENCE WITH UNNAMED TRIBUTARY
(Latitude 37° 41’ 2.04”N) (Longitude 105° 24’ 8.54”W)

Lower Terminus: CONFLUENCE WITH STANLEY CREEK
(Latitude 37° 42’ 33.49”N) (Longitude 105° 22’ 16.12”W)

Watershed: Huerfano (HUC#: 11020006)
Counties: Huerfano
Length: 2.6 miles
USGS Quad(s): Mosca Pass
Flow Recommendation: 5.75 cfs (April 1 to October 31)
2.75 cfs (November 1 to March 31)

Staff Analysis and Recommendation

Summary

The information contained in this report and the associated instream flow file folder forms the basis for staff's instream flow recommendation to be considered by the Board. It is staff's opinion that the information contained in this report is sufficient to support the findings required in Rule 5.40.

Colorado's Instream Flow Program was created in 1973 when the Colorado State Legislature recognized "the need to correlate the activities of mankind with some reasonable preservation of the natural environment" (see 37-92-102 (3) C.R.S.). The statute vests the CWCB with the exclusive authority to appropriate and acquire instream flow and natural lake level water rights. In order to encourage other entities to participate in Colorado's Instream Flow Program, the statute directs the CWCB to request instream flow recommendations from other state and federal agencies. The Colorado Division of Wildlife (CDOW) recommended this segment of the Huerfano River to the CWCB for inclusion into the Instream Flow Program. Huerfano River is being considered for inclusion into the Instream Flow Program because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right.

This segment of the Huerfano River is approximately 2.6 miles long. It begins at the confluence of an unnamed tributary at an elevation of approximately 8,875 feet and terminates at the confluence with Stanley Creek at an elevation of approximately 8,450 feet. Of the 2.6-mile segment addressed by this report, approximately 85% of the segment is located on public lands. Huerfano River is located within Huerfano County. The total drainage area of this segment of the Huerfano River is approximately 55 square miles. Huerfano River generally flows in a northeasterly direction.

The subject of this report is a segment of the Huerfano River beginning at the confluence of an unnamed tributary and extending downstream to confluence with the Stanley Creek. The proposed segment is located near the Town of Redwing. The staff has received only one recommendation for this segment, from the CDOW. The recommendation for this segment is discussed below.

Instream Flow Recommendation(s)

The CDOW is recommending 5.75 cfs (April 1 to October 31), and 2.75 cfs (November 1 to March 31), based on their data collection efforts.

Land Status Review

Upper Terminus	Lower Terminus	Total Length (miles)	Land Ownership	
			% Private	% Public
Confluence with Unnamed Tributary	Confluence with Stanley Creek	2.6	15%	85%

93% of the public lands are State Wildlife area and 7% of the lands are BLM.

Biological Data

The CDOW, in 2006 & 2007, collected stream cross-section information, natural environment data, and other data needed to quantify the instream flow needs for this reach of Huerfano River. Huerfano River is classified as a medium stream (between 20 to 35 feet wide) and surveys indicate the stream environment of Huerfano River supports populations of brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*). These species inhabit cold water streams and lakes with adequate stream spawning habitat present in the fall of the year.

Field Survey Data

CDOW staff used the R2Cross methodology to quantify the amount of water required to preserve the natural environment to a reasonable degree. The R2Cross method requires that stream discharge and channel profile data be collected in a riffle stream habitat type. Riffles are most easily visualized, as the stream habitat types that would dry up first should streamflow cease. This type of hydraulic data collection consists of setting up a transect, surveying the stream channel geometry, and measuring the stream discharge.

Biological Flow Recommendation

The CWCB staff relied upon the biological expertise of the cooperating agencies to interpret output from the R2Cross data collected to develop the initial, biologic instream flow recommendation. This initial recommendation is designed to address the unique biologic requirements of each stream without regard to water availability. Three instream flow hydraulic parameters, average depth, percent wetted perimeter, and average velocity are used to develop biologic instream flow recommendations. The CDOW has determined that maintaining these three hydraulic parameters at adequate levels across riffle habitat types, aquatic habitat in pools and runs will also be maintained for most life stages of fish and aquatic invertebrates (Nehring 1979; Espegren 1996).

For this segment of stream, four data sets were collected with the results shown in Table 1 below. Table 1 shows who collected the data (Party), the date the data was collected (Date), the measured discharge at the time of the survey (Q), the accuracy range of the predicted flows based on Manning's Equation (240% and 40% of Q), the summer flow recommendation based on meeting 3 of 3 hydraulic criteria and the winter flow recommendation based upon 2 of 3 hydraulic criteria.

Table 1: Data

Party	Date	Q	250%-40%	Summer (3/3)	Winter (2/3)
CDOW	7/19/2006	14.6	36.6 – 5.9	3.1^{OR}	2.1^{OR}
CDOW	7/19/2006	13.2	33.1 – 5.3	5.5	2.7^{OR}
CDOW	8/22/2007	30.1	75.2 – 12.0	5.5^{OR}	3.8^{OR}
CDOW	8/22/2007	26.0	65.1 – 10.4	2.3^{OR}	2.3^{OR}
CDOW	11/25/2008	10.9	27.2 – 4.4	6.0	3.0^{OR}

CDOW = Division of Wildlife OR= Outside of the R2X Accuracy Range

The summer flow recommendation, which met 3 of 3 criteria and was within the accuracy range of the R2CROSS ranged from 6.0 cfs to 5.5 cfs. The flow recommendation of 5.75 cfs was derived by averaging the results of the two data sets. The winter flow recommendation, which met 2 of 3 criteria were all outside of the accuracy of the R2CROSS model. However, averaging all of the winter flow recommendations would result in a 2.75 cfs recommendation. In addition, comparing this value (2.75 cfs) to the "within range" value requested for the upstream segment of the Huerfano River (Lilly Lake to Central Branch Huerfano River segment) of 2.7 cfs, supports this wintertime recommendation.

Hydrologic Data and Analysis

After receiving the cooperating agency's biologic recommendation, the CWCB staff conducted an evaluation of the stream hydrology to determine if water was physically available for an instream flow appropriation. This evaluation was done through a computation that is, in essence, a "water balance". In concept a "water balance" computation can be viewed as an accounting exercise. When done in its most rigorous form, the water balance parses precipitation into all the avenues water pursues after it is deposited as rain, snow, or ice. In other words, given a specified amount of water deposition (input), the balance tries to account for all water depletions (losses) until a selected end point is reached. Water losses include depletions due to evaporation and transpiration, deliveries into ground water storage, temporary surface storage, incorporations into plant and animal tissue and so forth. These losses are individually or collectively subtracted from the input to reveal the net amount of stream runoff as represented by the discharge measured by stream gages. Of course, the measured stream flow need not be the end point of interest; indeed, when looking at issues of water use to extinction stream flow measurements may only describe intermediate steps in the complex accounting process that is a water balance carried out to a net value of zero.

In its analysis, CWCB staff has attempted to use this idea of balancing inputs and losses to determine if water is available for the recommended Instream Flow Appropriation. Of course, this analysis must be a practical exercise rather than a lengthy, and costly, scientific investigation. As a result, staff has simplified the process by lumping together some variables and employing certain rational and scientifically supportable assumptions. The process may be described through the following description of the steps used to complete the evaluation for this particular stream.

The first step required in determining water availability is a determination of the hydrologic regime at the Lower Terminus (LT) of the recommended ISF reach. In the best case this means looking at the data from a gage at the LT. Further, this data, in the best case, has been collected for a long period of time (the longer the better) including wet and dry periods. In the case of **Lower Huerfano River** there is a USGS gage record of discharge on the stream. However, the gage station is downstream from the LT. The USGS gage is HUERFANO R AT MANZANARES XING, NR REDWING, CO (USGS 07111000); it has a period of record (POR) of 58 years collected between 1923 and 1982. The gage is at an elevation of 8,270 ft above mean sea level (amsl) and has a drainage area of 73.0 mi^2. The hydrograph (plot of discharge over time) produced from this gage includes the consumptive uses of numerous diversions. However, the existence of these diversions does not preclude use of the data from the gage. To make the measured data transferable to Lower Huerfano River above the LT, the

consumptive portions of these diversions were added back to the measured hydrograph. The resulting "adjusted" hydrograph could then be used on Lower Huerfano River above the LT by multiplying the "adjusted" gage discharge values by an area ratio; specifically, the area of Lower Huerfano River above the LT (38.81 mi^2) to Huerfano River at Manzanares Crossing near Redwing, CO (73.0 mi^2). Next, the resulting proportioned "adjusted" hydrograph was itself "adjusted" (decreased) to reflect the numerous existing consumptive irrigation depletions on Lower Huerfano River upstream of the LT. The final hydrograph thus represents a distribution of flow over time that has been reduced to reflect existing human uses.

{The Following discussion is based upon the US Geological Survey's *Techniques of Water-Resources Investigations* Series, *Book 4: Hydrologic Analysis and Interpretation, Chapter A3: Statistical Methods in Water Resources* (Chapter 3: Describing Uncertainty) by D.R. Helsel and R. M. Hirsch. This technical reference provides the scientific background and guidance important to the systematic interpretation of hydrologic data. The document is available online and is a valuable aid to understanding and interpreting the analyses described here.}

The next step in producing a representation of the discharge at Lower Huerfano River is to compute the Geometric Mean of the area-prorated "adjusted" data values from the Huerfano River at Manzanares Crossing near Redwing hydrograph. This step is of value because of the inherent statistical weaknesses found in any collection of data intended to measure natural stream discharge. Without getting into the details of statistical theory, it is worth noting that a set of discharge measurements is inherently inaccurate, no matter how well collected, due to the difficulties attendant to data collection, especially hydrologic data. To give deference to this fact and to increase the value of the hydrograph product of this analysis, the Geometric Means of the data were computed and plotted along with the 95% Confidence Intervals about the data. The resultant hydrograph, including recommended Instream Flow values, is displayed in figure 1 with an enlargement displayed in figure 2. The data displayed by this hydrograph follow in Table 1.

Fig. 1. Geometric Mean Daily Discharge Lower Huerfano R. abv LT (proportioned on Huerfano R. at Manzaneres-adj for irr), Adjusted for Irr, & ISFs

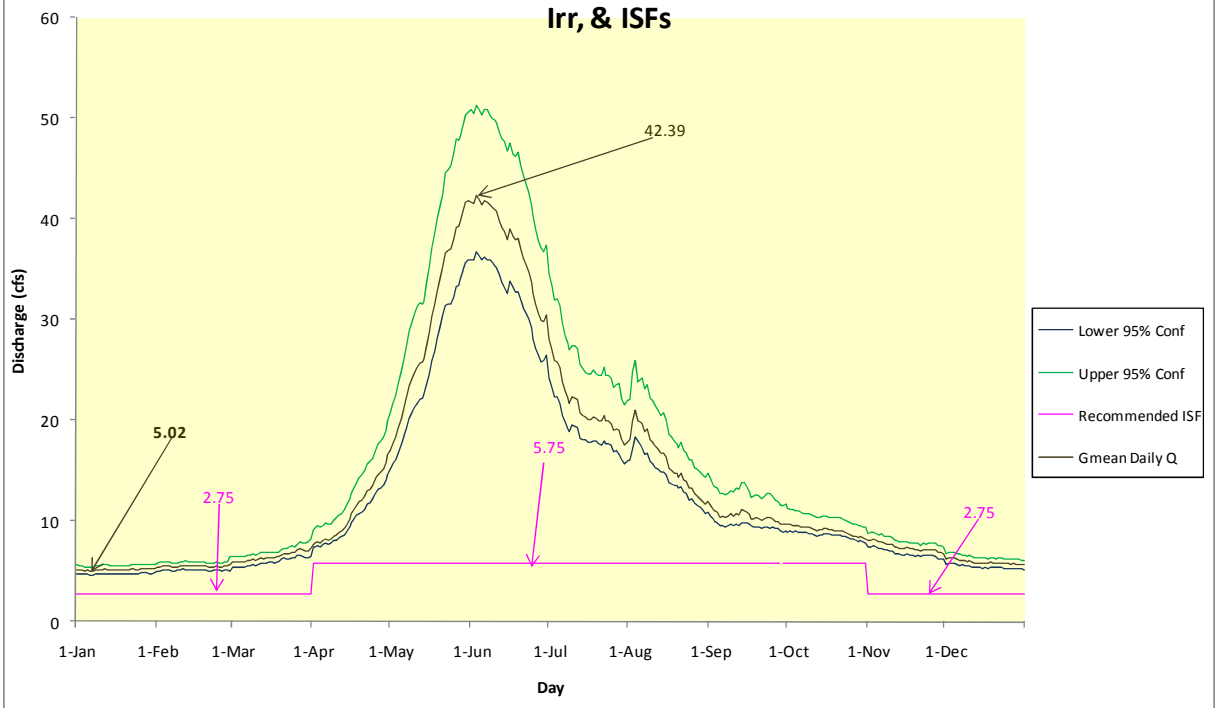


Fig. 2. Geometric Mean Daily Discharge Lower Huerfano R. abv LT (proportioned on Huerfano R. at Manzaneres-adj for irr), Adjusted for Irr, & ISFs

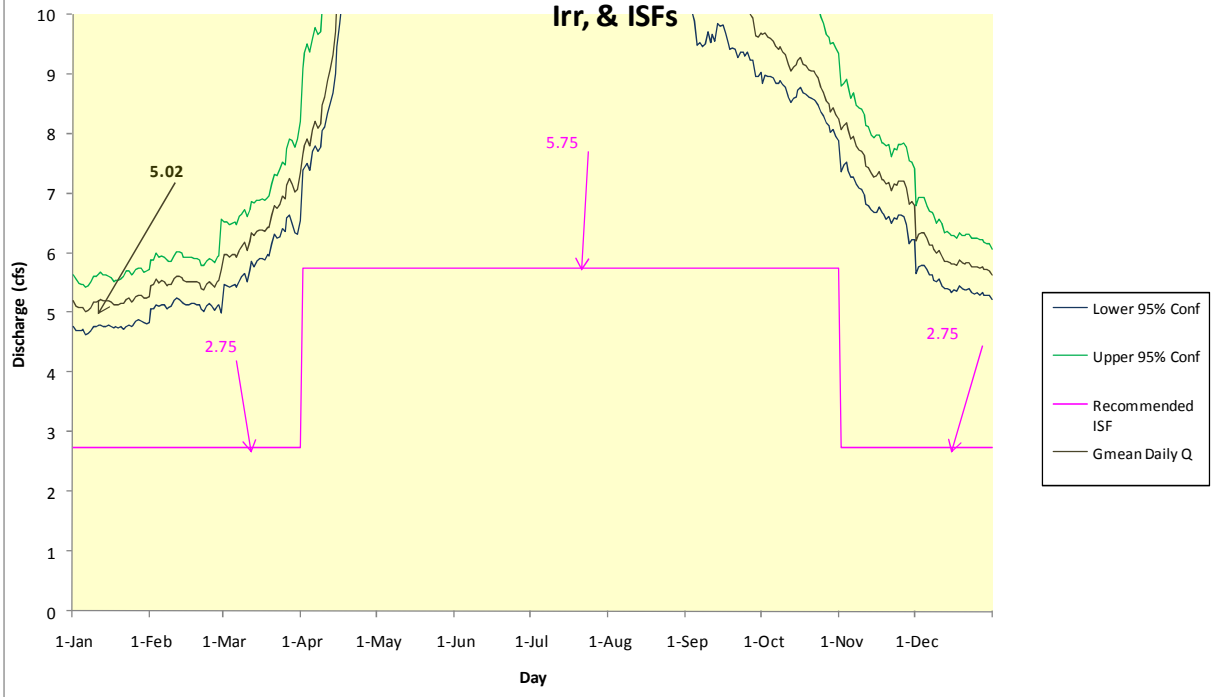


Table 1. Geometric Mean Discharge and Recommended Instream Flows		
Date	Recommended ISF	Proportioned Adjusted GM (abv gage) Adj (-) for Irr & OoB in Lower Huerfano R abv LT
1-Jan	1.5	5.19
2-Jan	1.5	5.11
3-Jan	1.5	5.09
4-Jan	1.5	5.07
5-Jan	1.5	5.08
6-Jan	1.5	5.02
7-Jan	1.5	5.03
8-Jan	1.5	5.09
9-Jan	1.5	5.17
10-Jan	1.5	5.18
11-Jan	1.5	5.20
12-Jan	1.5	5.22
13-Jan	1.5	5.19
14-Jan	1.5	5.19
15-Jan	1.5	5.19
16-Jan	1.5	5.17
17-Jan	1.5	5.13
18-Jan	1.5	5.13
19-Jan	1.5	5.13
20-Jan	1.5	5.15
21-Jan	1.5	5.15
22-Jan	1.5	5.22
23-Jan	1.5	5.23
24-Jan	1.5	5.18
25-Jan	1.5	5.20
26-Jan	1.5	5.27
27-Jan	1.5	5.29
28-Jan	1.5	5.29
29-Jan	1.5	5.24
30-Jan	1.5	5.25
31-Jan	1.5	5.27
1-Feb	1.5	5.45
2-Feb	1.5	5.47
3-Feb	1.5	5.55
4-Feb	1.5	5.50
5-Feb	1.5	5.54
6-Feb	1.5	5.51
7-Feb	1.5	5.46
8-Feb	1.5	5.46
9-Feb	1.5	5.47
10-Feb	1.5	5.56
11-Feb	1.5	5.62
12-Feb	1.5	5.61
13-Feb	1.5	5.57

14-Feb	1.5	5.53
15-Feb	1.5	5.51
16-Feb	1.5	5.52
17-Feb	1.5	5.53
18-Feb	1.5	5.52
19-Feb	1.5	5.51
20-Feb	1.5	5.49
21-Feb	1.5	5.41
22-Feb	1.5	5.39
23-Feb	1.5	5.47
24-Feb	1.5	5.52
25-Feb	1.5	5.48
26-Feb	1.5	5.44
27-Feb	1.5	5.51
28-Feb	1.5	5.54
29-Feb	1.5	5.73
1-Mar	1.5	5.97
2-Mar	1.5	5.97
3-Mar	1.5	5.94
4-Mar	1.5	5.96
5-Mar	1.5	5.98
6-Mar	1.5	5.93
7-Mar	1.5	6.04
8-Mar	1.5	6.11
9-Mar	1.5	6.18
10-Mar	1.5	6.04
11-Mar	1.5	6.20
12-Mar	1.5	6.34
13-Mar	1.5	6.28
14-Mar	1.5	6.36
15-Mar	1.5	6.38
16-Mar	1.5	6.39
17-Mar	1.5	6.37
18-Mar	1.5	6.44
19-Mar	1.5	6.43
20-Mar	1.5	6.64
21-Mar	1.5	6.80
22-Mar	1.5	6.75
23-Mar	1.5	6.82
24-Mar	1.5	6.95
25-Mar	1.5	6.90
26-Mar	1.5	7.14
27-Mar	1.5	7.25
28-Mar	1.5	7.17
29-Mar	1.5	7.03
30-Mar	1.5	7.07
31-Mar	1.5	7.33
1-Apr	2.7	7.67
2-Apr	2.7	7.80
3-Apr	2.7	7.92

4-Apr	2.7	7.79
5-Apr	2.7	8.07
6-Apr	2.7	8.20
7-Apr	2.7	8.10
8-Apr	2.7	8.17
9-Apr	2.7	8.47
10-Apr	2.7	8.61
11-Apr	2.7	8.89
12-Apr	2.7	9.06
13-Apr	2.7	9.31
14-Apr	2.7	9.70
15-Apr	2.7	10.22
16-Apr	2.7	10.70
17-Apr	2.7	11.12
18-Apr	2.7	11.61
19-Apr	2.7	11.95
20-Apr	2.7	12.07
21-Apr	2.7	12.44
22-Apr	2.7	13.00
23-Apr	2.7	13.15
24-Apr	2.7	13.57
25-Apr	2.7	14.19
26-Apr	2.7	14.67
27-Apr	2.7	14.86
28-Apr	2.7	15.21
29-Apr	2.7	15.85
30-Apr	2.7	16.57
1-May	4.1	17.04
2-May	4.1	17.74
3-May	4.1	18.33
4-May	4.1	19.28
5-May	4.1	20.15
6-May	4.1	21.12
7-May	4.1	22.17
8-May	4.1	23.43
9-May	4.1	24.07
10-May	4.1	24.83
11-May	4.1	25.32
12-May	4.1	25.76
13-May	4.1	25.82
14-May	4.1	26.15
15-May	4.1	27.48
16-May	4.1	28.77
17-May	4.1	30.31
18-May	4.1	31.52
19-May	4.1	32.88
20-May	4.1	34.05
21-May	4.1	35.25
22-May	4.1	36.68
23-May	4.1	36.91

24-May	4.1	37.08
25-May	4.1	37.93
26-May	4.1	39.23
27-May	4.1	39.27
28-May	4.1	39.81
29-May	4.1	40.79
30-May	4.1	41.68
31-May	4.1	41.91
1-Jun	4.1	41.76
2-Jun	4.1	41.57
3-Jun	4.1	42.39
4-Jun	4.1	42.01
5-Jun	4.1	41.48
6-Jun	4.1	41.91
7-Jun	4.1	41.74
8-Jun	4.1	41.49
9-Jun	4.1	41.14
10-Jun	4.1	40.91
11-Jun	4.1	40.72
12-Jun	4.1	39.91
13-Jun	4.1	39.19
14-Jun	4.1	38.73
15-Jun	4.1	38.03
16-Jun	4.1	39.08
17-Jun	4.1	38.33
18-Jun	4.1	37.93
19-Jun	4.1	38.06
20-Jun	4.1	37.04
21-Jun	4.1	36.18
22-Jun	4.1	35.40
23-Jun	4.1	34.78
24-Jun	4.1	33.66
25-Jun	4.1	32.65
26-Jun	4.1	31.56
27-Jun	4.1	30.68
28-Jun	4.1	29.93
29-Jun	4.1	29.86
30-Jun	4.1	30.50
1-Jul	4.1	28.05
2-Jul	4.1	27.06
3-Jul	4.1	25.91
4-Jul	4.1	25.88
5-Jul	4.1	25.28
6-Jul	4.1	23.81
7-Jul	4.1	22.90
8-Jul	4.1	22.19
9-Jul	4.1	21.75
10-Jul	4.1	22.34
11-Jul	4.1	22.23
12-Jul	4.1	22.07

13-Jul	4.1	20.76
14-Jul	4.1	20.52
15-Jul	4.1	20.35
16-Jul	4.1	20.10
17-Jul	4.1	20.15
18-Jul	4.1	20.41
19-Jul	4.1	20.19
20-Jul	4.1	19.95
21-Jul	4.1	19.93
22-Jul	4.1	20.47
23-Jul	4.1	19.95
24-Jul	4.1	19.99
25-Jul	4.1	19.76
26-Jul	4.1	19.01
27-Jul	4.1	19.19
28-Jul	4.1	19.00
29-Jul	4.1	18.05
30-Jul	4.1	17.59
31-Jul	4.1	17.83
1-Aug	4.1	18.06
2-Aug	4.1	19.93
3-Aug	4.1	21.04
4-Aug	4.1	19.94
5-Aug	4.1	19.80
6-Aug	4.1	19.74
7-Aug	4.1	18.84
8-Aug	4.1	19.14
9-Aug	4.1	18.04
10-Aug	4.1	17.78
11-Aug	4.1	17.37
12-Aug	4.1	17.12
13-Aug	4.1	16.70
14-Aug	4.1	16.82
15-Aug	4.1	16.41
16-Aug	4.1	15.32
17-Aug	4.1	15.07
18-Aug	4.1	14.82
19-Aug	4.1	14.77
20-Aug	4.1	14.40
21-Aug	4.1	14.79
22-Aug	4.1	14.13
23-Aug	4.1	13.90
24-Aug	4.1	13.25
25-Aug	4.1	13.26
26-Aug	4.1	12.69
27-Aug	4.1	12.51
28-Aug	4.1	12.27
29-Aug	4.1	12.00
30-Aug	4.1	11.72
31-Aug	4.1	11.92

1-Sep	2.5	11.59
2-Sep	2.5	11.18
3-Sep	2.5	10.99
4-Sep	2.5	10.89
5-Sep	2.5	10.40
6-Sep	2.5	10.46
7-Sep	2.5	10.38
8-Sep	2.5	10.44
9-Sep	2.5	10.69
10-Sep	2.5	10.50
11-Sep	2.5	10.76
12-Sep	2.5	10.61
13-Sep	2.5	11.11
14-Sep	2.5	11.04
15-Sep	2.5	10.92
16-Sep	2.5	10.58
17-Sep	2.5	10.27
18-Sep	2.5	10.27
19-Sep	2.5	10.33
20-Sep	2.5	10.27
21-Sep	2.5	10.09
22-Sep	2.5	10.24
23-Sep	2.5	10.37
24-Sep	2.5	10.35
25-Sep	2.5	10.26
26-Sep	2.5	10.02
27-Sep	2.5	9.93
28-Sep	2.5	9.63
29-Sep	2.5	9.62
30-Sep	2.5	9.69
1-Oct	2.5	9.66
2-Oct	2.5	9.68
3-Oct	2.5	9.62
4-Oct	2.5	9.60
5-Oct	2.5	9.55
6-Oct	2.5	9.46
7-Oct	2.5	9.41
8-Oct	2.5	9.45
9-Oct	2.5	9.36
10-Oct	2.5	9.33
11-Oct	2.5	9.16
12-Oct	2.5	9.05
13-Oct	2.5	9.12
14-Oct	2.5	9.16
15-Oct	2.5	9.24
16-Oct	2.5	9.27
17-Oct	2.5	9.17
18-Oct	2.5	9.14
19-Oct	2.5	9.08
20-Oct	2.5	9.05

21-Oct	2.5	9.05
22-Oct	2.5	9.01
23-Oct	2.5	8.92
24-Oct	2.5	8.78
25-Oct	2.5	8.68
26-Oct	2.5	8.55
27-Oct	2.5	8.50
28-Oct	2.5	8.38
29-Oct	2.5	8.42
30-Oct	2.5	8.31
31-Oct	2.5	8.24
1-Nov	1.5	8.06
2-Nov	1.5	8.14
3-Nov	1.5	8.19
4-Nov	1.5	8.06
5-Nov	1.5	7.91
6-Nov	1.5	7.96
7-Nov	1.5	7.80
8-Nov	1.5	7.74
9-Nov	1.5	7.71
10-Nov	1.5	7.63
11-Nov	1.5	7.45
12-Nov	1.5	7.43
13-Nov	1.5	7.33
14-Nov	1.5	7.28
15-Nov	1.5	7.30
16-Nov	1.5	7.35
17-Nov	1.5	7.24
18-Nov	1.5	7.24
19-Nov	1.5	7.15
20-Nov	1.5	7.19
21-Nov	1.5	7.04
22-Nov	1.5	7.15
23-Nov	1.5	7.13
24-Nov	1.5	7.20
25-Nov	1.5	7.21
26-Nov	1.5	7.21
27-Nov	1.5	7.09
28-Nov	1.5	6.82
29-Nov	1.5	6.85
30-Nov	1.5	6.79
1-Dec	1.5	6.20
2-Dec	1.5	6.32
3-Dec	1.5	6.34
4-Dec	1.5	6.34
5-Dec	1.5	6.24
6-Dec	1.5	6.14
7-Dec	1.5	6.14
8-Dec	1.5	6.06
9-Dec	1.5	6.00

10-Dec	1.5	6.04
11-Dec	1.5	5.95
12-Dec	1.5	5.86
13-Dec	1.5	5.87
14-Dec	1.5	5.84
15-Dec	1.5	5.80
16-Dec	1.5	5.82
17-Dec	1.5	5.79
18-Dec	1.5	5.88
19-Dec	1.5	5.83
20-Dec	1.5	5.81
21-Dec	1.5	5.83
22-Dec	1.5	5.85
23-Dec	1.5	5.77
24-Dec	1.5	5.77
25-Dec	1.5	5.77
26-Dec	1.5	5.74
27-Dec	1.5	5.77
28-Dec	1.5	5.73
29-Dec	1.5	5.71
30-Dec	1.5	5.71
31-Dec	1.5	5.63

Existing Water Right Information

Staff has analyzed the water rights tabulation and contacted the Division Engineer Office (DEO) to identify any potential water availability problems. There are two decreed surface diversion within this reach of stream, the Magnas Ditch (2 cfs with an 1901 appropriation) and the Pathfinder Ditch (0.5 cfs with an 1880 appropriation). Staff has determined that water is available for appropriation on the Huerfano River, between the confluence with an unnamed tributary and the confluence with Stanley Creek, to preserve the natural environment to a reasonable degree without limiting or foreclosing the exercise of valid existing water rights.

CWCB Staff's Instream Flow Recommendation
Staff recommends the Board form its intent to appropriate on the following stream reach:

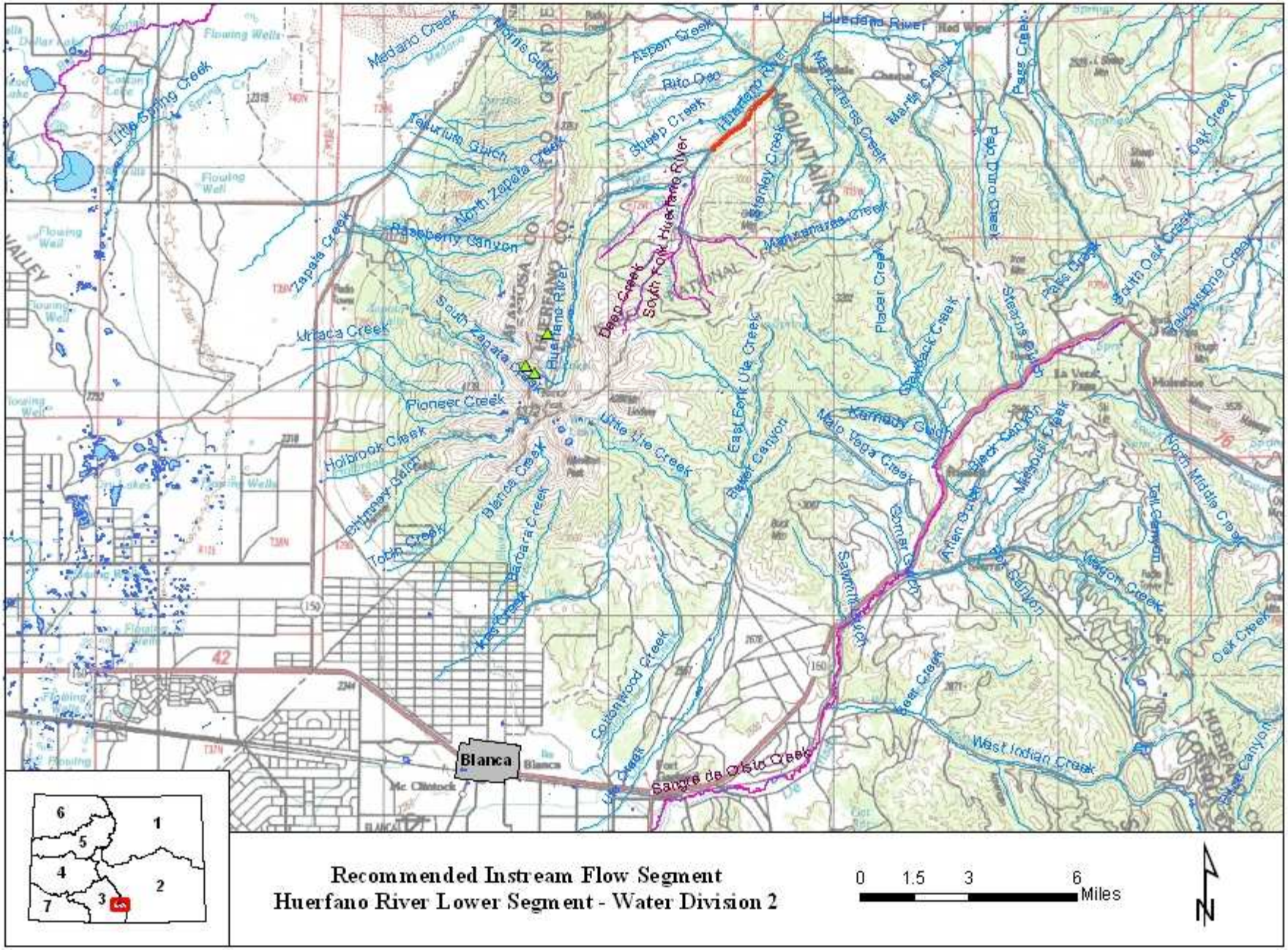
Segment: Confluence with Unnamed Tributary to the Confluence with Stanley Creek

Upper Terminus: CONFLUENCE WITH UNNAMED TRIBUTARY
(Latitude 37° 41' 2.04"N) (Longitude 105° 24' 8.54"W)
UTM North: 4170820.1 UTM East: 464521.6
NE SE S23 T27S R72W 6th PM
930' West of the East Section Line; 2041' North of the South Section Line

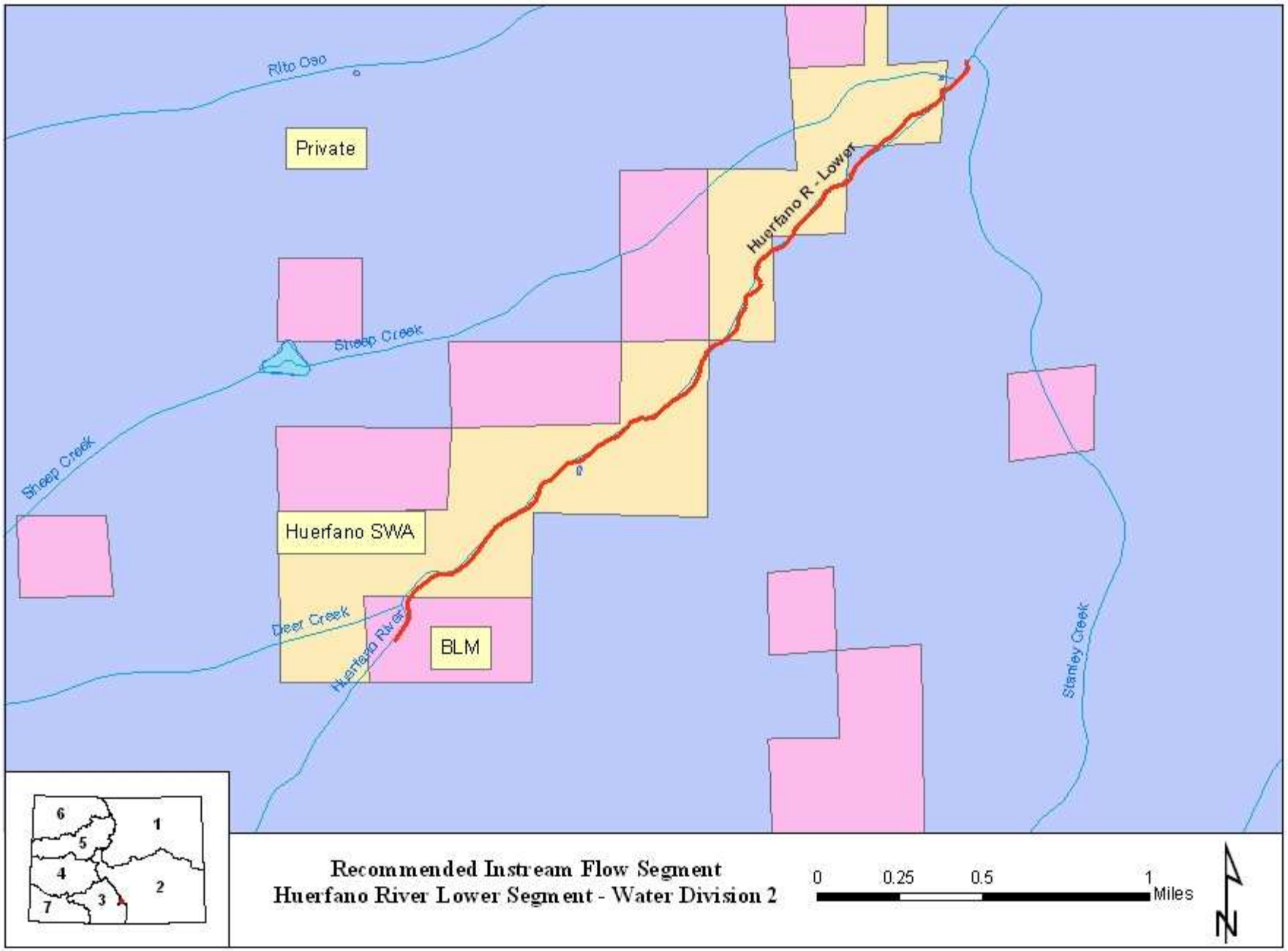
Lower Terminus: CONFLUENCE WITH STANLEY CREEK
(Latitude 37° 42' 33.49"N) (Longitude 105° 22' 16.12"W)
UTM North: 4173627.2 UTM East: 467286.3
SW SE S7 T27S R71W 6th PM
2326' West of the East Section Line; 109' North of the South Section Line

Watershed: Huerfano (HUC#: 11020006)
Counties: Huerfano
Length: 2.6 miles
USGS Quad(s): Mosca Pass
Flow Recommendation: 5.75 cfs (April 1 to October 31)
2.75 cfs (November 1 to March 31)

Vicinity Map



Land Use Map


Rito Oso
Private
Huerfano R - Lower
Sheep Creek
Sheep Creek
Huerfano SWA
Deer Creek
Huerfano River
BLM
Stanley Creek
6
1
5
4
2
7
3
Recommended Instream Flow Segment
Huerfano River Lower Segment - Water Division 2
0
0.25
0.5
1
Miles
N

Topographic & Water Rights Map