TECHNICAL MEMORANDUM

SUBJECT: **Green River Basin Plan II**
Available Surface Water Determination

DATE: January 21, 2010

PREPARED BY: Meg Frantz, AECOM

Introduction

The Green River Basin spreadsheet model is a tool for identifying flows that are available to Wyoming water users for future development, and evaluating yield and impacts of potential projects at a planning level. The purpose of this task is to analyze historical runs developed during spreadsheet calibration to determine location, quantity, and timing of available flows. The spreadsheets represent conditions in the four sub-basins (Little Snake, Henrys Fork, Blacks Fork, and Green River) under current levels of development for three hydrologic conditions: Dry, Normal, and Wet year water supply.
Background information on the spreadsheet model can be found in other technical memos prepared for this project:

- "Surface Water Data Collection and Study Period Selection" describes how historical Dry, Normal, and Wet years were determined for the purposes of the spreadsheet

- "Surface Water Spreadsheet Model Development" summarizes development of the model

Available Flow

The spreadsheet models show streamflow into and out of each node. The outflow is the estimated amount of water physically present, in excess of any diversions at the node. Whether the outflow is "available", that is, able to be diverted to a new appropriation inserted at this point in the system, depends on downstream conditions. For example, if a downstream senior irrigator is diverting the entire stream at his headgate, the water supply at the upper point is not available for future development; it is already needed to meet current requirements, and were a new appropriator to divert at the upstream location, the downstream senior's diversion would be reduced. Similarly, if there is a minimum instream flow right or requirement downstream from the diversion in question, a new appropriation could divert no more than the flow in excess of the minimum flow right, at the minimum flow right.

To determine how much of the physically present supply is actually available to future uses, "available water" at a node is defined as the minimum of the physically present flow at the node, and "available water" at all downstream nodes. It is a recursive definition: in order to know available flow at any point, one must know the available flow at all downstream points. Thus

available flow must be defined first at the most downstream point, with upstream availability calculated node-by-node, working through the system from downstream to upstream. These calculations were made on a monthly basis, and annual availability was computed as the sum of monthly availabilities. Note that calculating annual availability in this way yields a different value than applying the same logic to annual flows for each reach. The summation of monthly values is more accurate, reflecting constraints of downstream use on a monthly basis.

Instream flow right considerations

Instream flow rights exert a demand on the river but do not affect physical supply, because the water is not removed from the stream. Thus any node located within a permitted instream flow reach has to be handled specially. That is, available flow is determined as the minimum of physical flow *less the instream flow requirement at that poin*t, and "available water" at downstream nodes.

There are currently five instream flow permits within the area represented by the spreadsheet models; all of them are located in the Upper Green sub-basin model. The permits are tabulated below:

Table 1 - Instream Flow Permits Affecting Water Availability

Permit	Location	Affected Node(s)	Flow Amount(cfs)[1]
P6F	Green River from Canyon Ditch to Warren Bridge gage	1.08	101 to 350
P7F	West Fork New Fork River between Pine Creek and Pole Creek	9.12	95 to 135
P73F	North Cottonwood Creek	6.02	11.54 to 17
P74F	South Cottonwood Creek	6.04	8 to 35
P34F	Pine Creek	9.02, 9.03, 9.04, 9.06, 9.08, 9.10, 9.11	0 to 40

[1]Permitted instream flow rates vary seasonally.

Results

Table 2 shows the available supply at the downstream terminus for each sub-basin.

Table 2 - Available Flow by Sub-basin

	Dry Condition (af/yr)	Normal Condition (af/yr)	Wet Condition (af/yr)
Little Snake	177,000	407,000	642,000
Henrys Fork	24,000	52,000	118,000
Blacks Fork	67,000	195,000	398,000
Green River	595,000	1,138,000	1,806,000
Total	863,000	1,792,000	2,964,000

Available water supply is a function of timing and location, however, and the tables in Appendix A provide detail by node, on a monthly basis. The available water determination was executed in

separate spreadsheets, outside the models. The spreadsheets are named "XX-Avail by node.xls", where XX is a 2-letter abbreviation for the sub-basin (LS, HF,BF, or UG).

Compact considerations

The "Total"values in Table 2 far exceed the remaining developable allowance as limited by the Colorado River Compact and Upper Colorado River Basin Compact. "Remaining developable allowance" is a value that depends on assumptions behind the calculation of the State's entitlement under the Compact (allowance), and the estimate of current depletions.
Wyoming's allowance has been estimated variously by the State and Federal government. The Wyoming Water Development Office recently estimated Wyoming's allowance as either 947,800 or 842,800 af/yr, depending on the Upper Basin State's obligation under the Mexico Treaty.[1] Since the Upper Basin States currently maintain that they have no obligation under the Mexico Treaty, only the larger of these two numbers is shown as the Compact Allowance (WWDC Estimate) in **Table 3**. The U.S. Bureau of Reclamation calculated Wyoming's allowance as 834,400 af in its 2007 Hydrologic Determination report[2], executed in support of the Navajo-Gallup Water Supply Project as required to enable a contract for water from the Navajo Indian Irrigation Project. This value is shown as Compact Allowance (USBR Estimate) in Table 3. The increment between current basin use (computed in the Basin Use Profiles of this Green River Basin Plan update) and the Compact allowance is the amount of water that could be developed by Wyoming, strictly from the Compact perspective. These values are shown as Remaining Compact Allowance, for comparison with the available surface water estimation developed by way of the spreadsheet models.

The spreadsheet models do not contain logic to operate curtailment to meet the state's obligations under the Upper Colorado River Basin Compact (the Compact). The models were developed to portray historical use over the study period 1971-2007. Never during that time, nor since the Compact was ratified, have diversions been curtailed pursuant to Article IV of the Compact. While the principles under which administration should be conducted are set forth in the Compact, actual details of their application have not been worked out by the Upper Colorado River Commission. Accordingly, simulation of curtailment was outside the scope of this effort.

[1] Wyoming Water Development Office Dam and Reservoir Division, "FONTENELLE DAM AND RESERVOIR", August 25, 2009.

[2] US Bureau of Reclamation, Jicarilla Apache Nation, City of Gallup, and Navajo Nation, Attachment N Hydrologic Determination 2007, Water Availability from the Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico, from Navajo -Gallup Water Supply Project Planning Report and Final Environmental Impact Statement, July 2009.(http://www.usbr.gov/uc/envdocs/eis/navgallup/FEIS/vol1/attach-N.pdf)

Table 3 Remaining Compact Allowance Compared with Available Flow from Spreadsheet Models

	Dry Condition (af/yr)	Normal Condition (af/yr)	Wet Condition (af/yr)
Municipal Use (includes City of Cheyenne at 15,300 AF/Yr.)	n/a	22,800	n/a
Industrial Use	n/a	58,800	n/a
Agricultural Use*	n/a	396,200	n/a
Domestic	n/a	3,000	n/a
Evaporation - Main Stem	n/a	88,500	n/a
Evaporation - In State	n/a	32,800	n/a
Recreation Use	n/a		
Environmental Use	n/a	2,000 +/-	n/a
Total Use	n/a	604,100	n/a
Compact Allowance (USBR Estimate)[1]	n/a	834,400	n/a
Compact Allowance (WWDC Estimate)[1]	n/a	947,800	n/a
RemainingCompact Allowance (USBR Estimate)	**230,300**		
RemainingCompact Allowance (WWDC Estimate)	**343,700**		
Available Water (from Table 2)	**863,000**	**1,792,000**	**2,964,000**

*Water use values based upon normal year estimates of surface water and groundwater use

Article XI of the Compact addresses the division of waters of the Little Snake River, whose tributaries lie on both sides of the Colorado-Wyoming state line, and whose mainstem crosses the boundary numerous times. The Compact identifies a point just below the mouth of Savery Creek, above which pre-Compact rights are not subject to calls emanating from below the point. This administrative nuance does not alter the definition of available flow for new or future uses above the so-called Compact point, however, since they could be regulated to satisfy senior users below the Compact point. Post-Compact rights, including future uses, below the Compact point, "shall be administered on the basis of an interstate priority schedule prepared by the Commission in conformity with priority dates established by the laws of the respective States," according to Article XI. Therefore, calculation of "available water" in this part of the basin must take into consideration the needs of downstream users in Colorado. To summarize, the method of calculating available water described above, when applied to the Little Snake including the Colorado sections of the river, is in accordance with Article XI of the Compact.

Appendix A

Water Availability by Node

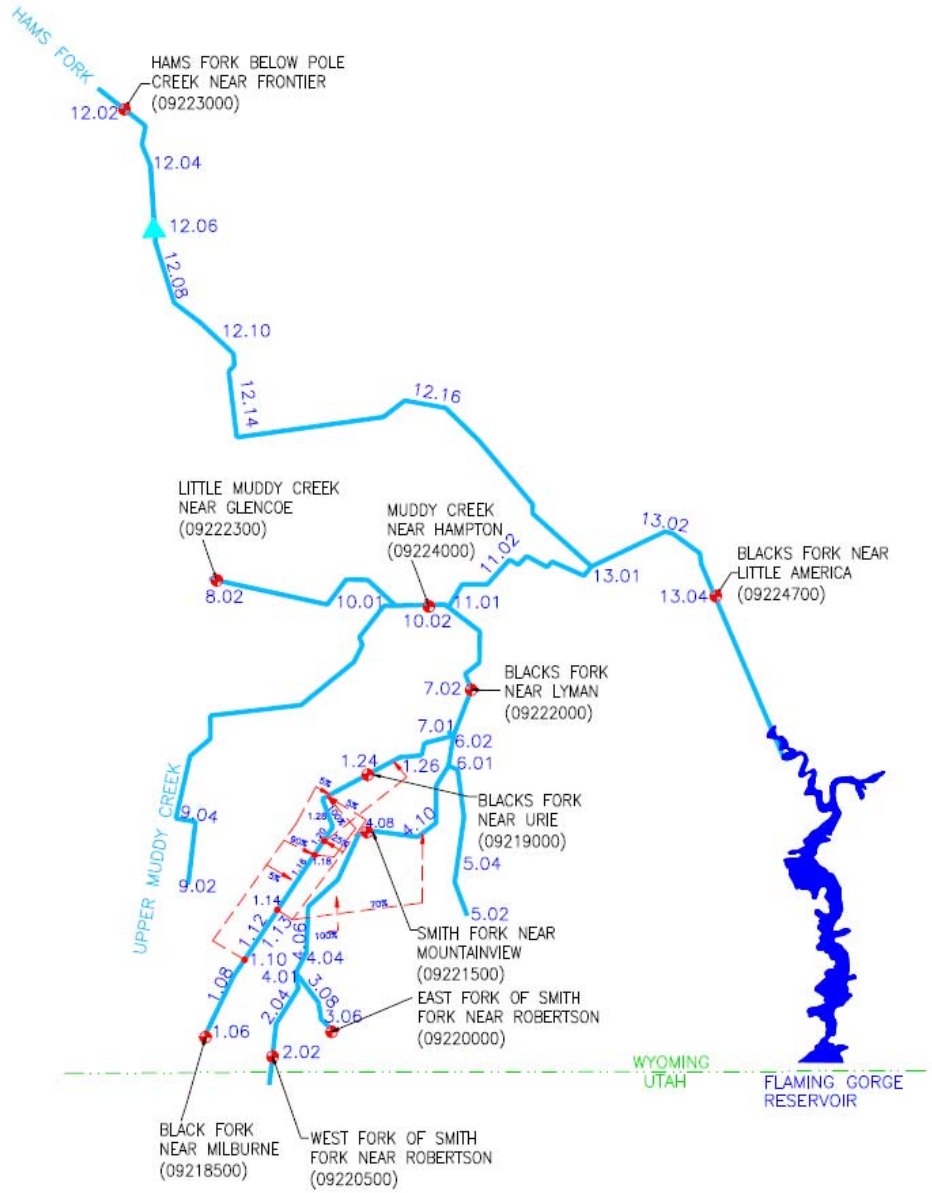

Figure A-1 Blacks Fork Node Diagram

Table A-1
Available Flow for Black's Fork River Basin and Dry Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.06	Blacks Fork near Milburne (09218500)	462	628	606	622	2,239	1,258	495	200	188	715	687	515	8,614
1.08	Below Blacks Fork near Millburne gage and above Pine Grove	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.10	Pine Grove	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.12	Below Pine Grove and above Blacks Fork Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.13	BVJPB Pipeline (Blacks Fork)	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.14	Blacks Fork Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.16	Below Blacks Fork Canal and above Bridger Butte Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.18	Bridger Butte Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.20	Fort Bridger Canal / Center / Twin Buttes	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.22	Below Fort Bridger / Twin Buttes and above Blacks Fork near Urie gage	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.24	Blacks Fork near Urie (09219000)	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.26	Below Blacks Fork near Urie gage	517	904	3,243	2,361	2,463	1,993	1,297	609	579	1,043	780	576	16,364
2.02	West Fork of Smith Fork near Robertson (09220500)	189	304	995	880	1,464	634	185	84	86	274	265	206	5,567
2.04	Below West Fork Smiths Fork nr Robertson and above confluence with East Fork Smith Fork	212	408	1,499	1,077	1,464	634	185	84	86	274	272	243	6,438
3.06	East Fork of Smith Fork near Robertson (09220000)	389	354	374	675	2,038	1,227	622	370	365	796	536	380	8,128
3.08	East Fork of Smith Fork gage and above confluence with West Fork Smith Fork	422	502	1,091	955	2,038	1,227	622	370	365	796	547	432	9,368

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4.01	Confluence of East and West Fork of Smiths Fork	587	867	2,539	1,894	2,038	1,227	622	370	365	796	777	632	12,715
4.04	Below confluence of East and West Fork Smith Fork and above BVJPB pipeline	587	867	2,539	1,894	2,038	1,227	622	370	365	796	777	632	12,715
4.06	BVJPB Pipeline (Smiths Fork)	587	867	2,539	1,894	2,038	1,227	622	370	365	796	777	632	12,715
4.08	Smiths Fork near Mountain View (09221500)	599	877	2,550	1,914	2,057	1,252	626	383	373	806	783	642	12,862
4.10	Between Smiths Fork near Mountain View gage and confluence with Cottonwood Creek	623	939	2,831	2,105	3,332	3,072	1,297	609	579	1,216	943	673	18,219
5.02	Cottonwood Creek	79	165	684	487	574	433	147	32	30	144	136	93	3,004
5.04	Agricultural diversions on Cottonwood Creek	79	165	684	487	574	433	147	32	30	144	136	93	3,004
6.01	Confluence Cottonwood Creek and Smiths Fork	703	1,105	3,515	2,591	3,907	3,072	1,297	609	579	1,359	1,079	766	20,582
6.02	Smiths Fork agricultural diversions between Cottonwood Creek and Blacks Fork	703	1,105	3,515	2,591	3,907	3,072	1,297	609	579	1,359	1,079	766	20,582
7.01	Confluence Smiths Fork and Blacks Fork	1,219	2,009	6,758	4,952	5,357	3,072	1,297	609	579	1,809	1,743	1,342	30,745
7.02	Blacks Fork near Lyman (09222000)	1,219	2,009	6,758	4,952	5,357	3,072	1,297	609	579	1,809	1,743	1,342	30,745
8.02	Little Muddy Creek near Glencoe (09222300)	308	487	600	971	450	167	81	139	90	241	547	479	4,560
9.02	Upper Muddy Creek	0	18	343	449	224	61	0	0	0	0	139	0	1,234
9.04	Upper Muddy Creek agricultural diversions	0	18	343	449	224	61	0	0	0	0	139	0	1,234
10.01	Confluence of Little Muddy Creek and Muddy Creek	308	505	943	1,420	674	228	81	139	90	241	686	479	5,794
10.02	Muddy Creek nr Hampton (09224000)	308	505	943	1,420	674	228	81	139	90	241	686	479	5,794
11.01	Confluence Muddy Creek and Blacks Fork	1,527	2,690	9,514	7,516	7,388	3,477	1,391	745	669	2,203	2,468	1,821	41,410
11.02	Blacks Fork agricultural diversions between Muddy	1,527	2,690	9,514	7,516	7,388	3,477	1,391	745	669	2,203	2,468	1,821	41,410

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Creek and Hams Fork													
12.02	Hams Fork below Pole Creek near Frontier (09223000)	530	458	520	1,185	4,224	2,810	650	456	474	797	726	554	13,383
12.04	Hams Fork between Hams Fork below Pole Creek gage and Viva Naughton	530	458	520	1,185	4,224	2,810	650	456	474	797	726	554	13,383
12.06	Viva Naughton Reservoir	530	458	520	1,185	4,224	2,810	650	745	651	797	726	554	13,849
12.08	Below Viva Naughton Reservoir	530	458	520	1,185	4,224	2,810	650	745	651	797	726	554	13,849
12.10	Viva Naughton Power Plant	530	458	520	1,185	4,224	2,810	650	745	651	797	726	554	13,849
12.14	City of Kemmerer	530	955	5,752	4,484	7,591	2,810	650	745	651	1,228	827	554	26,776
12.16	Below Kemmerer and above Hams Fork/Blacks Fork confluence	530	955	5,752	4,484	7,591	2,810	650	745	651	1,228	827	554	26,776
13.01	Confluence Hams Fork and Blacks Fork	2,034	3,645	15,266	12,000	14,979	6,287	2,041	745	676	3,431	3,295	2,338	66,736
13.02	Agricultural diversions below confluence of Hams Fork and Blacks Fork	2,034	3,645	15,266	12,000	14,979	6,287	2,041	745	676	3,431	3,295	2,338	66,736

Table A-2
Available Flow for Black's Fork River Basin and Normal Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.06	Blacks Fork near Milburne (09218500)	956	943	981	970	7,985	8,207	2,460	1,063	887	1,237	1,414	994	28,096
1.08	Below Blacks Fork near Millburne gage and above Pine Grove	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.10	Pine Grove	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.12	Below Pine Grove and above Blacks Fork Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.13	BVJPB Pipeline (Blacks Fork)	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.14	Blacks Fork Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.16	Below Blacks Fork Canal and above Bridger Butte Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.18	Bridger Butte Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.20	Fort Bridger Canal / Center / Twin Buttes	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.22	Below Fort Bridger / Twin Buttes and above Blacks Fork near Urie gage	956	1,331	4,400	4,946	8,346	8,207	2,460	1,063	887	1,237	1,414	994	36,241
1.24	Blacks Fork near Urie (09219000)	956	1,331	4,400	4,946	8,346	8,207	2,460	1,063	887	1,237	1,414	994	36,241
1.26	Below Blacks Fork near Urie gage	1,076	1,506	5,025	5,768	9,544	10,076	4,314	2,345	1,778	1,636	1,578	1,120	45,764
2.02	West Fork of Smith Fork near Robertson (09220500)	356	484	1,525	1,551	4,145	3,153	737	325	303	433	512	369	13,893
2.04	Below West Fork Smiths Fork nr Robertson and above confluence with East Fork Smith Fork	447	671	2,307	2,255	4,145	3,153	737	325	379	433	590	452	15,895
3.06	East Fork of Smith Fork near Robertson (09220000)	465	408	453	646	4,462	6,867	2,294	1,099	979	1,218	713	503	20,107
3.08	East Fork of Smith Fork gage and above confluence with West Fork Smith Fork	595	675	1,566	1,649	4,462	6,867	2,294	1,099	979	1,218	825	622	22,851

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4.01	Confluence of East and West Fork of Smiths Fork	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.04	Below confluence of East and West Fork Smith Fork and above BVJPB pipeline	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.06	BVJPB Pipeline (Smiths Fork)	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.08	Smiths Fork near Mountain View (09221500)	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.10	Between Smiths Fork near Mountain View gage and confluence with Cottonwood Creek	1,089	1,438	4,288	4,470	8,859	9,952	5,677	2,618	2,209	1,839	1,615	1,125	45,179
5.02	Cottonwood Creek	205	300	1,081	1,425	2,286	2,238	659	265	208	284	321	215	9,488
5.04	Agricultural diversions on Cottonwood Creek	205	300	1,081	1,425	2,286	2,238	659	265	208	284	321	215	9,488
6.01	Confluence Cottonwood Creek and Smiths Fork	1,293	1,738	5,368	5,895	11,146	12,190	5,874	2,618	2,209	2,124	1,937	1,339	53,731
6.02	Smiths Fork agricultural diversions between Cottonwood Creek and Blacks Fork	1,293	1,738	5,368	5,895	11,146	12,190	5,874	2,618	2,209	2,124	1,937	1,339	53,731
7.01	Confluence Smiths Fork and Blacks Fork	2,369	3,244	10,393	11,664	19,584	19,259	5,874	2,618	2,209	3,023	3,436	2,459	86,131
7.02	Blacks Fork near Lyman (09222000)	2,369	3,244	10,393	11,664	19,584	19,259	5,874	2,618	2,209	3,023	3,436	2,459	86,131
8.02	Little Muddy Creek near Glencoe (09222300)	267	317	1,432	1,335	762	260	280	202	164	317	236	370	5,941
9.02	Upper Muddy Creek	286	584	3,248	2,913	6,608	3,029	564	0	0	467	582	411	18,691
9.04	Upper Muddy Creek agricultural diversions	286	584	3,248	2,913	6,608	3,029	564	0	0	467	582	411	18,691
10.01	Confluence of Little Muddy Creek and Muddy Creek	553	900	4,680	4,248	7,370	3,289	844	202	164	784	817	781	24,631
10.02	Muddy Creek nr Hampton (09224000)	553	900	4,680	4,248	7,370	3,289	844	202	164	784	817	781	24,631
11.01	Confluence Muddy Creek and Blacks Fork	2,956	4,273	16,680	16,769	30,094	24,230	7,186	2,852	2,373	3,845	4,461	3,240	118,960
11.02	Blacks Fork agricultural	2,956	4,273	16,680	16,769	30,094	24,230	7,186	2,852	2,373	3,845	4,461	3,240	118,960

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	diversions between Muddy Creek and Hams Fork													
12.02	Hams Fork below Pole Creek near Frontier (09223000)	925	854	1,278	6,253	14,799	15,491	4,924	1,530	941	1,358	1,202	1,009	50,564
12.04	Hams Fork between Hams Fork below Pole Creek gage and Viva Naughton	925	854	1,278	6,253	14,799	15,491	4,924	1,530	941	1,358	1,202	1,009	50,564
12.06	Viva Naughton Reservoir	1,133	1,012	1,531	9,263	14,799	15,491	5,340	2,244	2,059	1,624	1,212	1,172	56,880
12.08	Below Viva Naughton Reservoir	1,133	1,012	1,531	9,263	14,799	15,491	5,340	2,244	2,059	1,624	1,212	1,172	56,880
12.10	Viva Naughton Power Plant	1,133	1,012	1,531	9,263	14,799	15,491	5,340	2,244	2,059	1,624	1,212	1,172	56,880
12.14	City of Kemmerer	1,219	1,372	6,165	11,733	23,278	18,534	5,394	2,244	2,059	1,724	1,803	1,172	76,696
12.16	Below Kemmerer and above Hams Fork/Blacks Fork confluence	1,219	1,372	6,165	11,733	23,278	18,534	5,394	2,244	2,059	1,724	1,803	1,172	76,696
13.01	Confluence Hams Fork and Blacks Fork	4,175	5,645	22,845	28,501	53,372	42,764	12,580	5,095	3,872	5,569	6,264	4,399	195,082
13.02	Agricultural diversions below confluence of Hams Fork and Blacks Fork	4,175	5,645	22,845	28,501	53,372	42,764	12,580	5,095	3,872	5,569	6,264	4,399	195,082

Table A-3
Available Flow for Black's Fork River Basin and Wet Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.06	Blacks Fork near Milburne (09218500)	1,438	1,351	1,481	1,868	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	68,303
1.08	Below Blacks Fork near Millburne gage and above Pine Grove	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.10	Pine Grove	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.12	Below Pine Grove and above Blacks Fork Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.13	BVJPB Pipeline (Blacks Fork)	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.14	Blacks Fork Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.16	Below Blacks Fork Canal and above Bridger Butte Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.18	Bridger Butte Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.20	Fort Bridger Canal / Center / Twin Buttes	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.22	Below Fort Bridger / Twin Buttes and above Blacks Fork near Urie gage	1,700	1,733	5,232	6,876	14,801	24,892	10,966	3,450	2,546	2,321	2,102	1,426	78,045
1.24	Blacks Fork near Urie (09219000)	1,700	1,733	5,232	6,876	14,801	24,892	10,966	3,450	2,546	2,321	2,102	1,426	78,045
1.26	Below Blacks Fork near Urie gage	1,928	1,967	5,978	7,938	16,364	26,751	12,722	4,907	4,114	3,063	2,491	1,614	89,838
2.02	West Fork of Smith Fork near Robertson (09220500)	480	562	1,628	2,067	5,034	8,935	3,763	1,181	913	753	705	494	26,515
2.04	Below West Fork Smiths Fork nr Robertson and above confluence with East Fork Smith Fork	696	789	2,586	3,157	6,530	8,935	3,778	1,181	913	753	757	576	30,651
3.06	East Fork of Smith Fork near Robertson (09220000)	641	562	601	933	4,455	18,309	10,857	3,229	2,435	1,712	1,142	728	45,603
3.08	East Fork of Smith Fork gage and above confluence with West Fork Smith Fork	949	885	1,965	2,485	6,076	18,309	10,857	3,229	2,435	1,712	1,218	845	50,965
4.01	Confluence of East and West Fork of Smiths Fork	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4.04	Below confluence of East and West Fork Smith Fork and above BVJPB pipeline	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077
4.06	BVJPB Pipeline (Smiths Fork)	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077
4.08	Smiths Fork near Mountain View (09221500)	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077
4.10	Between Smiths Fork near Mountain View gage and confluence with Cottonwood Creek	1,780	1,811	5,060	6,380	14,042	24,278	15,365	6,629	5,110	3,278	2,540	1,525	87,798
5.02	Cottonwood Creek	394	402	1,292	1,841	4,213	7,097	2,032	802	560	596	496	324	20,050
5.04	Agricultural diversions on Cottonwood Creek	394	402	1,292	1,841	4,213	7,097	2,032	802	560	596	496	324	20,050
6.01	Confluence Cottonwood Creek and Smiths Fork	2,174	2,214	6,351	8,222	18,255	31,375	17,397	7,431	5,670	3,874	3,036	1,849	107,849
6.02	Smiths Fork agricultural diversions between Cottonwood Creek and Blacks Fork	2,174	2,214	6,351	8,222	18,255	31,375	17,397	7,431	5,670	3,874	3,036	1,849	107,849
7.01	Confluence Smiths Fork and Blacks Fork	4,102	4,181	12,329	16,160	34,619	58,126	25,687	8,179	6,074	5,550	5,039	3,463	183,509
7.02	Blacks Fork near Lyman (09222000)	4,102	4,181	12,329	16,160	34,619	58,126	25,687	8,179	6,074	5,550	5,039	3,463	183,509
8.02	Little Muddy Creek near Glencoe (09222300)	686	1,520	3,640	13,390	5,520	3,250	1,340	871	673	187	283	188	31,548
9.02	Upper Muddy Creek	0	310	2,500	7,680	11,550	4,190	110	0	90	0	0	0	26,430
9.04	Upper Muddy Creek agricultural diversions	0	310	2,500	7,680	11,550	4,190	110	0	90	0	0	0	26,430
10.01	Confluence of Little Muddy Creek and Muddy Creek	686	1,830	6,140	21,070	17,070	7,440	1,450	871	763	187	283	188	57,978
10.02	Muddy Creek nr Hampton (09224000)	686	1,830	6,140	21,070	17,070	7,440	1,450	871	763	187	283	188	57,978
11.01	Confluence Muddy Creek and Blacks Fork	4,962	6,011	18,696	37,230	51,689	69,617	29,024	9,662	7,146	6,182	5,878	3,816	249,913
11.02	Blacks Fork agricultural diversions between Muddy Creek and Hams Fork	4,962	6,011	18,696	37,230	51,689	69,617	29,024	9,662	7,146	6,182	5,878	3,816	249,913
12.02	Hams Fork below Pole Creek	996	900	1,475	7,389	42,169	45,037	10,064	2,733	2,010	1,703	1,467	1,155	117,098

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	near Frontier (09223000)													
12.04	Hams Fork between Hams Fork below Pole Creek gage and Viva Naughton	996	900	1,475	7,389	42,169	45,037	10,064	2,733	2,010	1,703	1,467	1,155	117,098
12.06	Viva Naughton Reservoir	3,280	4,217	7,240	15,342	45,215	45,037	14,695	4,214	3,811	1,767	1,768	2,447	149,031
12.08	Below Viva Naughton Reservoir	3,280	4,217	7,240	15,342	45,215	45,037	14,695	4,214	3,811	1,767	1,768	2,447	149,031
12.10	Viva Naughton Power Plant	3,280	4,217	7,240	15,342	45,215	45,037	14,695	4,214	3,811	1,767	1,768	2,447	149,031
12.14	City of Kemmerer	3,771	4,217	7,883	15,342	45,215	55,178	18,504	5,289	4,505	3,041	3,365	2,908	169,218
12.16	Below Kemmerer and above Hams Fork/Blacks Fork confluence	3,771	4,217	7,883	15,342	45,215	55,178	18,504	5,289	4,505	3,041	3,365	2,908	169,218
13.01	Confluence Hams Fork and Blacks Fork	8,734	9,428	26,579	38,226	90,625	124,795	47,528	14,951	11,651	9,223	9,244	6,724	397,706
13.02	Agricultural diversions below confluence of Hams Fork and Blacks Fork	8,734	9,428	26,579	38,226	90,625	124,795	47,528	14,951	11,651	9,223	9,244	6,724	397,706

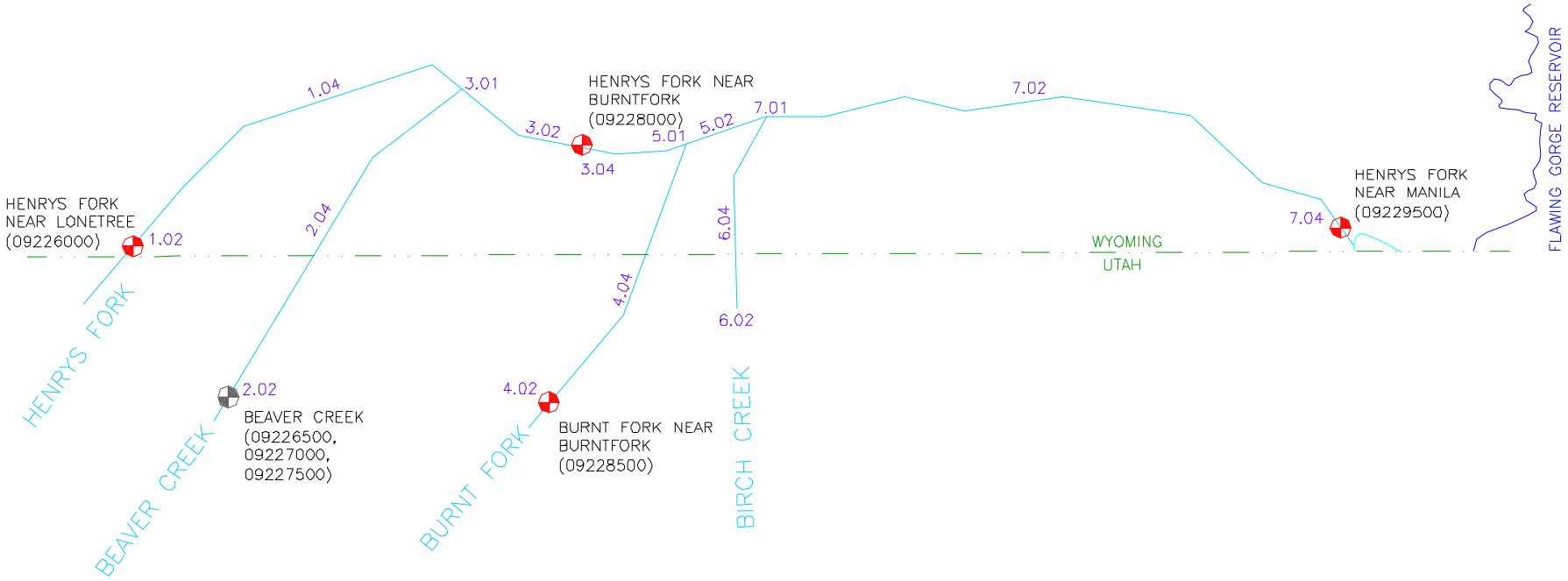

Figure A-2 Henrys Fork Node Diagram

Table A-4
Available Flow for Henry's Fork River Basin and Dry Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Henrys Fork near Lonetree (09226000)	237	215	274	780	2,591	2,825	451	70	49	502	378	285	8,656
1.04	Below Henrys Fork nr Lonetree and above confluence with Beaver Creek	451	494	1,318	780	2,591	2,825	451	70	49	502	513	549	10,593
2.02	Beaver Creek Inflows (09226500, 09227000, 09227500)	653	619	705	1,251	2,591	2,825	451	70	49	540	796	716	11,265
2.04	Beaver Creek diversions	876	909	1,791	1,251	2,591	2,825	451	70	49	540	937	992	13,282
3.01	Confluence Beaver Creek and Henrys Fork	1,328	1,403	3,109	1,461	2,591	2,825	451	70	49	540	1,451	1,541	16,817
3.02	Diversions below Beaver Creek and above Henrys Fork near Burntfork	1,328	1,403	3,109	1,461	2,591	2,825	451	70	49	540	1,451	1,541	16,817
3.04	Henrys Fork near Burntfork (09228000)	1,328	1,403	3,109	1,461	2,591	2,825	451	70	49	540	1,451	1,541	16,817
4.02	Burnt Fork near Burntfork (09228500)	443	430	467	682	2,383	3,213	815	354	298	611	532	473	10,700
4.04	Burnt Fork diversions	443	430	467	682	2,383	3,213	815	354	298	611	532	473	10,700
5.01	Confluence Burnt Fork and Henrys Fork	1,771	1,836	3,826	2,062	3,353	3,652	815	354	298	981	1,982	2,014	22,945
5.02	Henrys Fork diversions between Burnt Fork and Birch Creek	1,771	1,836	3,826	2,062	3,353	3,652	815	354	298	981	1,982	2,014	22,945
6.02	Birch Creek inflows	163	159	172	251	918	1,349	504	314	173	225	196	175	4,600
6.04	Birch Creek diversions	163	159	172	251	918	1,349	504	314	173	225	196	175	4,600
7.01	Confluence Birch Creek and Henrys Fork	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638
7.02	Henrys Fork diversions between Birch Creek and Henrys Fork near Manila	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638
7.04	Henrys Fork near Manila, UT (09229500)	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638

Table A-5
Available Flow for Henry's Fork River Basin and Normal Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Henrys Fork near Lonetree (09226000)	335	291	365	843	5,485	8,967	2,887	1,183	529	746	515	403	22,549
1.04	Below Henrys Fork nr Lonetree and above confluence with Beaver Creek	862	979	1,563	1,476	5,485	8,967	2,887	1,183	529	816	1,125	937	26,807
2.02	Beaver Creek Inflows (09226500, 09227000, 09227500)	735	677	778	1,348	5,840	8,296	2,887	1,183	930	1,156	919	808	25,558
2.04	Beaver Creek diversions	1,283	1,393	2,025	2,007	5,840	8,296	2,887	1,183	930	1,229	1,553	1,364	29,990
3.01	Confluence Beaver Creek and Henrys Fork	2,145	2,372	3,588	3,483	7,018	10,014	2,887	1,183	930	2,045	2,677	2,301	40,643
3.02	Diversions below Beaver Creek and above Henrys Fork near Burntfork	2,145	2,372	3,588	3,483	7,018	10,014	2,887	1,183	930	2,045	2,677	2,301	40,643
3.04	Henrys Fork near Burntfork (09228000)	2,145	2,372	3,588	3,483	7,018	10,014	2,887	1,183	930	2,045	2,677	2,301	40,643
4.02	Burnt Fork near Burntfork (09228500)	505	477	524	725	3,180	5,696	2,279	994	539	760	619	548	16,847
4.04	Burnt Fork diversions	505	477	524	725	3,180	5,696	2,279	994	539	760	619	548	16,847
5.01	Confluence Burnt Fork and Henrys Fork	2,680	2,956	4,367	4,208	8,591	12,111	3,717	1,706	1,387	2,746	3,296	2,849	50,614
5.02	Henrys Fork diversions between Burnt Fork and Birch Creek	2,680	2,956	4,367	4,208	8,591	12,111	3,717	1,706	1,387	2,746	3,296	2,849	50,614
6.02	Birch Creek inflows	186	176	193	268	1,218	2,240	943	404	235	281	228	202	6,574
6.04	Birch Creek diversions	186	176	193	268	1,218	2,240	943	404	235	281	228	202	6,574
7.01	Confluence Birch Creek and Henrys Fork	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809
7.02	Henrys Fork diversions between Birch Creek and Henrys Fork near Manila	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809
7.04	Henrys Fork near Manila, UT (09229500)	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809

Table A-6
Available Flow for Henry's Fork River Basin and Wet Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Henrys Fork near Lonetree (09226000)	493	453	546	1,485	8,161	16,772	7,043	2,539	1,220	1,075	771	582	41,140
1.04	Below Henrys Fork nr Lonetree and above confluence with Beaver Creek	1,232	956	2,882	3,071	8,161	16,772	7,043	2,539	1,220	1,667	1,431	1,079	48,054
2.02	Beaver Creek Inflows (09226500, 09227000, 09227500)	879	841	955	2,259	10,162	16,152	7,596	3,210	2,258	1,443	1,157	967	47,880
2.04	Beaver Creek diversions	1,648	1,365	3,387	3,911	10,162	16,152	7,596	3,210	2,258	2,059	1,845	1,484	55,077
3.01	Confluence Beaver Creek and Henrys Fork	2,881	2,321	6,269	6,982	16,889	29,507	13,718	5,262	3,330	3,726	3,275	2,563	96,724
3.02	Diversions below Beaver Creek and above Henrys Fork near Burntfork	2,881	2,321	6,269	6,982	16,889	29,507	13,718	5,262	3,330	3,726	3,275	2,563	96,724
3.04	Henrys Fork near Burntfork (09228000)	2,881	2,321	6,269	6,982	16,889	29,507	13,718	5,262	3,330	3,726	3,275	2,563	96,724
4.02	Burnt Fork near Burntfork (09228500)	574	533	591	950	3,745	10,859	6,665	2,271	1,238	975	739	637	29,778
4.04	Burnt Fork diversions	574	533	591	950	3,745	10,859	6,665	2,271	1,238	975	739	637	29,778
5.01	Confluence Burnt Fork and Henrys Fork	3,519	2,876	7,493	8,197	20,187	35,012	16,462	6,529	4,259	4,701	4,014	3,200	116,449
5.02	Henrys Fork diversions between Burnt Fork and Birch Creek	3,519	2,876	7,493	8,197	20,187	35,012	16,462	6,529	4,259	4,701	4,014	3,200	116,449
6.02	Birch Creek inflows	212	197	218	351	1,423	4,126	2,548	868	468	360	273	235	11,278
6.04	Birch Creek diversions	212	197	218	351	1,423	4,126	2,548	868	468	360	273	235	11,278
7.01	Confluence Birch Creek and Henrys Fork	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786
7.02	Henrys Fork diversions between Birch Creek and Henrys Fork near Manila	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786
7.04	Henrys Fork near Manila, UT (09229500)	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786

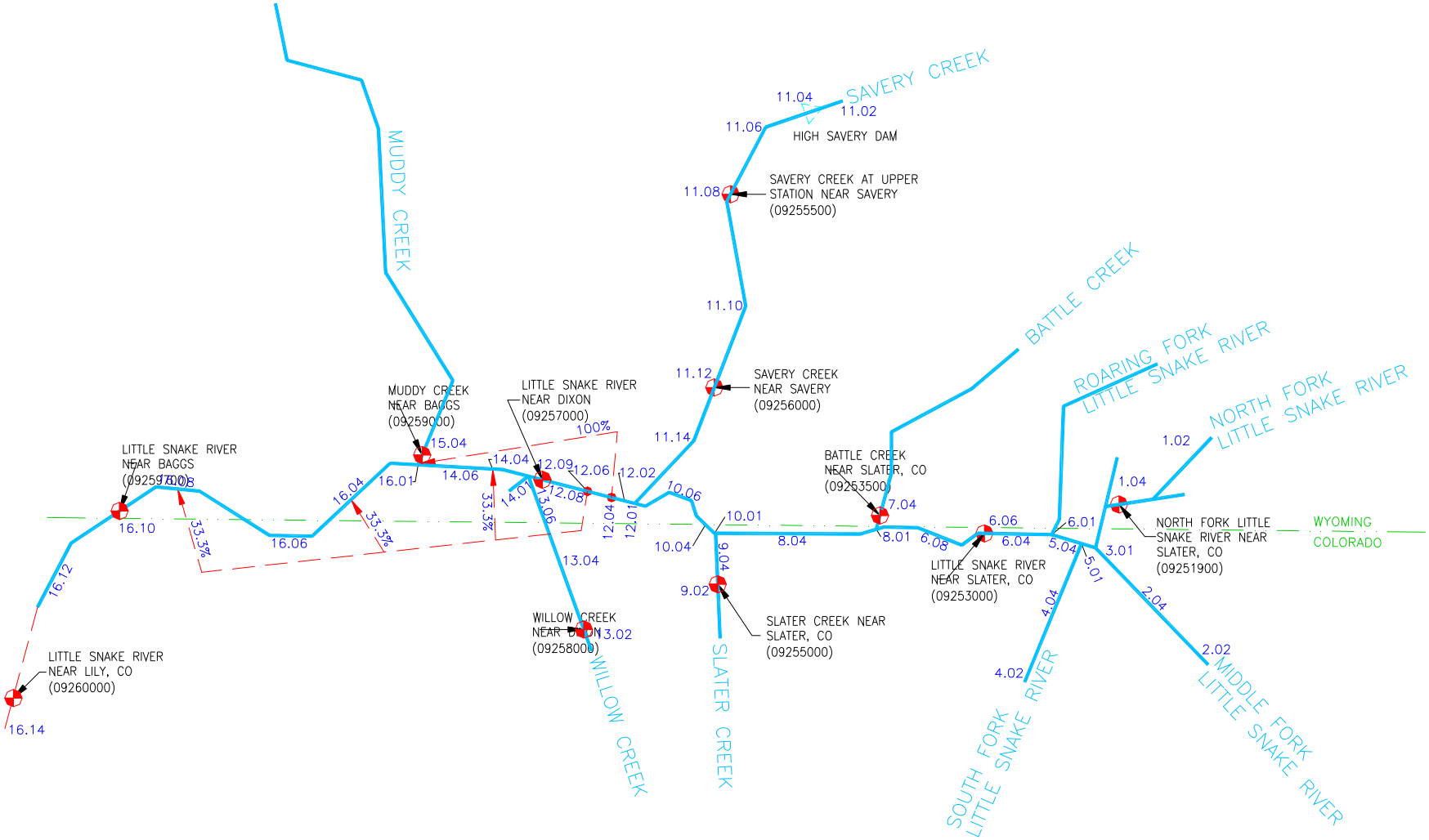

Figure A-3 Little Snake River Node Diagram

Table A-7
Available Flow for Little Snake River Basin and Dry Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Cheyenne State I & II diversions	441	431	838	3,509	7,004	3,239	750	389	347	528	485	446	18,409
1.04	North Fork Little Snake River nr Slater (09251900)	441	431	838	3,509	7,004	3,239	750	389	347	528	485	446	18,409
2.02	Middle Fork Little Snake River	688	669	1,507	7,003	14,064	6,025	1,035	534	491	868	780	700	34,364
2.04	CO diversions on Middle Fork Little Snake	688	669	1,507	7,003	14,064	6,025	1,035	534	491	868	780	700	34,364
3.01	Confluence of Middle Fork and North Fork Little Snake	1,425	1,384	3,119	14,500	29,605	14,042	2,777	1,393	1,054	1,797	1,616	1,449	74,161
4.02	South Fork Little Snake River	261	253	571	2,654	5,276	2,108	272	183	184	329	296	265	12,651
4.04	CO diversions on South Fork Little Snake	261	253	571	2,654	5,276	2,108	272	183	184	329	296	265	12,651
5.01	Confluence of South Fork Little Snake and Little Snake	1,686	1,638	3,690	17,154	34,769	15,791	2,777	1,393	1,213	2,126	1,911	1,715	85,864
5.04	CO diversions on Little Snake d/s of South Fork	1,686	1,638	3,690	17,154	34,769	15,791	2,777	1,393	1,213	2,126	1,911	1,715	85,864
6.01	Confluence of Roaring Fork Little Snake and Little Snake	1,686	1,638	3,690	17,154	34,769	15,791	2,777	1,393	1,213	2,126	1,911	1,715	85,864
6.04	CO diversions on Little Snake d/s of Roaring Fork	1,686	1,638	3,690	17,154	34,769	15,791	2,777	1,393	1,213	2,126	1,911	1,715	85,864
6.06	Little Snake River near Slater (09253000)	1,686	1,638	3,690	17,154	34,769	15,791	2,777	1,393	1,213	2,126	1,911	1,715	85,864
6.08	CO diversions below Little Snake nr Slater gage	1,686	1,638	8,224	17,154	42,953	20,525	2,777	1,393	1,213	2,126	1,911	1,715	103,316
7.04	Battle Creek near Slater (09253500)	934	934	2,058	8,268	11,072	3,208	401	227	374	1,272	1,193	1,057	30,998
8.01	Confluence of Battle Creek and Little Snake	2,162	2,572	10,282	25,422	50,260	20,525	2,777	1,568	1,581	2,986	3,105	2,511	125,751
8.04	CO diversions on Little Snake d/s of Battle Creek	2,162	2,572	10,282	25,422	50,260	20,525	2,777	1,568	1,581	2,986	3,105	2,511	125,751
9.02	Slater Creek near Slater, CO (09255000)	955	955	2,010	7,841	10,401	2,854	292	265	426	1,273	1,198	1,070	29,539
9.04	CO diversions on Slater Creek	955	955	2,010	7,841	10,401	2,854	292	265	426	1,273	1,198	1,070	29,539
10.01	Confluence of Slater Creek and Little Snake	2,162	2,804	12,292	33,263	50,260	20,525	2,777	1,814	1,596	2,986	3,742	2,511	136,732
10.04	CO diversions on Little Snake d/s of Slater Creek	2,162	2,804	12,292	33,263	50,260	20,525	2,777	1,814	1,596	2,986	3,742	2,511	136,732

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
10.06	WY diversions on Little Snake d/s of Slater Creek	2,162	2,804	12,292	33,263	50,260	20,525	2,777	1,814	1,596	2,986	3,742	2,511	136,732
11.02	Above High Savery Dam	778	685	228	1,934	0	1,619	982	677	690	692	735	764	9,784
11.04	High Savery Dam	778	685	228	1,934	0	1,619	2,026	6,696	1,596	790	735	764	17,850
11.06	WY diversions below High Savery and above Savery Creek at Upper Station	902	877	228	2,331	0	1,619	2,026	6,696	1,596	1,207	1,012	968	19,460
11.08	Savery Creek at Upper Station nr Savery (09255500)	902	877	228	2,331	0	1,619	2,026	6,696	1,596	1,207	1,012	968	19,460
11.10	WY diversions between Savery Creek at Upper Station and Savery Creek near Savery	1,495	1,469	1,943	8,938	6,553	2,882	2,026	6,696	1,596	1,877	1,731	1,659	38,865
11.12	Savery Creek near Savery (09256000)	1,495	1,469	1,943	8,938	6,553	2,882	2,026	6,696	1,596	1,877	1,731	1,659	38,865
11.14	WY diversions between Savery Creek near Savery and confluence	1,495	1,469	1,943	8,938	6,553	2,882	2,026	6,696	1,596	1,877	1,731	1,659	38,865
12.01	Confluence of Savery Creek and Little Snake	2,162	2,804	14,234	42,201	50,260	20,525	2,777	6,696	1,596	2,986	3,742	2,511	152,494
12.02	WY diversions between Savery Creek and First Mesa Canal	2,162	2,804	14,234	42,201	50,260	20,525	2,777	6,696	1,596	2,986	3,742	2,511	152,494
12.04	First Mesa Canal	2,162	2,804	14,234	42,201	50,260	20,525	2,777	6,696	1,596	2,986	3,742	2,511	152,494
12.06	Westside Canal	2,162	2,804	14,516	42,907	50,260	20,525	2,777	6,696	1,596	2,986	3,742	2,511	153,481
12.08	Town of Dixon	2,162	2,804	14,516	42,907	50,260	20,525	2,777	6,696	1,596	2,986	3,742	2,511	153,481
12.09	Little Snake River near Dixon (09257000)	2,162	2,804	14,516	42,907	50,260	20,525	2,777	6,696	1,596	2,986	3,742	2,511	153,481
13.02	Willow Creek near Dixon (09258000)	160	166	285	913	941	0	110	106	120	205	197	167	3,370
13.04	CO diversions on Willow Creek	160	166	285	913	941	0	110	106	120	205	197	167	3,370
13.06	WY diversions on Willow Creek	160	166	285	913	941	0	110	106	120	205	197	167	3,370
14.01	Little Snake River downstream of Dixon gage	3,424	4,115	14,516	42,907	50,260	20,525	2,777	6,696	1,596	3,285	4,696	3,780	158,576
14.04	WY diversions between Willow Creek and Muddy Creek	3,424	4,115	14,516	42,907	50,260	21,035	3,212	6,710	1,596	3,402	4,751	3,780	159,707
14.06	Town of Baggs	3,424	4,115	14,516	42,907	50,260	21,035	3,212	6,710	1,596	3,402	4,751	3,780	159,707
15.04	Muddy Creek near Baggs	24	18	3,150	1,560	1,025	718	238	79	113	461	195	39	7,618

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	(09259000)													
16.01	Confluence of Muddy Creek and Little Snake	3,447	4,133	16,713	43,672	50,260	24,776	4,216	6,710	1,596	4,021	5,014	3,819	168,378
16.04	WY diversions between Muddy Creek and state line	3,447	4,133	16,713	43,672	50,260	24,776	4,216	6,710	1,596	4,140	5,072	3,819	168,555
16.06	CO diversions on Little Snake d/s of Muddy Creek	3,447	4,133	16,713	43,672	50,260	24,776	4,216	6,710	1,596	4,140	5,072	3,819	168,555
16.08	WY diversions between state line and Little Snake near Baggs	3,447	4,133	16,713	43,672	50,260	25,322	4,216	6,710	1,596	4,259	5,130	3,819	169,279
16.10	Little Snake River near Baggs (09259700)	3,447	4,133	16,713	43,672	50,260	25,322	4,216	6,710	1,596	4,259	5,130	3,819	169,279
16.12	CO diversions below Little Snake nr Baggs gage	4,252	4,933	17,422	44,197	50,725	25,983	4,859	7,309	2,035	5,060	5,924	4,621	177,321
16.14	Little Snake River near Lily, CO (09260000)	4,252	4,933	17,422	44,197	50,725	25,983	4,859	7,309	2,035	5,060	5,924	4,621	177,321

Table A-8
Available Flow for Little Snake River Basin and Normal Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Cheyenne State I & II diversions	506	489	805	3,243	13,497	10,553	1,999	587	457	618	570	521	33,846
1.04	North Fork Little Snake River nr Slater (09251900)	506	489	805	3,243	13,497	10,553	1,999	587	457	618	570	521	33,846
2.02	Middle Fork Little Snake River	824	789	1,438	6,456	27,406	21,175	3,614	941	703	1,053	955	854	66,207
2.04	CO diversions on Middle Fork Little Snake	824	789	1,438	6,456	27,406	21,175	3,614	941	703	1,053	955	854	66,207
3.01	Confluence of Middle Fork and North Fork Little Snake	1,705	1,633	2,977	13,366	57,201	44,830	8,343	2,098	1,514	2,180	1,977	1,768	139,592
4.02	South Fork Little Snake River	312	299	545	2,447	10,325	7,892	1,253	336	259	399	362	324	24,751
4.04	CO diversions on South Fork Little Snake	312	299	545	2,447	10,325	7,892	1,253	336	259	399	362	324	24,751
5.01	Confluence of South Fork Little Snake and Little Snake	2,017	1,932	3,521	15,813	67,399	52,655	9,538	2,425	1,757	2,579	2,339	2,091	164,066
5.04	CO diversions on Little Snake d/s of South Fork	2,017	1,932	3,521	15,813	67,399	52,655	9,538	2,425	1,757	2,579	2,339	2,091	164,066
6.01	Confluence of Roaring Fork Little Snake and Little Snake	2,017	1,932	3,521	15,813	67,399	52,655	9,538	2,425	1,757	2,579	2,339	2,091	164,066
6.04	CO diversions on Little Snake d/s of Roaring Fork	2,017	1,932	3,521	15,813	67,399	52,655	9,538	2,425	1,757	2,579	2,339	2,091	164,066
6.06	Little Snake River near Slater (09253000)	2,017	1,932	3,521	15,813	67,399	52,655	9,538	2,425	1,757	2,579	2,339	2,091	164,066
6.08	CO diversions below Little Snake nr Slater gage	2,017	2,907	11,973	16,741	67,399	62,681	14,455	2,820	1,757	2,579	2,339	2,091	189,759
7.04	Battle Creek near Slater (09253500)	1,201	1,210	2,445	9,039	28,067	16,210	2,438	588	682	1,452	1,357	1,192	65,881
8.01	Confluence of Battle Creek and Little Snake	3,218	4,118	14,418	25,781	95,300	78,533	15,290	3,353	2,111	4,031	3,695	3,283	253,131
8.04	CO diversions on Little Snake d/s of Battle Creek	3,218	4,118	14,418	25,781	95,300	78,533	15,290	3,353	2,111	4,031	3,695	3,283	253,131
9.02	Slater Creek near Slater, CO (09255000)	1,205	1,214	2,373	8,565	26,348	15,119	2,211	602	708	1,442	1,352	1,197	62,336
9.04	CO diversions on Slater Creek	1,205	1,214	2,373	8,565	26,348	15,119	2,211	602	708	1,442	1,352	1,197	62,336
10.01	Confluence of Slater Creek and Little Snake	4,424	5,332	16,791	34,346	121,590	93,526	15,290	3,936	2,111	5,473	5,047	4,327	312,191
10.04	CO diversions on Little Snake d/s of Slater Creek	4,424	5,332	16,791	34,346	121,590	93,526	15,290	3,936	2,111	5,473	5,047	4,327	312,191

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
10.06	WY diversions on Little Snake d/s of Slater Creek	4,424	5,332	16,791	34,346	121,590	93,526	15,290	3,936	2,111	5,473	5,047	4,327	312,191
11.02	Above High Savery Dam	778	685	310	1,934	3,855	4,693	982	677	690	692	735	764	16,796
11.04	High Savery Dam	778	685	310	1,934	3,855	4,693	2,638	7,320	1,802	790	735	764	26,304
11.06	WY diversions below High Savery and above Savery Creek at Upper Station	1,057	1,027	310	2,942	8,978	7,658	3,432	7,503	2,018	1,356	1,117	1,038	38,437
11.08	Savery Creek at Upper Station nr Savery (09255500)	1,057	1,027	310	2,942	8,978	7,658	3,432	7,503	2,018	1,356	1,117	1,038	38,437
11.10	WY diversions between Savery Creek at Upper Station and Savery Creek near Savery	1,885	1,847	2,148	10,470	29,037	18,228	4,556	7,692	2,111	2,251	1,995	1,834	84,055
11.12	Savery Creek near Savery (09256000)	1,885	1,847	2,148	10,470	29,037	18,228	4,556	7,692	2,111	2,251	1,995	1,834	84,055
11.14	WY diversions between Savery Creek near Savery and confluence	1,885	1,847	2,148	10,470	29,037	18,228	4,556	7,692	2,111	2,251	1,995	1,834	84,055
12.01	Confluence of Savery Creek and Little Snake	4,590	7,179	18,939	44,816	142,755	98,642	15,290	7,692	2,111	5,609	6,093	4,327	358,041
12.02	WY diversions between Savery Creek and First Mesa Canal	4,590	7,179	18,939	44,816	142,755	98,642	15,290	7,692	2,111	5,609	6,093	4,327	358,041
12.04	First Mesa Canal	4,590	7,179	18,939	44,816	142,755	98,642	15,290	7,692	2,111	5,609	6,093	4,327	358,041
12.06	Westside Canal	4,590	7,386	19,364	46,067	142,755	98,642	15,290	7,692	2,111	5,609	6,093	4,327	359,924
12.08	Town of Dixon	4,590	7,386	19,364	46,067	142,755	98,642	15,290	7,692	2,111	5,609	6,093	4,327	359,924
12.09	Little Snake River near Dixon (09257000)	4,590	7,386	19,364	46,067	142,755	98,642	15,290	7,692	2,111	5,609	6,093	4,327	359,924
13.02	Willow Creek near Dixon (09258000)	213	209	429	1,252	2,292	1,269	384	204	179	245	215	206	7,098
13.04	CO diversions on Willow Creek	213	209	429	1,252	2,292	1,269	384	204	179	245	215	206	7,098
13.06	WY diversions on Willow Creek	213	209	429	1,252	2,292	1,269	384	204	179	245	215	206	7,098
14.01	Little Snake River downstream of Dixon gage	5,999	8,989	19,364	50,653	146,308	98,840	15,290	7,692	2,111	5,627	6,586	5,646	373,105
14.04	WY diversions between Willow Creek and Muddy Creek	5,999	8,989	19,364	50,653	146,434	99,354	15,823	8,474	2,545	5,812	6,664	5,646	375,757
14.06	Town of Baggs	5,999	8,989	19,364	50,653	146,434	99,354	15,823	8,474	2,545	5,812	6,664	5,646	375,757

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
15.04	Muddy Creek near Baggs (09259000)	36	30	4,765	2,871	3,080	1,180	518	132	101	400	551	109	13,772
16.01	Confluence of Muddy Creek and Little Snake	6,035	9,018	21,882	53,524	150,755	103,219	19,252	9,752	3,090	6,793	7,476	5,755	396,551
16.04	WY diversions between Muddy Creek and state line	6,035	9,018	21,882	53,524	150,755	103,219	19,252	9,752	3,090	6,981	7,556	5,755	396,819
16.06	CO diversions on Little Snake d/s of Muddy Creek	6,035	9,018	21,882	53,524	150,755	103,219	19,252	9,752	3,090	6,981	7,556	5,755	396,819
16.08	WY diversions between state line and Little Snake near Baggs	6,035	9,018	21,882	53,524	150,946	104,299	20,289	9,752	3,090	7,169	7,636	5,755	399,395
16.10	Little Snake River near Baggs (09259700)	6,035	9,018	21,882	53,524	150,946	104,299	20,289	9,752	3,090	7,169	7,636	5,755	399,395
16.12	CO diversions below Little Snake nr Baggs gage	6,823	9,786	22,557	53,983	150,946	104,441	20,995	10,450	3,768	7,951	8,413	6,545	406,658
16.14	Little Snake River near Lily, CO (09260000)	6,823	9,786	22,557	53,983	150,946	104,441	20,995	10,450	3,768	7,951	8,413	6,545	406,658

Table A-9
Available Flow for Little Snake River Basin and Wet Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Cheyenne State I & II diversions	633	512	802	4,106	19,149	19,854	3,936	799	645	684	618	590	52,330
1.04	North Fork Little Snake River nr Slater (09251900)	633	512	802	4,106	19,149	19,854	3,936	799	645	684	618	590	52,330
2.02	Middle Fork Little Snake River	1,084	836	1,432	8,232	38,973	40,331	7,610	1,376	1,105	1,190	1,053	996	104,218
2.04	CO diversions on Middle Fork Little Snake	1,084	836	1,432	8,232	38,973	40,331	7,610	1,376	1,105	1,190	1,053	996	104,218
3.01	Confluence of Middle Fork and North Fork Little Snake	2,244	1,730	2,966	17,043	81,346	84,439	16,591	3,002	2,298	2,463	2,181	2,062	218,365
4.02	South Fork Little Snake River	411	317	543	3,120	14,682	15,158	2,771	501	417	451	399	378	39,147
4.04	CO diversions on South Fork Little Snake	411	317	543	3,120	14,682	15,158	2,771	501	417	451	399	378	39,147
5.01	Confluence of South Fork Little Snake and Little Snake	2,654	2,047	3,509	20,163	95,984	99,534	19,306	3,493	2,712	2,914	2,580	2,440	257,336
5.04	CO diversions on Little Snake d/s of South Fork	2,654	2,047	3,509	20,163	95,984	99,534	19,306	3,493	2,712	2,914	2,580	2,440	257,336
6.01	Confluence of Roaring Fork Little Snake and Little Snake	2,654	2,047	3,509	20,163	95,984	99,534	19,306	3,493	2,712	2,914	2,580	2,440	257,336
6.04	CO diversions on Little Snake d/s of Roaring Fork	2,654	2,047	3,509	20,163	95,984	99,534	19,306	3,493	2,712	2,914	2,580	2,440	257,336
6.06	Little Snake River near Slater (09253000)	2,654	2,047	3,509	20,163	95,984	99,534	19,306	3,493	2,712	2,914	2,580	2,440	257,336
6.08	CO diversions below Little Snake nr Slater gage	2,654	2,047	14,450	23,592	103,737	117,279	28,021	4,493	2,712	2,914	2,580	2,440	306,920
7.04	Battle Creek near Slater (09253500)	1,364	1,204	2,373	8,142	36,596	27,447	5,431	1,113	1,467	1,874	1,525	1,277	89,813
8.01	Confluence of Battle Creek and Little Snake	4,018	3,252	16,823	31,734	140,096	144,387	33,150	5,551	4,175	4,789	4,105	3,717	395,797
8.04	CO diversions on Little Snake d/s of Battle Creek	4,018	3,252	16,823	31,734	140,096	144,387	33,150	5,551	4,175	4,789	4,105	3,717	395,797
9.02	Slater Creek near Slater, CO (09255000)	1,358	1,209	2,306	7,723	34,321	25,679	5,026	1,095	1,453	1,838	1,510	1,277	84,794
9.04	CO diversions on Slater Creek	1,358	1,209	2,306	7,723	34,321	25,679	5,026	1,095	1,453	1,838	1,510	1,277	84,794
10.01	Confluence of Slater Creek and Little Snake	5,376	4,460	19,129	39,457	174,333	169,947	36,671	6,627	4,870	6,627	5,615	4,994	478,105
10.04	CO diversions on Little	5,376	4,460	19,129	39,457	174,333	169,947	36,671	6,627	4,870	6,627	5,615	4,994	478,105

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Snake d/s of Slater Creek													
10.06	WY diversions on Little Snake d/s of Slater Creek	5,376	4,460	19,129	39,457	174,333	169,947	36,671	6,627	4,870	6,627	5,615	4,994	478,105
11.02	Above High Savery Dam	778	685	89	1,934	3,855	4,693	982	677	690	692	735	764	16,574
11.04	High Savery Dam	778	685	89	1,934	3,855	4,693	2,638	7,320	1,802	790	735	764	26,082
11.06	WY diversions below High Savery and above Savery Creek at Upper Station	1,017	925	89	2,750	13,359	13,386	4,850	7,813	2,469	1,633	1,274	1,112	50,677
11.08	Savery Creek at Upper Station nr Savery (09255500)	1,017	925	89	2,750	13,359	13,386	4,850	7,813	2,469	1,633	1,274	1,112	50,677
11.10	WY diversions between Savery Creek at Upper Station and Savery Creek near Savery	1,946	1,778	1,856	9,116	39,985	32,797	8,242	8,361	3,423	2,807	2,243	1,951	114,505
11.12	Savery Creek near Savery (09256000)	1,946	1,778	1,856	9,116	39,985	32,797	8,242	8,361	3,423	2,807	2,243	1,951	114,505
11.14	WY diversions between Savery Creek near Savery and confluence	1,946	1,778	1,856	9,116	39,985	32,797	8,242	8,361	3,423	2,807	2,243	1,951	114,505
12.01	Confluence of Savery Creek and Little Snake	5,646	5,775	20,985	48,573	210,531	190,680	36,671	10,803	4,870	6,832	6,629	6,035	554,030
12.02	WY diversions between Savery Creek and First Mesa Canal	5,646	5,775	20,985	48,573	210,531	190,680	36,671	10,803	4,870	6,832	6,629	6,035	554,030
12.04	First Mesa Canal	5,646	5,775	20,985	48,573	210,531	190,680	36,671	10,803	4,870	6,832	6,629	6,035	554,030
12.06	Westside Canal	5,646	5,775	21,512	50,220	210,531	190,680	36,671	10,803	4,870	6,832	6,629	6,035	556,205
12.08	Town of Dixon	5,646	5,775	21,512	50,220	210,531	190,680	36,671	10,803	4,870	6,832	6,629	6,035	556,205
12.09	Little Snake River near Dixon (09257000)	5,646	5,775	21,512	50,220	210,531	190,680	36,671	10,803	4,870	6,832	6,629	6,035	556,205
13.02	Willow Creek near Dixon (09258000)	230	223	529	1,649	2,854	2,655	1,032	289	242	287	225	212	10,425
13.04	CO diversions on Willow Creek	230	223	529	1,649	2,854	2,655	1,032	289	242	287	225	212	10,425
13.06	WY diversions on Willow Creek	230	223	529	1,649	2,854	2,655	1,032	289	242	287	225	212	10,425
14.01	Little Snake River downstream of Dixon gage	7,036	7,345	22,508	58,144	223,183	205,899	40,836	10,803	4,870	6,873	7,022	7,262	601,782
14.04	WY diversions between Willow Creek and Muddy Creek	7,036	7,345	22,508	58,144	223,183	206,514	41,867	11,810	5,632	7,143	7,146	7,262	605,591

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
14.06	Town of Baggs	7,036	7,345	22,508	58,144	223,183	206,514	41,867	11,810	5,632	7,143	7,146	7,262	605,591
15.04	Muddy Creek near Baggs (09259000)	36	30	4,765	2,871	3,080	1,180	518	132	101	400	551	109	13,772
16.01	Confluence of Muddy Creek and Little Snake	7,072	7,375	27,273	61,015	226,203	210,196	45,032	13,878	7,349	8,266	8,048	7,370	629,077
16.04	WY diversions between Muddy Creek and state line	7,072	7,375	27,273	61,015	226,203	210,696	45,697	14,542	8,050	8,537	8,174	7,370	632,005
16.06	CO diversions on Little Snake d/s of Muddy Creek	7,072	7,375	27,273	61,015	226,203	210,696	45,697	14,542	8,050	8,537	8,174	7,370	632,005
16.08	WY diversions between state line and Little Snake near Baggs	7,072	7,375	27,273	61,015	226,203	211,465	47,276	14,542	8,050	8,809	8,300	7,370	634,751
16.10	Little Snake River near Baggs (09259700)	7,072	7,375	27,273	61,015	226,203	211,465	47,276	14,542	8,050	8,809	8,300	7,370	634,751
16.12	CO diversions below Little Snake nr Baggs gage	7,853	8,154	27,913	61,426	226,203	211,465	47,806	15,319	8,772	9,580	9,074	8,149	641,712
16.14	Little Snake River near Lily, CO (09260000)	7,853	8,154	27,913	61,426	226,203	211,465	47,806	15,319	8,772	9,580	9,074	8,149	641,712

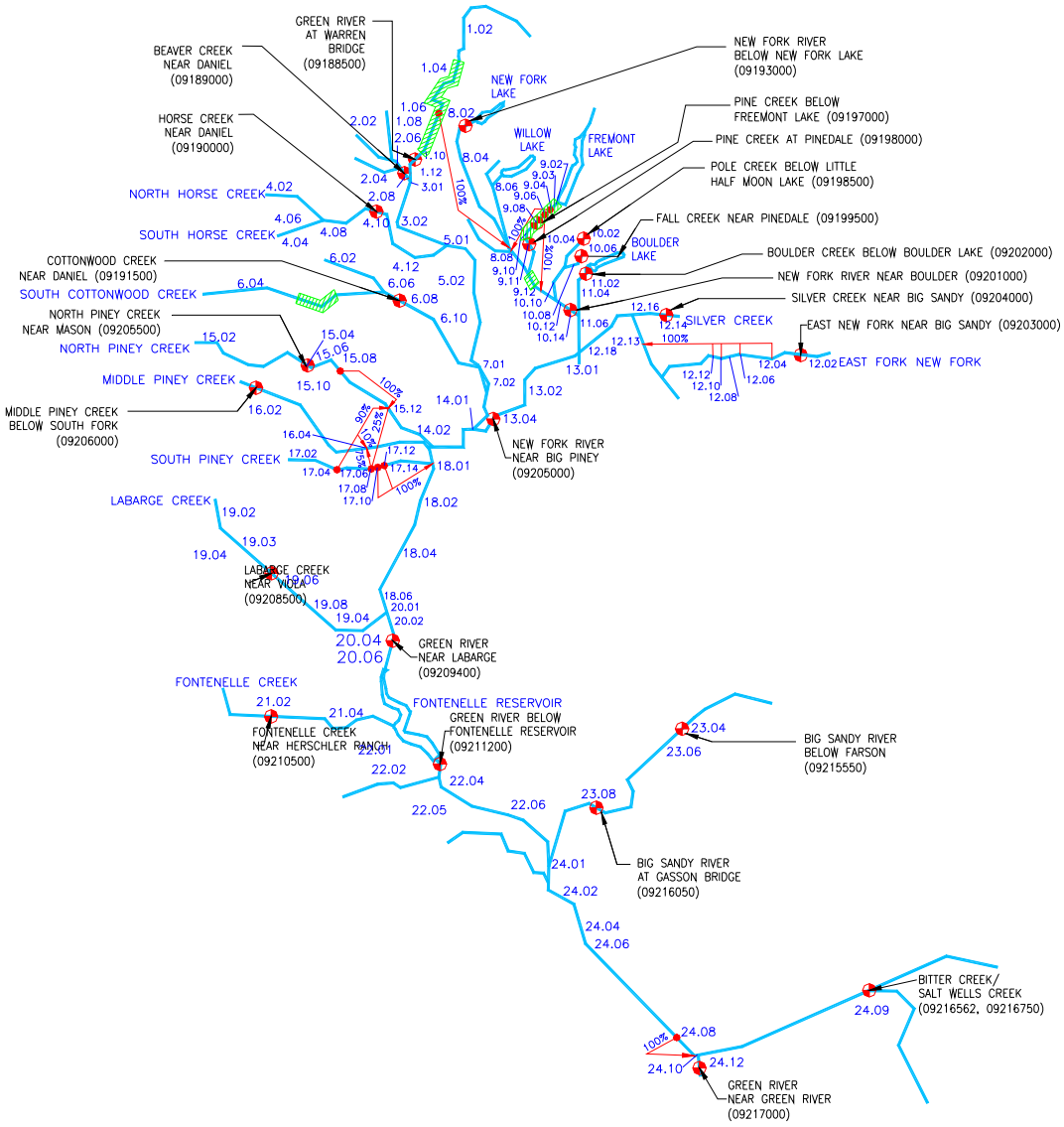

Figure A-4 Upper Green River Node Diagram

Table A-10
Available Flow for Upper Green River Basin and Dry Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Upper Green River Inflow	0	0	668	7,367	19,328	28,505	11,720	0	0	3,863	745	0	72,197
1.04	Agricultural diversions above Canyon Ditch including Upper Green River tributaries	0	0	668	10,288	32,117	36,626	11,720	0	0	3,863	745	0	96,028
1.06	Canyon Ditch	0	0	668	10,288	32,117	36,626	11,720	0	0	3,863	745	0	96,028
1.08	Green River between Canyon Ditch and Green River at Warren Bridge gage	0	0	668	10,288	32,117	36,626	11,720	0	0	3,863	745	0	96,028
1.10	Green River at Warren Bridge (09188500)	5,622	5,225	6,878	16,298	32,117	36,626	22,378	12,077	10,673	10,073	6,755	6,164	170,887
1.12	Green River between Green River at Warren Bridge and Beaver Creek	5,622	5,225	6,878	16,298	32,117	36,626	22,378	12,077	10,673	10,073	6,755	6,164	170,887
2.02	Middle & North Beaver Creek inflow & diversions	118	107	242	666	499	316	43	30	85	97	133	127	2,462
2.04	South Beaver Creek inflow & diversions	190	172	390	1,072	776	420	41	27	130	157	214	205	3,793
2.06	Beaver Creek mainstem	308	278	633	1,738	1,249	652	43	30	209	254	346	331	6,071
2.08	Beaver Creek near Daniel (09189000)	308	278	633	1,738	1,249	652	43	30	209	254	346	331	6,071
3.01	Confluence of Beaver Creek and Green River	5,990	5,596	7,762	18,099	32,117	36,626	22,378	12,077	10,673	10,409	7,247	6,559	175,533
3.02	Green River between Beaver and Horse Creeks	5,990	5,596	7,762	18,099	32,117	36,626	22,378	12,077	10,673	10,409	7,247	6,559	175,533
4.02	North Fork Horse Creek inflow & diversions	183	166	274	863	2,378	2,227	0	192	284	291	245	197	7,302
4.04	South Fork Horse Creek inflow & diversions	163	148	244	768	2,845	2,916	0	464	427	259	218	176	8,627
4.06	Confluence of North and South Fork Horse Creek	345	314	518	1,631	4,087	2,916	0	464	440	550	463	373	12,103
4.08	Between confluence of North and South Fork Horse Creek and Horse Creek near Daniel gage	345	314	518	1,631	4,087	2,916	0	464	440	550	463	373	12,103
4.10	Horse Creek near Daniel (09190000)	345	314	518	1,631	4,087	2,916	0	464	440	550	463	373	12,103
4.12	Below Horse Creek near	732	920	2,151	2,041	4,087	2,916	0	464	440	1,075	1,410	783	17,021

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Daniel Gage and above Green River													
5.01	Confluence of Horse Creek and Green River	6,722	6,516	9,914	20,140	32,117	36,626	22,378	12,077	10,673	11,484	8,657	7,342	184,646
5.02	Green River between Horse and Cottonwood Creeks	6,722	6,516	9,914	20,140	32,117	36,626	22,378	12,077	10,673	11,484	8,657	7,342	184,646
6.02	N Cottonwood Creek and tributaries inflow & diversions	0	0	0	0	0	0	0	0	0	0	0	0	0
6.04	S Cottonwood Creek and tributaries inflow & diversions	0	0	0	51	260	0	0	0	0	0	0	0	310
6.06	Confluence of North and South Cottonwood Creeks	372	366	706	1,717	1,073	0	0	0	97	787	677	491	6,286
6.08	Cottonwood Creek near Daniel (09191500)	372	366	706	1,717	1,073	0	0	0	97	787	677	491	6,286
6.10	Cottonwood Creek below Cottonwood Creek nr Daniel gage	968	1,298	3,219	2,347	1,073	0	0	0	97	1,595	2,134	1,122	13,852
7.01	Confluence of Cottonwood Creek and Green River	7,690	7,814	13,133	22,487	32,117	36,626	22,378	12,077	10,673	13,079	10,791	8,465	197,329
7.02	Green River between Cottonwood Creek and New Fork River	7,690	7,814	13,133	22,487	32,117	36,626	22,378	12,077	10,673	13,079	10,791	8,465	197,329
8.02	New Fork River below New Fork Lake, near Cora (09193000)	0	0	0	1,821	2,256	570	0	0	0	1,646	590	0	6,882
8.04	West Fork New Fork diversions above Willow Creek	0	0	0	1,821	2,256	570	0	0	0	1,646	590	0	6,882
8.06	Willow Creek	0	0	0	818	12,812	30,076	7,598	0	0	1,542	590	0	53,437
8.08	West Fork New Fork between Willow and Duck Creeks (including Duck Creek)	0	0	0	1,821	15,717	30,768	8,198	0	0	1,646	590	0	58,740
8.10	West Fork New Fork River between Duck Creek and Pine Creek	0	0	0	1,821	15,717	30,768	8,198	0	0	1,646	590	0	58,740
9.02	Pine Creek	0	0	0	591	8,199	11,412	2,872	0	0	1,646	0	0	24,719
9.03	Town of Pinedale	0	0	0	591	8,199	11,412	2,872	0	0	1,646	0	0	24,719
9.04	Fremont Ditch	0	0	0	665	8,199	11,412	2,872	0	0	1,646	0	0	24,793

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
9.06	Highland Canal	0	0	0	665	8,199	11,412	2,872	0	0	1,646	0	0	24,793
9.08	Pine Creek below Highland Canal	0	0	0	665	8,199	11,412	2,872	0	0	1,646	0	0	24,793
9.10	Aggregation above Pine Creek at Pinedale gage	0	0	0	665	8,199	11,412	2,872	0	0	1,646	0	0	24,793
9.11	Pine Creek at Pinedale (09198000)	0	0	0	665	8,199	11,412	2,872	0	0	1,646	0	0	24,793
9.12	West Fork New Fork River between Pine and Pole Creeks	0	0	0	1,821	19,871	36,626	10,420	0	0	1,646	590	0	70,973
10.02	Pole Creek below Little Half Moon Lake (09198500)	674	596	715	1,464	13,623	17,524	4,677	991	741	1,757	1,363	806	44,930
10.04	Pole Creek diversions above Fall Creek confluence	674	596	715	1,464	13,623	17,524	4,677	991	741	1,757	1,363	806	44,930
10.06	Fall Creek near Pinedale (09199500)	195	157	197	501	5,046	6,142	933	0	76	254	193	199	13,892
10.08	Fall Creek diversions	195	157	197	501	5,046	6,142	933	0	76	254	193	199	13,892
10.10	Pole Creek diversions between Fall Creek and West Fork New Fork	869	753	912	1,965	18,575	23,364	5,349	991	795	2,011	1,556	1,005	58,145
10.12	West Fork New Fork River between Pole and Boulder	5,069	4,199	5,537	9,439	24,717	36,626	19,273	8,485	5,560	9,498	7,798	6,301	142,501
10.14	New Fork River near Boulder (09201000)	5,069	4,199	5,537	9,439	24,717	36,626	19,273	8,485	5,560	9,498	7,798	6,301	142,501
11.02	Boulder Creek below Boulder Lake, near Boulder (09202000)	421	419	591	1,182	18,375	36,626	10,589	3,755	2,282	2,228	917	557	77,941
11.04	Boulder Creek diversions	421	419	591	1,182	18,375	36,626	10,589	3,755	2,282	2,228	917	557	77,941
11.06	West Fork New Fork River between Boulder Creek and East Fork New Fork River	5,490	4,617	6,128	10,621	32,117	36,626	24,423	12,156	7,827	11,726	8,715	6,858	167,304
12.02	East Fork New Fork near Big Sandy (09203000)	381	365	426	1,804	8,042	12,492	4,684	1,482	803	705	532	412	32,128
12.04	Overland Ditch	1,584	1,758	2,376	2,661	8,042	12,492	4,684	1,586	1,872	2,132	2,263	1,829	43,278
12.06	East Fork Ditch	1,584	1,758	2,376	2,661	8,042	12,492	4,684	1,586	1,872	2,132	2,263	1,829	43,278
12.08	East Fork aggregation	1,584	1,758	2,376	2,661	8,042	12,492	4,684	1,586	1,872	2,132	2,263	1,829	43,278
12.10	Gilligan-Iven Ditch	1,584	1,758	2,376	2,661	8,042	12,492	4,684	1,586	1,872	2,132	2,263	1,829	43,278
12.12	Tibbals Ditch	1,584	1,758	2,376	2,661	8,042	12,492	4,684	1,586	1,872	2,132	2,263	1,829	43,278
12.13	East Fork between Muddy and Silver Creeks	1,584	1,758	2,376	2,661	9,856	15,309	6,865	2,951	2,557	2,388	2,332	1,848	52,484

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
12.14	Silver Creek near Big Sandy (09204000)	164	109	201	1,026	9,230	5,621	1,179	39	187	490	314	227	18,787
12.16	Silver Creek diversions	1,367	1,501	2,151	1,884	9,230	5,621	3,185	1,699	1,727	1,917	2,045	1,643	33,970
12.18	East Fork New Fork diversions below Silver Creek	2,951	3,258	4,528	4,545	19,077	20,900	10,025	4,639	4,282	4,304	4,376	3,491	86,377
13.01	Confluence of East Fork and West Fork New Fork River	10,846	10,660	14,557	16,880	32,117	36,626	24,423	20,344	10,673	18,883	16,552	13,182	225,743
13.02	New Fork diversions below East and West Forks	10,846	10,660	14,557	16,880	32,117	36,626	24,423	20,344	10,673	18,883	16,552	13,182	225,743
13.04	New Fork River near Big Piney (09205000)	10,846	10,660	14,557	16,880	32,117	36,626	24,423	20,344	10,673	18,883	16,552	13,182	225,743
14.01	Confluence of New Fork River and Green River	18,536	18,474	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	21,646	282,179
14.02	Green River between New Fork River and Piney Creeks	18,536	18,474	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	21,646	282,179
15.02	Upper North Piney Creek inflow & diversions	492	419	564	901	1,142	0	968	1,157	516	969	729	542	8,400
15.04	North Piney Creek near Mason (09205500)	492	419	564	901	1,142	0	968	1,157	516	969	729	542	8,400
15.06	North Piney Canal	1,087	1,352	3,076	1,299	1,142	0	968	1,157	516	1,777	2,186	1,173	15,734
15.08	Between North Piney Canal and Musselman	1,087	1,352	3,076	1,299	1,142	0	968	1,157	516	1,777	2,186	1,173	15,734
15.10	Musselman	1,087	1,352	3,076	1,299	1,142	0	968	1,157	516	1,777	2,186	1,173	15,734
15.12	Below Musselman	1,087	1,352	3,076	1,299	1,142	0	968	1,157	579	1,849	2,213	1,181	15,904
16.02	Middle Piney Creek below South Fork, near Big Piney (09206000)	311	278	343	495	770	0	834	679	410	525	417	333	5,394
16.04	Aggregation below Middle Piney gage	965	1,304	3,106	1,188	770	0	834	1,388	410	1,436	2,026	1,028	14,455
17.02	Upper South Piney Creek including Fish & Beaver Creeks	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989
17.04	South Piney Ditch	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989
17.06	Aggregation between South Piney and Yankee Ditch	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989
17.08	Homestake Ditch	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989
17.10	Yankee Ditch	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989
17.12	Reardon Ditch	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
17.14	Aggregation below Reardon	884	1,098	2,520	1,779	3,282	1,370	0	659	480	1,298	1,674	945	15,989
18.01	Confluence of Pineys and Green River	21,466	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	24,794	290,925
18.02	Confluence of Dry Piney and Green River	21,466	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	24,794	290,925
18.04	Green River between Dry Piney and LaBarge Creek	21,466	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	24,794	290,925
18.06	Town of LaBarge	21,466	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	24,794	290,925
19.02	LaBarge Creek inflow & diversions	2,142	1,927	2,321	4,071	9,067	7,692	3,336	2,331	2,338	2,230	2,326	2,445	42,227
19.03	Anderson-Howard Ditch	2,142	1,927	2,321	3,588	7,437	6,170	2,542	1,835	2,106	2,230	2,326	2,445	37,068
19.04	LaBarge Creek near Viola (09208500)	2,142	1,927	2,321	3,588	7,437	6,170	2,542	1,835	2,106	2,230	2,326	2,445	37,068
19.06	Below LaBarge Creek near Viola gage and above LaBarge No. 2 Ditch	2,142	1,927	2,321	3,588	7,132	4,305	2,130	1,835	2,055	2,230	2,326	2,445	34,436
19.08	LaBarge No. 2 Ditch	2,142	1,927	2,321	3,588	6,305	3,538	1,693	1,833	1,980	2,230	2,326	2,445	32,327
20.01	Confluence of LaBarge Creek and Green River	23,847	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	27,497	296,009
20.02	Green River between LaBarge and Green River near LaBarge Gage	23,847	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	27,497	296,009
20.04	Green River near LaBarge (09209400)	23,847	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	27,497	296,009
20.06	Between Green River nr LaBarge gage and Fontenelle Res	23,847	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	27,504	296,015
21.02	Fontenelle Creek nr Herschler Ranch (09210500)	1,373	1,317	2,130	3,464	4,810	2,055	1,176	772	942	1,765	1,524	1,464	22,791
21.04	Below Fontenelle Creek nr Herschler Ranch gage	1,373	1,317	2,130	3,464	4,810	2,055	1,176	772	942	1,765	1,524	1,464	22,791
22.01	Fontenelle Reservoir	29,272	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	31,246	305,183
22.02	Green River below Fontenelle Reservoir (09211200)	29,272	21,143	16,984	29,629	32,117	36,626	24,423	20,759	10,673	25,466	26,846	31,246	305,183
22.04	Confluence of Slate Creek and Green River	53,147	44,190	42,501	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	585,717
22.05	Exxon Shute Creek	53,147	44,190	42,501	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	585,717
22.06	Seedskadee National Wildlife Refuge	53,147	44,190	42,501	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	585,717

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
23.04	Big Sandy River below Farson (09215550)	157	156	1,245	1,136	463	635	863	822	585	982	731	294	8,067
23.06	Confluence of Bone Draw and Big Sandy	1,410	1,333	2,995	2,755	1,882	2,061	2,285	2,257	2,053	2,755	2,353	1,673	25,813
23.08	Big Sandy River at Gasson Bridge, near Eden (09216050)	1,410	1,333	2,995	2,755	1,882	2,061	2,285	2,257	2,053	2,755	2,353	1,673	25,813
24.01	Confluence of Big Sandy River and Green River	53,147	45,212	45,468	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	589,706
24.02	FMC-Westvaco / FMC-Granger / Town of Granger	53,147	45,212	45,468	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	589,706
24.04	OCI	53,147	45,212	45,468	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	589,706
24.06	General Chemical / Church & Dwight / Solvay	53,147	45,212	45,468	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	589,706
24.08	Rock Springs/Green River/Sweetwater County JPB / Simplot (FS Industries) / Jim Bridger Pipeline	53,147	45,212	45,468	54,184	55,423	58,759	46,856	42,317	33,210	50,045	51,019	54,066	589,706
24.09	Bitter Creek (09216562) and Salt Wells (09216750)	30	431	1,169	1,823	1,838	282	635	1,201	102	254	62	51	7,877
24.10	Confluence of Bitter Creek and Green River	53,496	45,979	46,963	56,349	55,423	58,759	46,856	42,317	33,210	50,611	51,292	54,066	595,320
24.12	Green River near Green River (09217000)	53,496	45,979	46,963	56,349	55,423	58,759	46,856	42,317	33,210	50,611	51,292	54,066	595,320

Table A-11
Available Flow for Upper Green River Basin and Normal Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Upper Green River Inflow	596	451	1,713	7,966	26,983	41,899	34,069	8,103	0	5,772	2,990	1,364	131,905
1.04	Agricultural diversions above Canyon Ditch including Upper Green River tributaries	596	451	1,713	11,613	53,486	86,688	53,852	8,103	0	6,559	2,990	1,364	227,415
1.06	Canyon Ditch	596	451	1,713	11,613	53,486	86,688	53,852	8,103	0	6,559	2,990	1,364	227,415
1.08	Green River between Canyon Ditch and Green River at Warren Bridge gage	596	451	1,713	11,613	53,486	86,688	53,852	8,103	0	6,559	2,990	1,364	227,415
1.10	Green River at Warren Bridge (09188500)	6,806	6,060	7,924	17,623	59,354	90,027	70,308	26,073	16,394	12,769	9,000	7,575	329,911
1.12	Green River between Green River at Warren Bridge and Beaver Creek	6,806	6,060	7,924	17,623	59,354	90,027	70,308	26,073	16,394	12,769	9,000	7,575	329,911
2.02	Middle & North Beaver Creek inflow & diversions	216	204	269	2,548	2,400	1,084	36	86	64	180	262	227	7,577
2.04	South Beaver Creek inflow & diversions	349	329	434	4,105	3,835	1,679	36	84	90	290	423	365	12,019
2.06	Beaver Creek mainstem	565	533	704	6,653	6,205	2,699	36	119	141	470	685	592	19,403
2.08	Beaver Creek near Daniel (09189000)	565	533	704	6,653	6,205	2,699	36	119	141	470	685	592	19,403
3.01	Confluence of Beaver Creek and Green River	7,396	6,632	8,834	24,532	63,362	90,027	70,308	26,073	16,394	13,283	9,785	8,214	344,839
3.02	Green River between Beaver and Horse Creeks	7,396	6,632	8,834	24,532	63,362	90,027	70,308	26,073	16,394	13,283	9,785	8,214	344,839
4.02	North Fork Horse Creek inflow & diversions	392	358	479	2,320	7,426	7,855	532	291	346	604	503	414	21,520
4.04	South Fork Horse Creek inflow & diversions	349	319	426	2,065	7,441	8,751	1,615	993	639	538	448	368	23,951
4.06	Confluence of North and South Fork Horse Creek	740	677	905	4,385	13,568	13,858	1,615	993	759	1,142	951	782	40,376
4.08	Between confluence of North and South Fork Horse Creek and Horse Creek near Daniel gage	740	677	905	4,385	13,568	13,858	1,615	993	759	1,142	951	782	40,376
4.10	Horse Creek near Daniel (09190000)	740	677	905	4,385	13,568	13,858	1,615	993	759	1,142	951	782	40,376
4.12	Below Horse Creek near	900	931	2,247	6,049	13,568	13,858	4,675	3,467	1,242	1,425	1,601	1,091	51,054

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Daniel Gage and above Green River													
5.01	Confluence of Horse Creek and Green River	8,296	7,564	11,081	30,582	75,496	100,853	71,690	27,147	17,066	14,708	11,385	9,305	385,170
5.02	Green River between Horse and Cottonwood Creeks	8,296	7,564	11,081	30,582	75,496	100,853	71,690	27,147	17,066	14,708	11,385	9,305	385,170
6.02	N Cottonwood Creek and tributaries inflow & diversions	0	0	26	1,309	2,078	2,730	570	0	8	164	47	0	6,932
6.04	S Cottonwood Creek and tributaries inflow & diversions	0	0	131	2,660	5,194	5,473	933	0	0	19	163	0	14,572
6.06	Confluence of North and South Cottonwood Creeks	986	884	1,359	5,933	8,897	7,972	4,085	1,811	1,144	1,720	1,373	1,021	37,183
6.08	Cottonwood Creek near Daniel (09191500)	986	884	1,359	5,933	8,897	7,972	4,085	1,811	1,144	1,720	1,373	1,021	37,183
6.10	Cottonwood Creek below Cottonwood Creek nr Daniel gage	1,232	1,275	3,424	8,493	8,897	7,972	7,764	4,871	1,709	2,155	2,371	1,496	51,659
7.01	Confluence of Cottonwood Creek and Green River	9,527	8,838	14,505	39,075	83,748	107,461	77,974	30,942	18,519	16,863	13,757	10,801	432,010
7.02	Green River between Cottonwood Creek and New Fork River	9,527	8,838	14,505	39,075	83,748	107,461	77,974	30,942	18,519	16,863	13,757	10,801	432,010
8.02	New Fork River below New Fork Lake, near Cora (09193000)	0	0	0	2,826	3,577	10,384	5,088	1,266	1,972	2,073	420	0	27,604
8.04	West Fork New Fork diversions above Willow Creek	0	0	0	4,853	3,577	10,384	5,088	1,266	1,972	2,073	420	0	29,632
8.06	Willow Creek	0	0	0	1,424	15,450	42,494	17,436	5,187	2,947	2,182	420	0	87,541
8.08	West Fork New Fork between Willow and Duck Creeks (including Duck Creek)	0	0	0	4,853	19,243	53,568	23,570	7,675	2,947	2,182	420	0	114,459
8.10	West Fork New Fork River between Duck Creek and Pine Creek	0	0	0	4,853	19,243	53,568	23,570	7,675	2,947	2,182	420	0	114,459
9.02	Pine Creek	0	0	0	1,959	11,092	31,933	17,918	5,620	2,181	1,830	0	0	72,533
9.03	Town of Pinedale	0	0	0	1,959	11,092	31,933	17,918	5,620	2,181	1,830	0	0	72,533
9.04	Fremont Ditch	0	0	0	2,042	11,092	31,933	17,918	5,620	2,181	1,863	0	0	72,648

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
9.06	Highland Canal	0	0	0	2,042	11,092	31,933	17,918	5,620	2,181	1,863	0	0	72,648
9.08	Pine Creek below Highland Canal	0	0	0	2,042	11,092	31,933	17,918	5,620	2,181	1,863	0	0	72,648
9.10	Aggregation above Pine Creek at Pinedale gage	0	0	0	2,042	11,092	31,933	17,918	5,620	2,181	1,863	0	0	72,648
9.11	Pine Creek at Pinedale (09198000)	0	0	0	2,042	11,092	31,933	17,918	5,620	2,181	1,863	0	0	72,648
9.12	West Fork New Fork River between Pine and Pole Creeks	0	0	0	4,853	25,661	86,634	40,999	8,376	2,947	2,182	420	0	172,072
10.02	Pole Creek below Little Half Moon Lake (09198500)	986	912	965	1,853	15,117	31,085	13,861	3,474	1,572	1,562	1,098	1,004	73,490
10.04	Pole Creek diversions above Fall Creek confluence	986	912	965	1,853	15,117	31,085	13,861	3,474	1,572	1,562	1,098	1,004	73,490
10.06	Fall Creek near Pinedale (09199500)	288	282	314	594	6,452	12,274	4,031	564	273	271	255	280	25,878
10.08	Fall Creek diversions	288	282	314	594	6,452	12,274	4,031	564	273	271	255	280	25,878
10.10	Pole Creek diversions between Fall Creek and West Fork New Fork	1,273	1,194	1,279	2,447	21,458	43,102	17,642	3,920	1,833	1,834	1,353	1,285	98,619
10.12	West Fork New Fork River between Pole and Boulder	5,685	5,398	6,683	12,953	32,098	91,350	55,793	18,136	9,362	8,548	7,426	6,225	259,658
10.14	New Fork River near Boulder (09201000)	5,685	5,398	6,683	12,953	32,098	91,350	55,793	18,136	9,362	8,548	7,426	6,225	259,658
11.02	Boulder Creek below Boulder Lake, near Boulder (09202000)	994	859	1,013	2,057	22,159	61,021	24,821	7,319	4,937	3,429	1,431	1,165	131,203
11.04	Boulder Creek diversions	994	859	1,013	2,057	22,159	61,021	24,821	7,319	4,937	3,429	1,431	1,165	131,203
11.06	West Fork New Fork River between Boulder Creek and East Fork New Fork River	6,679	6,257	7,696	15,010	54,177	152,186	80,433	25,370	14,290	11,977	8,856	7,389	390,321
12.02	East Fork New Fork near Big Sandy (09203000)	626	545	658	2,194	15,695	24,351	8,132	2,109	1,372	1,364	1,002	778	58,824
12.04	Overland Ditch	1,887	1,770	2,810	4,138	15,695	24,351	8,132	2,109	1,916	3,597	3,363	2,290	72,057
12.06	East Fork Ditch	1,887	1,770	2,810	4,138	15,695	24,351	8,132	2,109	1,916	3,597	3,363	2,290	72,057
12.08	East Fork aggregation	1,887	1,770	2,810	4,138	15,695	24,351	8,132	2,109	1,916	3,597	3,363	2,290	72,057
12.10	Gilligan-Iven Ditch	1,887	1,770	2,810	4,138	15,695	24,351	8,132	2,109	1,916	3,597	3,363	2,290	72,057
12.12	Tibbals Ditch	1,887	1,770	2,810	4,138	15,695	24,351	8,132	2,109	1,916	3,597	3,363	2,290	72,057
12.13	East Fork between Muddy and Silver Creeks	1,887	1,770	2,810	4,138	17,307	27,680	10,835	3,646	2,829	3,949	3,461	2,327	82,638

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
12.14	Silver Creek near Big Sandy (09204000)	157	153	201	700	12,001	15,229	2,471	185	510	270	211	186	32,272
12.16	Silver Creek diversions	1,419	1,377	2,353	2,644	12,001	15,229	4,067	1,659	1,860	2,503	2,572	1,698	49,382
12.18	East Fork New Fork diversions below Silver Creek	3,306	3,147	5,163	6,782	29,297	42,884	14,877	5,294	4,687	6,452	6,033	4,025	131,947
13.01	Confluence of East Fork and West Fork New Fork River	12,508	11,853	17,164	25,681	80,524	165,823	98,998	33,844	21,702	22,896	19,612	14,439	525,043
13.02	New Fork diversions below East and West Forks	12,508	11,853	17,164	25,681	80,524	165,823	98,998	33,844	21,702	22,896	19,612	14,439	525,043
13.04	New Fork River near Big Piney (09205000)	12,508	11,853	17,164	25,681	80,524	165,823	98,998	33,844	21,702	22,896	19,612	14,439	525,043
14.01	Confluence of New Fork River and Green River	22,035	20,691	31,669	63,605	123,487	189,233	141,054	63,795	37,315	33,159	31,216	25,240	782,499
14.02	Green River between New Fork River and Piney Creeks	22,035	20,691	31,669	63,605	123,487	189,233	141,054	63,795	37,315	33,159	31,216	25,240	782,499
15.02	Upper North Piney Creek inflow & diversions	737	678	843	1,627	4,143	6,701	6,680	2,504	1,568	1,289	990	806	28,564
15.04	North Piney Creek near Mason (09205500)	737	678	843	1,627	4,143	6,701	6,680	2,504	1,568	1,289	990	806	28,564
15.06	North Piney Canal	982	1,070	2,908	4,187	4,143	6,701	8,380	5,465	1,686	1,724	1,988	1,281	40,515
15.08	Between North Piney Canal and Musselman	982	1,070	2,908	4,187	4,143	6,701	8,380	5,465	1,686	1,724	1,988	1,281	40,515
15.10	Musselman	982	1,070	2,908	4,187	4,143	6,701	8,380	5,465	1,686	1,724	1,988	1,281	40,515
15.12	Below Musselman	982	1,070	2,908	4,187	4,143	6,701	8,380	5,465	1,686	1,835	2,019	1,290	40,665
16.02	Middle Piney Creek below South Fork, near Big Piney (09206000)	421	394	468	821	2,208	3,180	3,096	1,216	795	669	535	452	14,255
16.04	Aggregation below Middle Piney gage	691	825	2,740	3,638	2,208	3,180	8,407	6,336	1,786	1,247	1,669	985	33,710
17.02	Upper South Piney Creek including Fish & Beaver Creeks	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823
17.04	South Piney Ditch	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823
17.06	Aggregation between South Piney and Yankee Ditch	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823
17.08	Homestake Ditch	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823
17.10	Yankee Ditch	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823
17.12	Reardon Ditch	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823
17.14	Aggregation below Reardon	1,191	1,200	2,730	6,563	12,867	11,227	1,757	2,977	817	1,965	2,110	1,417	46,823

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
18.01	Confluence of Pineys and Green River	24,891	23,780	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	802,940
18.02	Confluence of Dry Piney and Green River	24,891	23,780	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	802,940
18.04	Green River between Dry Piney and LaBarge Creek	24,891	23,780	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	802,940
18.06	Town of LaBarge	24,891	23,780	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	802,940
19.02	LaBarge Creek inflow & diversions	2,885	2,629	3,138	5,767	16,398	15,362	7,934	4,652	3,542	4,120	3,453	3,088	72,969
19.03	Anderson-Howard Ditch	2,885	2,629	3,138	5,767	14,749	11,099	4,544	3,140	3,096	4,120	3,453	3,088	61,708
19.04	LaBarge Creek near Viola (09208500)	2,885	2,629	3,138	5,767	14,749	11,099	4,544	3,140	3,096	4,120	3,453	3,088	61,708
19.06	Below LaBarge Creek near Viola gage and above LaBarge No. 2 Ditch	2,885	2,629	3,138	5,767	14,619	10,542	4,544	3,140	3,096	4,120	3,453	3,088	61,021
19.08	LaBarge No. 2 Ditch	2,885	2,629	3,138	5,767	13,135	9,272	4,544	3,140	3,096	4,120	3,453	3,088	58,267
20.01	Confluence of LaBarge Creek and Green River	27,874	26,565	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	808,709
20.02	Green River between LaBarge and Green River near LaBarge Gage	27,874	26,565	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	808,709
20.04	Green River near LaBarge (09209400)	27,874	26,565	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	808,709
20.06	Between Green River nr LaBarge gage and Fontenelle Res	27,874	26,565	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	808,709
21.02	Fontenelle Creek nr Herschler Ranch (09210500)	1,496	1,459	2,084	5,903	12,132	11,069	3,780	1,832	1,615	1,982	1,807	1,568	46,726
21.04	Below Fontenelle Creek nr Herschler Ranch gage	1,496	1,459	2,084	5,903	12,132	11,069	3,780	1,832	1,615	1,982	1,807	1,568	46,726
22.01	Fontenelle Reservoir	28,976	28,687	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	811,933
22.02	Green River below Fontenelle Reservoir (09211200)	28,976	28,687	35,640	63,605	123,487	189,233	141,054	71,462	37,315	33,159	31,216	28,098	811,933
22.04	Confluence of Slate Creek and Green River	54,488	51,418	61,154	88,297	149,000	213,920	166,562	95,820	61,660	58,671	55,905	53,572	1,110,468
22.05	Exxon Shute Creek	54,488	51,418	61,154	88,297	149,000	213,920	166,562	95,820	61,660	58,671	55,905	53,572	1,110,468
22.06	Seedskadee National Wildlife Refuge	54,488	51,418	61,154	88,297	149,000	213,920	166,562	95,820	61,660	58,671	55,905	53,572	1,110,468
23.04	Big Sandy River below Farson (09215550)	409	379	2,593	3,553	2,320	3,422	3,320	2,592	2,107	1,661	1,400	767	24,523

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
23.06	Confluence of Bone Draw and Big Sandy	1,793	1,693	4,394	5,427	4,097	5,171	5,190	4,570	4,113	3,524	3,105	2,212	45,291
23.08	Big Sandy River at Gasson Bridge, near Eden (09216050)	1,793	1,693	4,394	5,427	4,097	5,171	5,190	4,570	4,113	3,524	3,105	2,212	45,291
24.01	Confluence of Big Sandy River and Green River	54,681	51,418	65,400	91,451	149,603	217,771	168,066	95,820	61,660	59,246	57,319	53,572	1,126,008
24.02	FMC-Westvaco / FMC-Granger / Town of Granger	54,681	51,418	65,400	91,451	149,603	217,771	168,066	95,820	61,660	59,246	57,319	53,572	1,126,008
24.04	OCI	54,681	51,418	65,400	91,451	149,603	217,771	168,066	95,820	61,660	59,246	57,319	53,572	1,126,008
24.06	General Chemical / Church & Dwight / Solvay	54,681	51,418	65,400	91,451	149,603	217,771	168,066	95,820	61,660	59,246	57,319	53,572	1,126,008
24.08	Rock Springs/Green River/Sweetwater County JPB / Simplot (FS Industries) / Jim Bridger Pipeline	54,681	51,418	65,400	91,451	149,603	217,771	168,066	95,820	61,660	59,246	57,319	53,572	1,126,008
24.09	Bitter Creek (09216562) and Salt Wells (09216750)	30	431	1,169	1,823	1,838	282	635	1,201	102	254	62	51	7,877
24.10	Confluence of Bitter Creek and Green River	55,050	52,193	66,897	93,675	151,706	218,390	169,103	97,343	62,109	59,811	57,595	53,860	1,137,732
24.12	Green River near Green River (09217000)	55,050	52,193	66,897	93,675	151,706	218,390	169,103	97,343	62,109	59,811	57,595	53,860	1,137,732

Table A-12
Available Flow for Upper Green River Basin and Wet Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Upper Green River Inflow	1,257	863	2,281	7,546	35,241	77,688	43,762	20,389	4,444	5,959	4,006	3,118	206,554
1.04	Agricultural diversions above Canyon Ditch including Upper Green River tributaries	1,257	863	2,281	10,684	71,756	165,865	75,298	23,588	4,444	6,973	4,006	3,118	370,134
1.06	Canyon Ditch	1,257	863	2,281	10,684	71,756	165,865	75,298	23,588	4,444	6,973	4,006	3,118	370,134
1.08	Green River between Canyon Ditch and Green River at Warren Bridge gage	1,257	863	2,281	10,684	71,756	165,865	75,298	23,588	4,444	6,973	4,006	3,118	370,134
1.10	Green River at Warren Bridge (09188500)	7,468	6,473	8,491	16,694	77,481	171,185	92,835	41,887	23,079	13,184	10,016	9,329	478,121
1.12	Green River between Green River at Warren Bridge and Beaver Creek	7,468	6,473	8,491	16,694	77,481	171,185	92,835	41,887	23,079	13,184	10,016	9,329	478,121
2.02	Middle & North Beaver Creek inflow & diversions	260	232	316	3,415	6,084	2,665	495	270	129	253	328	291	14,738
2.04	South Beaver Creek inflow & diversions	419	374	508	5,502	9,756	4,229	726	380	203	407	529	469	23,503
2.06	Beaver Creek mainstem	679	607	824	8,917	15,797	6,834	1,153	599	327	660	857	761	38,014
2.08	Beaver Creek near Daniel (09189000)	679	607	824	8,917	15,797	6,834	1,153	599	327	660	857	761	38,014
3.01	Confluence of Beaver Creek and Green River	8,211	7,164	9,705	25,685	90,167	174,196	92,835	41,887	23,206	13,888	11,004	10,099	508,047
3.02	Green River between Beaver and Horse Creeks	8,211	7,164	9,705	25,685	90,167	174,196	92,835	41,887	23,206	13,888	11,004	10,099	508,047
4.02	North Fork Horse Creek inflow & diversions	465	427	566	3,003	11,638	15,440	3,618	1,234	717	911	783	497	39,299
4.04	South Fork Horse Creek inflow & diversions	414	380	504	2,672	11,536	15,416	5,071	2,509	758	811	697	442	41,209
4.06	Confluence of North and South Fork Horse	878	807	1,070	5,676	21,334	29,713	7,427	2,782	1,392	1,722	1,480	939	75,220

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Creek													
4.08	Between confluence of North and South Fork Horse Creek and Horse Creek near Daniel gage	878	807	1,070	5,676	21,334	29,713	7,427	2,782	1,392	1,722	1,480	939	75,220
4.10	Horse Creek near Daniel (09190000)	878	807	1,070	5,676	21,334	29,713	7,427	2,782	1,392	1,722	1,480	939	75,220
4.12	Below Horse Creek near Daniel Gage and above Green River	1,299	1,359	3,601	6,164	21,334	32,130	9,096	4,666	2,043	2,009	2,329	1,005	87,034
5.01	Confluence of Horse Creek and Green River	9,510	8,523	13,306	31,849	109,470	203,440	98,743	44,123	25,042	15,897	13,333	11,104	584,340
5.02	Green River between Horse and Cottonwood Creeks	9,510	8,523	13,306	31,849	109,470	203,440	98,743	44,123	25,042	15,897	13,333	11,104	584,340
6.02	N Cottonwood Creek and tributaries inflow & diversions	0	0	0	2,964	5,161	6,265	3,568	498	189	103	73	0	18,823
6.04	S Cottonwood Creek and tributaries inflow & diversions	0	0	36	5,346	9,937	11,276	5,846	1,195	56	0	205	0	33,897
6.06	Confluence of North and South Cottonwood Creeks	699	710	1,205	10,273	16,069	20,636	11,997	4,276	1,780	1,562	1,441	871	71,519
6.08	Cottonwood Creek near Daniel (09191500)	699	710	1,205	10,273	16,069	20,636	11,997	4,276	1,780	1,562	1,441	871	71,519
6.10	Cottonwood Creek below Cottonwood Creek nr Daniel gage	1,346	1,560	5,099	11,024	16,069	23,453	13,570	6,417	2,716	2,003	2,746	972	86,976
7.01	Confluence of Cottonwood Creek and Green River	10,856	10,082	18,405	42,874	124,626	225,596	110,881	49,448	27,665	17,900	16,079	12,077	666,489
7.02	Green River between Cottonwood Creek and New Fork River	10,856	10,082	18,405	42,874	124,626	225,596	110,881	49,448	27,665	17,900	16,079	12,077	666,489
8.02	New Fork River below New Fork Lake, near Cora (09193000)	162	334	1,203	2,524	4,287	16,820	12,176	1,930	2,873	2,229	1,969	863	47,370
8.04	West Fork New Fork diversions above	162	334	1,203	6,829	4,287	16,820	12,176	1,930	2,873	2,948	3,172	863	53,598

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Willow Creek													
8.06	Willow Creek	162	334	1,203	2,504	18,895	52,300	30,246	9,789	6,781	2,434	1,096	863	126,608
8.08	West Fork New Fork between Willow and Duck Creeks (including Duck Creek)	162	334	1,203	9,333	23,422	69,028	44,625	13,496	10,362	4,767	3,172	863	180,768
8.10	West Fork New Fork River between Duck Creek and Pine Creek	162	334	1,203	9,333	23,422	69,028	44,625	13,496	10,362	4,767	3,172	863	180,768
9.02	Pine Creek	162	190	544	4,039	15,098	44,005	37,363	11,931	4,230	3,117	521	562	121,761
9.03	Town of Pinedale	162	190	544	4,039	15,098	44,005	37,363	11,931	4,230	3,117	521	562	121,761
9.04	Fremont Ditch	162	273	643	4,121	15,098	44,005	37,363	11,931	4,230	3,149	597	612	122,186
9.06	Highland Canal	162	273	643	4,121	15,098	44,005	37,363	11,931	4,230	3,149	597	612	122,186
9.08	Pine Creek below Highland Canal	162	273	643	4,121	15,098	44,005	37,363	11,931	4,230	3,149	597	612	122,186
9.10	Aggregation above Pine Creek at Pinedale gage	162	273	643	4,121	15,098	44,005	37,363	11,931	4,230	3,149	597	612	122,186
9.11	Pine Creek at Pinedale (09198000)	162	273	643	4,121	15,098	44,005	37,363	11,931	4,230	3,149	597	612	122,186
9.12	West Fork New Fork River between Pine and Pole Creeks	162	334	1,203	9,349	33,183	112,806	80,301	19,905	10,362	4,767	3,172	863	276,408
10.02	Pole Creek below Little Half Moon Lake (09198500)	1,452	1,303	1,140	2,257	15,853	42,150	27,135	7,254	2,831	1,009	1,073	1,392	104,850
10.04	Pole Creek diversions above Fall Creek confluence	1,452	1,303	1,140	2,257	15,853	42,150	27,135	7,254	2,831	1,009	1,073	1,392	104,850
10.06	Fall Creek near Pinedale (09199500)	457	415	390	1,001	7,752	18,141	8,530	1,498	406	213	281	400	39,483
10.08	Fall Creek diversions	457	415	390	1,001	7,752	18,141	8,530	1,498	406	213	281	400	39,483
10.10	Pole Creek diversions between Fall Creek and West Fork New Fork	1,909	1,718	1,530	3,258	23,548	60,074	35,420	8,626	3,236	1,223	1,354	1,792	143,686
10.12	West Fork New Fork River between Pole and Boulder	7,913	7,327	8,574	18,260	42,320	122,156	105,408	34,240	14,589	11,831	10,179	8,496	391,295
10.14	New Fork River near Boulder (09201000)	7,913	7,327	8,574	18,260	42,320	122,156	105,408	34,240	14,589	11,831	10,179	8,496	391,295

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
11.02	Boulder Creek below Boulder Lake, near Boulder (09202000)	1,456	1,802	2,291	3,618	27,219	75,251	43,340	13,957	9,798	3,518	1,584	1,306	185,139
11.04	Boulder Creek diversions	1,456	1,802	2,291	3,618	27,219	75,251	43,340	13,957	9,798	3,518	1,584	1,306	185,139
11.06	West Fork New Fork River between Boulder Creek and East Fork New Fork River	9,369	9,130	10,865	21,878	69,498	197,249	148,572	48,106	24,386	15,349	11,762	9,802	575,966
12.02	East Fork New Fork near Big Sandy (09203000)	828	679	956	2,284	19,444	46,864	9,034	1,753	1,207	1,851	1,235	944	87,079
12.04	Overland Ditch	1,682	1,289	3,376	4,795	19,444	46,864	9,034	1,753	1,207	4,611	3,419	2,447	99,920
12.06	East Fork Ditch	1,682	1,289	3,376	4,795	19,444	46,864	9,034	1,753	1,207	4,611	3,419	2,447	99,920
12.08	East Fork aggregation	1,682	1,289	3,376	4,795	19,444	46,864	9,034	1,753	1,207	4,611	3,419	2,447	99,920
12.10	Gilligan-Iven Ditch	1,682	1,289	3,376	4,795	19,444	46,864	9,034	1,753	1,207	4,611	3,419	2,447	99,920
12.12	Tibbals Ditch	1,682	1,289	3,376	4,795	19,444	46,864	9,034	1,753	1,207	4,611	3,419	2,447	99,920
12.13	East Fork between Muddy and Silver Creeks	1,682	1,289	3,376	4,795	19,872	48,958	12,378	4,193	3,012	5,566	3,668	2,554	111,341
12.14	Silver Creek near Big Sandy (09204000)	199	180	222	1,086	14,718	24,943	3,740	319	1,061	511	273	199	47,449
12.16	Silver Creek diversions	1,053	789	2,642	3,596	14,718	28,876	3,740	652	1,899	3,271	2,457	1,702	65,396
12.18	East Fork New Fork diversions below Silver Creek	2,735	2,078	6,018	8,391	34,584	77,813	16,094	4,832	4,911	8,837	6,125	4,256	176,674
13.01	Confluence of East Fork and West Fork New Fork River	13,811	12,426	21,724	35,291	77,779	283,363	155,060	53,854	30,975	29,706	22,255	17,064	753,308
13.02	New Fork diversions below East and West Forks	13,811	12,426	21,724	35,291	77,779	283,363	155,060	53,854	30,975	29,706	22,255	17,064	753,308
13.04	New Fork River near Big Piney (09205000)	13,811	12,426	21,724	35,291	77,779	283,363	155,060	53,854	30,975	29,706	22,255	17,064	753,308
14.01	Confluence of New Fork River and Green River	24,668	22,509	40,129	78,165	193,474	454,430	264,621	102,297	54,192	47,606	26,050	29,140	1,337,280
14.02	Green River between New Fork River and Piney Creeks	24,668	22,509	40,129	78,165	193,474	454,430	264,621	102,297	54,192	47,606	26,050	29,140	1,337,280
15.02	Upper North Piney	668	659	892	1,950	5,785	20,728	12,319	3,857	2,201	1,258	998	762	52,077

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Creek inflow & diversions													
15.04	North Piney Creek near Mason (09205500)	668	659	892	1,950	5,785	20,728	12,319	3,857	2,201	1,258	998	762	52,077
15.06	North Piney Canal	1,316	1,508	4,786	2,701	5,785	20,728	12,319	6,247	2,486	1,700	2,303	864	62,742
15.08	Between North Piney Canal and Musselman	1,316	1,508	4,786	2,701	5,785	20,728	12,319	6,247	2,486	1,700	2,303	864	62,742
15.10	Musselman	1,316	1,508	4,786	2,701	5,785	20,728	12,319	6,247	2,486	1,700	2,303	864	62,742
15.12	Below Musselman	1,316	1,508	4,786	2,701	5,785	20,728	12,319	6,247	3,231	2,057	2,399	890	63,966
16.02	Middle Piney Creek below South Fork, near Big Piney (09206000)	390	385	491	967	3,029	9,549	5,887	1,825	1,080	655	538	432	25,228
16.04	Aggregation below Middle Piney gage	1,102	1,319	4,774	1,793	3,029	14,728	10,058	6,278	3,050	1,482	2,064	581	50,258
17.02	Upper South Piney Creek including Fish & Beaver Creeks	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
17.04	South Piney Ditch	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
17.06	Aggregation between South Piney and Yankee Ditch	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
17.08	Homestake Ditch	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
17.10	Yankee Ditch	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
17.12	Reardon Ditch	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
17.14	Aggregation below Reardon	1,440	1,542	4,111	7,639	21,381	23,775	782	2,343	900	2,119	2,543	1,105	69,680
18.01	Confluence of Pineys and Green River	28,518	26,872	53,795	85,533	193,474	454,430	289,290	106,476	54,192	50,067	26,050	30,406	1,399,102
18.02	Confluence of Dry Piney and Green River	28,518	26,872	53,795	85,533	193,474	454,430	289,290	106,476	54,192	50,067	26,050	30,406	1,399,102
18.04	Green River between Dry Piney and LaBarge Creek	28,518	26,872	53,795	85,533	193,474	454,430	289,290	106,476	54,192	50,067	26,050	30,406	1,399,102
18.06	Town of LaBarge	28,518	26,872	53,795	85,533	193,474	454,430	289,290	106,476	54,192	50,067	26,050	30,406	1,399,102
19.02	LaBarge Creek inflow & diversions	2,674	2,773	3,617	8,393	26,835	25,399	10,619	7,425	4,822	3,452	2,839	2,428	101,274
19.03	Anderson-Howard Ditch	2,674	2,773	3,617	8,393	24,128	20,172	7,747	5,913	4,376	3,452	2,839	2,428	88,510
19.04	LaBarge Creek near	2,674	2,773	3,617	8,393	24,128	20,172	7,747	5,913	4,376	3,452	2,839	2,428	88,510

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Viola (09208500)													
19.06	Below LaBarge Creek near Viola gage and above LaBarge No. 2 Ditch	2,674	2,773	3,617	8,393	23,651	20,172	7,747	5,913	4,376	3,452	2,839	2,428	88,033
19.08	LaBarge No. 2 Ditch	2,674	2,773	3,617	8,393	22,863	20,172	7,747	5,913	4,376	3,452	2,839	2,428	87,244
20.01	Confluence of LaBarge Creek and Green River	31,450	29,984	53,847	85,533	193,474	454,430	292,932	106,476	54,192	50,067	26,050	30,406	1,408,842
20.02	Green River between LaBarge and Green River near LaBarge Gage	31,450	29,984	53,847	85,533	193,474	454,430	292,932	106,476	54,192	50,067	26,050	30,406	1,408,842
20.04	Green River near LaBarge (09209400)	31,450	29,984	53,847	85,533	193,474	454,430	292,932	106,476	54,192	50,067	26,050	30,406	1,408,842
20.06	Between Green River nr LaBarge gage and Fontenelle Res	31,450	29,984	53,847	85,533	193,474	454,430	292,932	106,476	54,192	50,067	26,050	30,406	1,408,842
21.02	Fontenelle Creek nr Herschler Ranch (09210500)	1,892	1,677	2,437	8,646	23,761	25,566	7,429	3,342	2,871	2,207	1,930	1,776	83,535
21.04	Below Fontenelle Creek nr Herschler Ranch gage	1,892	1,677	2,437	8,646	23,761	25,566	7,429	3,342	2,871	2,207	1,930	1,776	83,535
22.01	Fontenelle Reservoir	33,891	38,207	53,847	85,533	193,474	454,430	292,932	106,476	54,192	50,067	26,050	30,406	1,419,506
22.02	Green River below Fontenelle Reservoir (09211200)	33,891	38,207	53,847	85,533	193,474	454,430	292,932	106,476	54,192	50,067	26,050	30,406	1,419,506
22.04	Confluence of Slate Creek and Green River	59,403	61,250	79,361	110,224	218,987	479,117	318,440	131,983	78,877	75,579	50,740	55,917	1,719,879
22.05	Exxon Shute Creek	59,403	61,250	79,361	110,224	218,987	479,117	318,440	131,983	78,877	75,579	50,740	55,917	1,719,879
22.06	Seedskadee National Wildlife Refuge	59,403	61,250	79,361	110,224	218,987	479,117	318,440	131,983	78,877	75,579	50,740	55,917	1,719,879
23.04	Big Sandy River below Farson (09215550)	567	711	6,816	7,484	4,806	17,995	8,773	3,664	2,874	1,712	1,304	883	57,590
23.06	Confluence of Bone Draw and Big Sandy	2,021	2,258	8,743	9,897	6,891	20,735	11,132	6,086	5,271	3,828	3,062	2,488	82,412
23.08	Big Sandy River at Gasson Bridge, near Eden (09216050)	2,021	2,258	8,743	9,897	6,891	20,735	11,132	6,086	5,271	3,828	3,062	2,488	82,412
24.01	Confluence of Big Sandy River and	63,497	64,332	94,470	119,407	221,360	493,460	338,379	136,004	80,708	75,755	52,562	56,524	1,796,457

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Green River													
24.02	FMC-Westvaco / FMC-Granger / Town of Granger	63,497	64,332	94,470	119,407	221,360	493,460	338,379	136,004	80,708	75,755	52,562	56,524	1,796,457
24.04	OCI	63,497	64,332	94,470	119,407	221,360	493,460	338,379	136,004	80,708	75,755	52,562	56,524	1,796,457
24.06	General Chemical / Church & Dwight / Solvay	63,497	64,332	94,470	119,407	221,360	493,460	338,379	136,004	80,708	75,755	52,562	56,524	1,796,457
24.08	Rock Springs/Green River/Sweetwater County JPB / Simplot (FS Industries) / Jim Bridger Pipeline	63,497	64,332	94,470	119,407	221,360	493,460	338,379	136,004	80,708	75,755	52,562	56,524	1,796,457
24.09	Bitter Creek (09216562) and Salt Wells (09216750)	30	431	1,169	1,823	1,838	282	635	1,201	102	254	62	51	7,877
24.10	Confluence of Bitter Creek and Green River	63,835	65,072	95,921	121,597	222,216	493,460	339,412	137,555	81,209	76,352	52,869	56,807	1,806,305
24.12	Green River near Green River (09217000)	63,835	65,072	95,921	121,597	222,216	493,460	339,412	137,555	81,209	76,352	52,869	56,807	1,806,305

Appendix B

Changes from 2001 Green River Basin Plan

Changes from the 2001 Green River Basin Plan

The updated estimate of available surface water is lower than than the 2001 Green River Basin Plan estimate, across nearly all basins and hydrologic conditions. **Table B-1** compares basinwide available surface water, per the two Green River Basin Plans.

Table B-1 Current Water Availability Estimates Compared with 2001 Plan Estimates

	2001 GRBP	Updated GRBP	Difference	% Difference
Black's Fork				
Dry	101,000	67,000	-34,000	-34%
Normal	229,000	195,000	-34,000	-15%
Wet	422,000	398,000	-24,000	-6%
Henry's Fork				
Dry	23,000	24,000	1,000	4%
Normal	60,000	52,000	-8,000	-13%
Wet	125,000	118,000	-7,000	-6%
Little Snake				
Dry	189,000	177,000	-12,000	-6%
Normal	449,000	407,000	-42,000	-9%
Wet	665,000	642,000	-23,000	-3%
Upper Green				
Dry	620,000	595,000	-25,000	-4%
Normal	1,269,000	1,138,000	-131,000	-10%
Wet	1,924,000	1,806,000	-118,000	-6%

The lower available flows evident in the table are due to the dryness of the years added to the study period. This change is described in Appendix A of the memo "Surface Water Data Collection and Study Period Selection".

The summary table above shows only the annual water availability at the lowest node in each basin. At upstream nodes, the updated values are consistently lower than values presented in the original basin plan, for several reasons:

1. **Drier hydrology**, as noted above.

2. **Refined availability analysis.** In the 2001 Green River Basin Plan, availability was analyzed on a reach basis rather than a node basis. In other words, availability was estimated at the outflow from Reach 1 as the minimum of physical flow at that point, and available flow at the "mouths" of all downstream reaches. In this study, availability was analyzed on a node basis, which is more conservative and more correct. The former approach did not capture the effects of critical points (a diversion that sweeps the stream, or an instream flow right) in the middle of a reach.

3. **Instream Flow Permits.** Five instream flow permits are included in the updated availability analysis, whereas the former analysis included only one instream flow

permit. The permits represent an additional demand for water, which would have priority ahead of a new use or project. The instream flow permits affect availability at their specific location, and at all nodes upstream of their location.

Incorporation of High Savery Reservoir changed availability estimates for the Little Snake River basin, as shown in **Figure B-1**. The spreadsheet model includes historical operations of the reservoir, averaged for 2006 through 2008. The same operations are represented in the Normal, Wet, and Dry models because there was not enough data to discriminate by hydrologic condition.

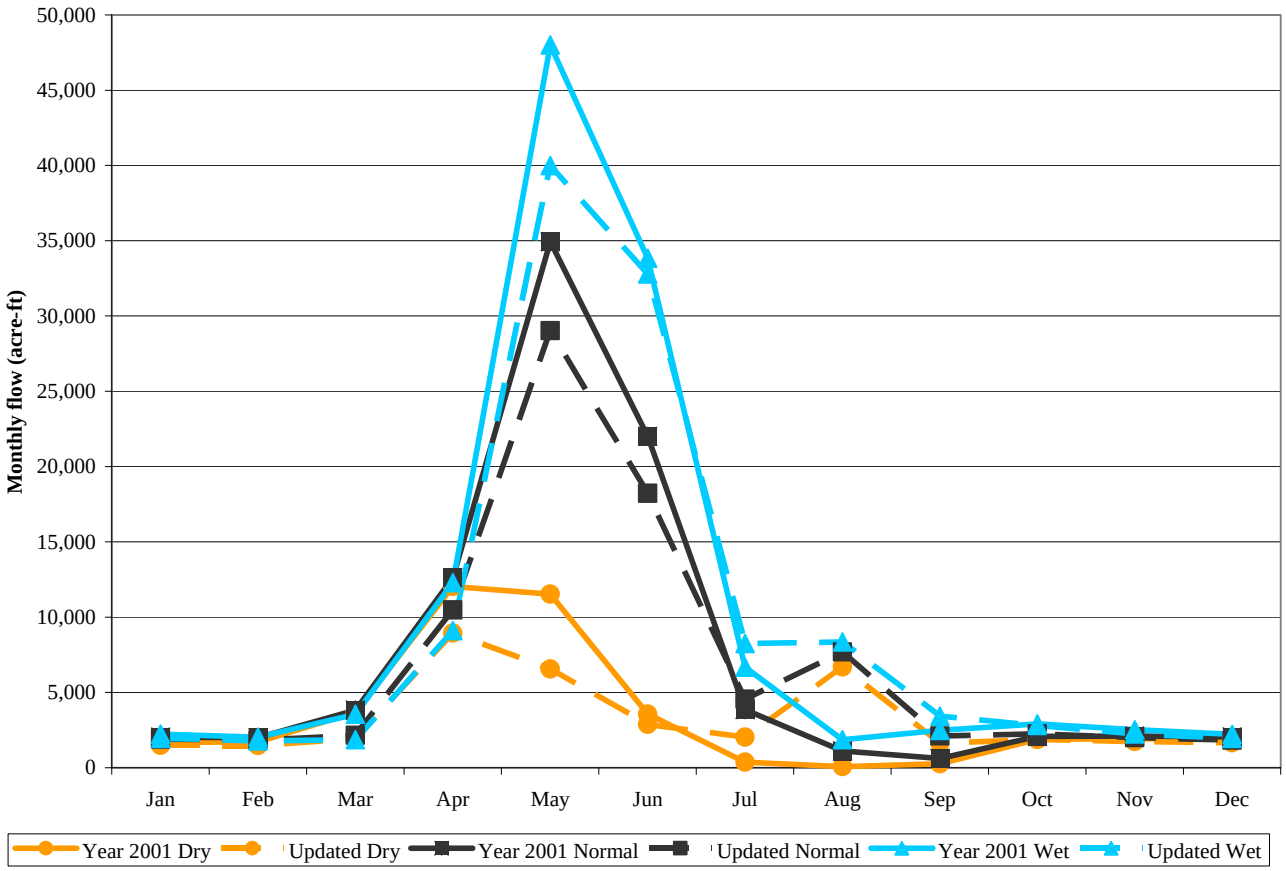

Figure B-1 Water Availability, Savery Creek below High Savery Reservoir, in Original (Year 2001) and Current (Updated) Spreadsheet Models

As the figure shows, updated water supply below High Savery Reservoir is significantly lower than the original estimate during May, as the reservoir fills, but higher in August and September as water is released. Whether released water is actually available to a new right cannot be assumed, however. Diversions of High Savery Reservoir releases are not reflected in the modeled diversions, which come predominantly from the pre-reservoir period. As history with the reservoir develops, this "disconnect" can be addressed by adjusting diversions or depletions to post-reservoir values.

Appendix C

Water Availability for Upper Green River, as Estimated by StateMod Model

Water Availability for Upper Green River, as Estimated by StateMod Model

Under the current Green River Basin Plan, an existing StateMod model of the Green River above Fontenelle Reservoir was extended to the Green River near Green River, Wyoming gage. StateMod is a general water allocation model that can be used to distribute the natural water supply to users according to their demand and the prior appropriation doctrine, throughout a specified modeling period. The model is capable of operating reservoirs for purposes such as supplemental irrigation supply, maintenance of minimum streamflows, or power generation.

StateMod was applied to the Green River basin in 2006 and 2007 as part of a Level II study known as the "Upper Green River Storage Study". The study was conducted by Kleinfelder and completed in February 2007. The model was subsequently refined in the Level II "West Side Storage Study" by SEH, Inc., completed in early 2008. Both of these studies focused on the upper reaches of the basin, and the model's downstream terminus was the Green River near LaBarge gage. As part of the current Green River Basin Plan update, the model was extended to Green River near Green River gage, matching the coverage of the basin plan spreadsheet model for the Upper Green River. The added section of the model includes Fontenelle Creek, Fontenelle Reservoir, and the municipal and industrial users between the Reservoir and the Town of Green River.

StateMod is fundamentally different from the spreadsheet models in that it steps through each month of the study period, whereas the spreadsheet models reflect three different years that typify Normal, Wet, and Dry conditions. The StateMod model dynamically "decides" where water can be diverted based on characteristics of the diversion or reservoir structures and water rights, whereas the spreadsheet models strictly reflect historical water uses and operations. The StateMod model uses the nodes and spatial representation of the Green River Basin Plan spreadsheet models. Underlying hydrologic data is the same for the two models, but the extremes of record are played out in StateMod representation of specific years such as 1977 or 1986. For the spreadsheet model, the hydrology of the driest and wettest years is averaged with the rest of the lowest/highest 20 percent of years to produce a less extreme hydrology. Finally, consumptive use for agriculture is arrived at differently in the two models, but supported by the same basic data. The spreadsheet models depend on irrigation water requirements developed at the University of Wyoming, for the period 1956 through 1990. Water requirements for study years in each hydrologic category were averaged to derive typical Normal, Wet, and Dry year crop water requirements. The StateMod model uses the modified Blaney-Criddle method in each irrigation season time step, incorporating crop coefficients that were calibrated to the University of Wyoming data sets.

StateMod Scenarios

Two model scenarios were set up in the StateMod model. The first scenario uses an estimate of historical crop diversions as the demand at the headgate, for agricultural users. This scenario is close to a historical or calibration run. It is also the scenario that is more comparable to the spreadsheet models, which are based on historical conditions. There are two operational aspects of the model that differ from historical, however. The first is that the model includes instream flow rights, throughout the simulation, that were not in place, for

example, in the 1970's at the start of the study period. The second aspect is the operation of Fontenelle Reservoir. The simulated rules for Fontenelle storage and releases correspond to current operations, which may not necessarily have been followed throughout the simulation period. Figure C-1 below shows simulated and historical contents of Fontenelle Reservoir. Clearly, the simulation agrees more closely with historical values in the last several years of operation, compared with the early years. And the simulation did not include Fontenelle's drawn down state in the mid-to-late 1980's, when the Bureau was addressing seepage problems at the reservoir.

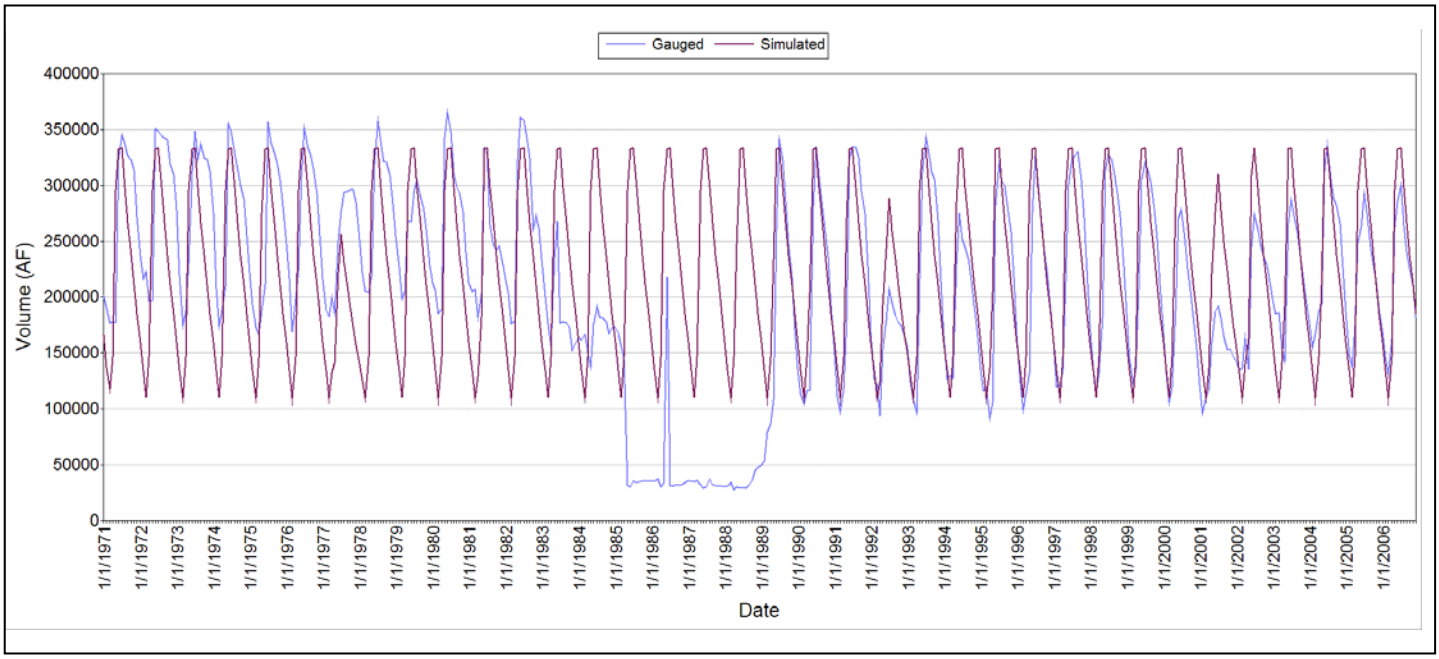

Figure C-1 Gauged and Simulated End-of-Month Contents for Fontenelle Reservoir

The second scenario used a crop requirement-based estimate of the headgate demand for agricultural uses. Monthly headgate demand was computed as the historical water supply limited consumptive use for the specific month, divided by average system efficiency for that month of the year. In the case of aggregations of irrigated land, the degree of water supply limitation and the system efficiencies were taken from the explicitly modeled structures in the same Water District. In every other respect, the crop requirement-based demand scenario was like the first scenario.

According to the StateMod model (first scenario), average annual water availability at the Green River gage is 1,211,000 af/yr. There is no comparable number out of the spreadsheet models to compare with this value. However, if StateMod results for the Normal, Wet, and Dry study years are averaged, the results can be compared with results of the spreadsheet models, as shown in Table C-1:

Table C-1 Water Availability Estimates under Spreadsheet and StateMod Scenarios (af/yr)

	Dry	Normal	Wet
Spreadsheet Result	595,000	1,138,000	1,806,000
StateMod with Historical Diversions			
StateMod Result	601,000	1,179,000	1,835,000
Difference	+6,000	+41,000	+29,000
% Difference	0.33%	2.27%	1.61%
StateMod with Crop-based Demand			
StateMod Result	555,000	1,165,000	1,825,000
Difference	-44,000	+27,000	+19,000
% Difference	-2.44%	1.50%	1.05%

The greater estimate of flows in the Historical Diversions scenario is probably most related to spatial distribution of the baseflow gains. Baseflow can be estimated at the stream gages, which provide a "window" to the baseflow. Between these windows, the modeler must estimate where the gain from gage to gage accrues to the stream. If the estimate is incorrect, the modeled diverters may not have access to water that was available historically, and the diversion is shorted. To the extent that the diversion and associated consumption do not occur, extra water "shows up" somewhere downstream.

Through sensitivity runs, the possibility of differences from historical flows due to other aspects of the model were explored. It was hypothesized that shortages might be simulated above new instream flow rights, not historically in effect in the real world, resulting in more water at the downstream end of the system. But this sensitivity run produced virtually the same flows at the Green River gage. Because the instream flow rights are generally junior to agricultural diversion rights, they apparently do not inhibit the irrigation diversions to a significant extent. Another sensitivity run addressed the model's strict allocation by priority, which may not reflect real world operations. It was thought that Fontenelle's 1962 water right could be calling out upstream diverters, in a manner that does not actually occur. The sensitivity run showed only minor differences, on the order of tens of acre-feet of flow per month, in the driest several years of the study period.

The crop-based demand scenario produced lower simulated flows at Green River than the historical diversions scenario (although not lower than gaged values for Normal and Wet years) because the estimated demand can be greater than the historical diversion in any given month, and if there happens to be water available, the simulated diverter will take the water. For example, May and September demand is based on a crop requirement that reflects temperature and precipitation. If a farmer chose not to divert in May because his headgate is still under snow, or in September because he has cut his hay, the model will still divert water at these times. Another source of discrepancy between historical diversion estimates and crop-based demand is related to the absence of information about first and last use of irrigation water for the season. These dates are not typically recorded. If the first diversion rate observation is actually made several weeks into the diversion season, then the estimate of historical diversions does not truly reflect demand. In this case, the crop-based estimate may be closer to reality.

Given that the spreadsheet results are very close to historical flows, Table C-1 gives an indication of the Statemod model calibration. The figures in the table illustrate that although the Statemod model can be considered reasonably well-calibrated, based on the average percent difference in simulated and gaged flows, the magnitudes of the estimation error is large relative to the Compact allowance. As a practical matter, however, the Compact allowance is so much more limiting than available supply, that an estimation error of 3 percent or less does not change the amount of consumptive use developable under the Colorado River Compact.