

In cooperation with:



Idaho Water
Resource Board

&



Henry's Fork
Watershed Council

Henry's Fork Basin Study

Meeting Summary: Workgroup Meeting 7

April 21, 2011

Meeting date: April 19, 2011

Summary prepared by: Mark Bransom/CH2M HILL

Attachments:

1. Irrigation Water Conservation (prepared by Bob Schattin/Reclamation).
2. Henry's Fork Drought Management Plan (prepared by Steve Trafton/Henry's Fork Foundation)
3. Attribute and Information Summary Tables (April 21, 2011 Draft Alternatives Data Matrix)
(Minor revisions made per April 19th meeting)

Introduction

The Henry's Fork Basin Study (Study) summarized herein was conducted as an agenda item during a regular meeting of the Henry's Fork Watershed Council (HFWC). The HFWC has agreed to provide a forum for Stakeholders to participate in the Study. The Council and other interested stakeholders represent the Study Workgroup.

Bob Schattin/Bureau of Reclamation opened the Basin Study discussion with a review of study materials that were posted on April 1 which include the following:

- PowerPoint presentations of topics that would have been presented during the March meeting (which was postponed),
- Water Supply Alternatives Attribute Information Tables,
- Storage Study Maps,
- Draft Needs Assessment

In addition, Bob reviewed the study process and study schedule.

Conservation, Water Management and Demand Reduction Alternatives

Bob Schattin opened the discussion with a presentation of Irrigation Water Conservation (included as Attachment 1). He presented four potential alternatives that may warrant reconnaissance-level analysis that would be evaluated using canal lining and sprinkler conversion improvements to the four major irrigated regions using Dr. Van Kirk's water budget model. In general, some members of the Study Workgroup did not want to pursue conservation improvements such as canal lining and/or piping as they are not effective means for creating new water supplies within the Basin (i.e., capturing water that is spilled over Milner Dam). Other members recognized the adverse effects that recent conservation efforts have had on groundwater resources through reductions in incidental recharge. The Study Workgroup does see value in utilizing Dr. Van Kirk's work to evaluate other water supply alternatives especially as it pertains to timing.

Dale Swenson/FMID continued the discussion with a description of Cross Cut Canal operations, limitations for its use (capacity), and potential benefits if the canal was enlarged which include meeting additional irrigation water needs in the Lower Teton Basin.

Steve Trafton/HFF presented a summary of the Henry's Fork Drought Management Plan (included as Attachment 2). The plan calls for five annual meetings to collaborate on adaptive management strategies to balance irrigation and aquatic resource needs. Steve described the planning process and outlined 8 alternatives that were considered to meet the plan objectives. The collaborative effort by FMID, HFF, NFRC, TU, TNC, and Reclamation as part of the Drought Management Plan is a good model for "community building" that would be beneficial for the Basin Study.

Cynthia Bridge Clark/IDWR provided a description of additional study materials that were distributed to the Workgroup during the week of April 11 which included a description of existing conservation programs that are currently supported by the IWRB. Cynthia reiterated that the IWRB encourages the use of resources appropriated for the Basin Study to investigate water supply alternatives that are not already available through other programs funded all or in part by the IWRB. In general, some members of the Workgroup felt that there are some existing programs that would be good water supply alternatives that should be evaluated as part of the Basin Study.

Bob Schattin concluded the discussion by inquiring if there were additional, specific conservation alternatives that the Workgroup would like to include in the study evaluations. Workgroup feedback included the following:

- Rotational fallowing as a demand reduction measure. It was noted by members of IDWR that conversion to dry land crops is already evaluated through the AWEP program.
- Evaluate better utilization of existing state programs such as AWEP using Dr. Van Kirk's model.
- Evaluate how different price points – generally, higher fees to incentivize greater participation - could achieve greater success with existing programs such as CREP.
- Geographic specific water market alternatives such as purchasing water rights outright. It was noted by other Workgroup members that legal issues would need to accompany such an analysis, including evaluation of consumptive vs. non-consumptive water rights.
- Conservation strategy to combine alternatives, such as raising Ashton Dam, Island Park and enlarging the Cross Cut Canal.
- Alpine meadow restoration projects, similar to projects within the Sierra Nevada mountain range.
- Alternatives that would sustain environmental quality. It was noted by Bob Schattin that all new water supply alternatives would include an evaluation of environmental sustainability.
- Although canal lining/piping may not be an effective means to create new water supplies, it may warrant evaluation as part of the Basin Study to show that it was considered, and demonstrate its effectiveness.

Attribute and Information Summary Tables

The afternoon session began by reviewing revisions to the Draft Attribute and Information Summary Tables (included as Attachment 2).

Responses to Workgroup inquiries and other feedback included the following:

- All screening criteria are currently weighted equally.
- Currently there is no established target volume for new storage. The Draft Needs Assessment includes a range of in-basin and out-of-basin water needs.
- Need to include representatives from Wyoming in the Basin Study Workgroup if storage options in Wyoming will be included in the reconnaissance evaluation.
- Review Reclamation's hydropower study for hydropower potential on existing sites.

- IDFG will provide a link to additional mapping of natural resource data.
- Several members of the Workgroup would like to see the connection to water supply alternatives geographically to the Draft Needs Assessment.
- Some members of the Workgroup felt that surface storage alternatives need to be hydrologically connected to the Teton Basin where early season flows are currently lost.
- Some members felt that the Basin Study needs to include a managed recharge alternative in order to provide an array of water supply alternatives.
- Dr. Van Kirk's model is a valuable tool to evaluate all water supply alternatives, but is not an alternative on its own.
- Need to confirm Dr. Van Kirk's schedule as it pertains to his involvement in the reconnaissance evaluation.

Draft Needs Assessment

Mark Bransom/CH2M HILL continued the afternoon session by taking comments and questions on the Draft Needs Assessment which was prepared by Reclamation. Mark requested that detailed comments and questions be provided in written format; general questions, comments and responses included the following:

- Reclamation would like to receive all feedback on the Draft Needs Assessment prior to the next Workgroup meeting.
- Geographic specific recommendations would be helpful for alternatives analysis.
- Environmental Needs
 - The Draft Needs Assessment states that there are “various recommendations” for environmental needs due to various published recommendations. Reclamation is seeking input from the Workgroup members on what is the best source/guideline for environmental flows. Members of the Workgroup would like to see the Environmental Needs quantified based on best available numbers.
 - Minimum flows for different life history and stages of aquatic species is important, however, it is also important to consider channel forming flows for sustainable processes.
 - Focus on native vs. non-native aquatic species depends on geographic area. Management prescriptions in the Teton Basin focus on Yellowstone cutthroat trout whereas the focus in the Henrys Fork is on sport populations.
 - Dr. Van Kirk's hydrologic study is a good resource for determining when and where there are flow augmentation needs.
 - Need to evaluate the impact to trumpeter swans.
 - Existing flow augmentation commitments may be better categorized as out-of-basin needs.
 - Include water needs for Wildlife Management Areas.
- Irrigation Needs
 - Reclamation should confirm/clarify the unmet needs from Dr. Van Kirk's work as the numbers in Dr. Van Kirk's study are based on water diverted (not necessarily used).
 - Dr. Van Kirk's numbers to not include precipitation; need to adjust for crop water needs met by precipitation.
 - A large portion of Dr. Van Kirk's model that is considered irrigated is not actually irrigated.

- DCM&I Needs
 - Some members of the Workgroup felt that although the DCM&I needs are smaller in comparison to other needs such as irrigation, the need for future DCM&I should not be downplayed.
 - Population growth may not be the best indicator of future DCM&I growth for this area due to the type of development (e.g., large amounts of lawn).
 - What is the source of data with respect to fish hatcheries?
 - Do not include DCM&I needs if they are consumptive in the total needs amount. However, all needs should be quantified if there is a water right associated with it (provide a footnote).

Upcoming Meetings and Agenda

The next meeting – Meeting 8 – scheduled for Tuesday, May 17, 2011 has been cancelled. The schedule of the next meeting is TBD.

Attachment 1

Henrys Fork Basin Study – April 19th Agenda

- Study Process – Where are we now.
 - Review of Package Contents
- Overview – Draft Needs Assessment
- Summary of Conservation Presentations
 - Discussion – Data Alternatives Matrix
- Discussion – Needs Assessment, Etc.

RECLAMATION

Where are we now ?

- Initial Scoping Phase – Discussion & Listing of Alternatives
 - Soon Entering Reconnaissance Phase – Throughout Summer – Technical Analysis
- Fall – Publish Results of Reconnaissance – Workgroup Input & Feedback.
- One More Year – Detailed Appraisal Level Analysis

RECLAMATION

Henrys Fork Basin Study - Workgroup Materials-April 2011

Presentations

- Apr-11 [Irrigation Water Conservation in Henrys Fork](#)
- Apr-11 [Fremont Madison Irrigation District Recharge Experience](#)
- Apr-11 [Idaho NRCS -Projects and Programs for Water Cons. and Optimization](#)
- Apr-11 [IDWR Water District 01 Incidental Recharge](#)

Attribute Information

- Apr-11 [Narrative for Attribute Information Summary Tables](#)
- Apr-11 [Attribute Information Summary Tables](#)
- Apr-11 [Sensitivity Analysis Table E Ranking](#)
- Apr-11 [Process Flow Diagram](#)

Maps

- Apr-11 [Henry's Fork Natural Environment](#)
- Apr-11 [Henry's Fork Special Designations State Protected](#)
- Apr-11 [Henry's Fork Special Designations State Protected](#)
- Apr-11 [Henry's Fork Land Management](#)
- Apr-11 [Henry's Fork Land Use](#)

Workgroup Reports

- Apr-11 [DRAFT Henrys Fork Watershed Basin Study Water Needs Assessment](#)

Draft Needs Assessment Conclusions

- ESPA CAMP has unmet water budget needs
- Unmet irrigation demand
- Estimate doubling of M&I demand (small %)
- Environmental flows – various recommendations – requires more invest.
- Potential climate variability

Conservation Practices Which Reduce Losses

Loss ¹	Conservation Practice
Conveyance Seepage	Pipeline, Canal Lining
Over Irrigation (early spring)	Irrigation Water Management
Non Uniformity (surface irrigation)	Sprinkler Irrigation
Runoff (surface irrigation)	Sprinkler Irrigation
Non Crop ET	Pipeline, Canal Lining
Wind Drift	LESA (low elevation sprinkler application), Irrigation Water Management

¹Listed in order of magnitude in the Henrys Fork Watershed

Incidental Recharge

Legislation approving the ESPA CAMP contained the following language –

The CAMP implementation plan shall include measures that recognize the benefits of incidental recharge, and that will encourage water users and canal managers to continue their historic surface water diversion practices.

Attachment 2

Henry's Fork Drought Management Plan

“The purpose of the Drought Management Plan is to provide the policy and system for monitoring, assessing, and preparing for drought conditions, while supporting FMID water users and the ecological resources of the Henry's Fork of the Snake River.”

Background

- **Multiple years of below average precipitation in late 1990s and early 2000s.**
- **Winter flows below Island Park Dam were kept at very low levels in drought years in order to store water in Island Park Reservoir for the coming irrigation season.**
- **Ability of juvenile trout to survive the winter is the primary limiting factor for the wild rainbow trout population below Island Park Dam. The most important factor promoting winter survival of juvenile trout is water; more water = a higher rate of survival.**

Background, cont.

- **2003 Fremont-Madison Conveyance Act (Public Law No. 108-85), Section 9:**

“Within 60 days of the enactment of this Act, in collaboration with stakeholders in the Henry’s Fork watershed, the Secretary shall initiate a drought management planning process to address all water uses, including irrigation and the wild trout fishery, in the Henry’s Fork watershed.”

Planning process

- **Late 2003 – March 2005.**
- **1 objective, 6 goals.**
- **8 alternatives considered:**
 - 1. Pumping and pipeline system for Henry's Lake outlet.**
 - 2. New storage facility, Teton River.**
 - 3. Stock trout below Island Park Dam to mitigate winter losses.**
 - 4. Mitigation Fund A (reimburse willing water renters for lost water).**
 - 5. Mitigation Fund B (incentives/improvements to reduce irrigation demand).**

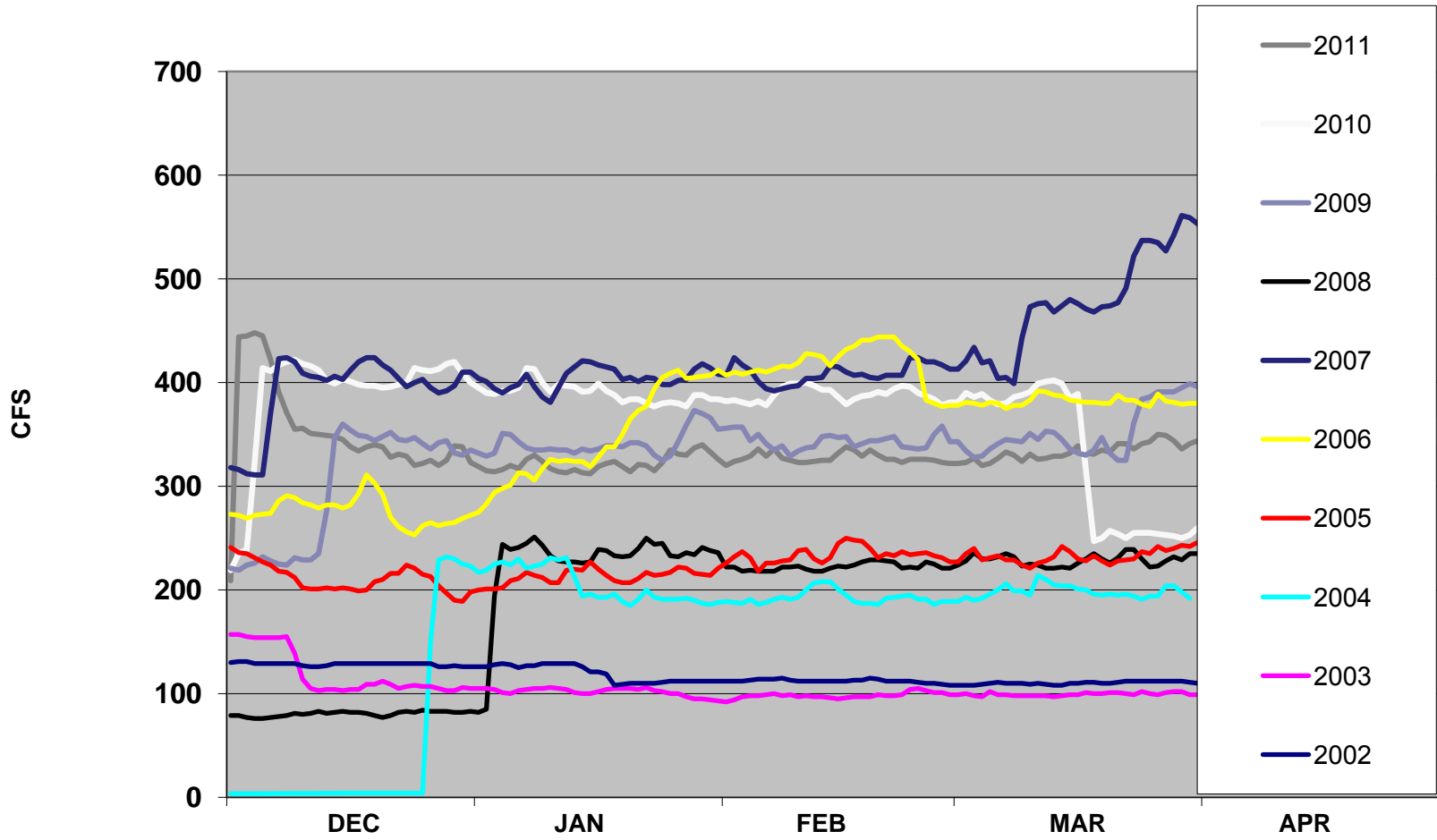
Planning process, cont.

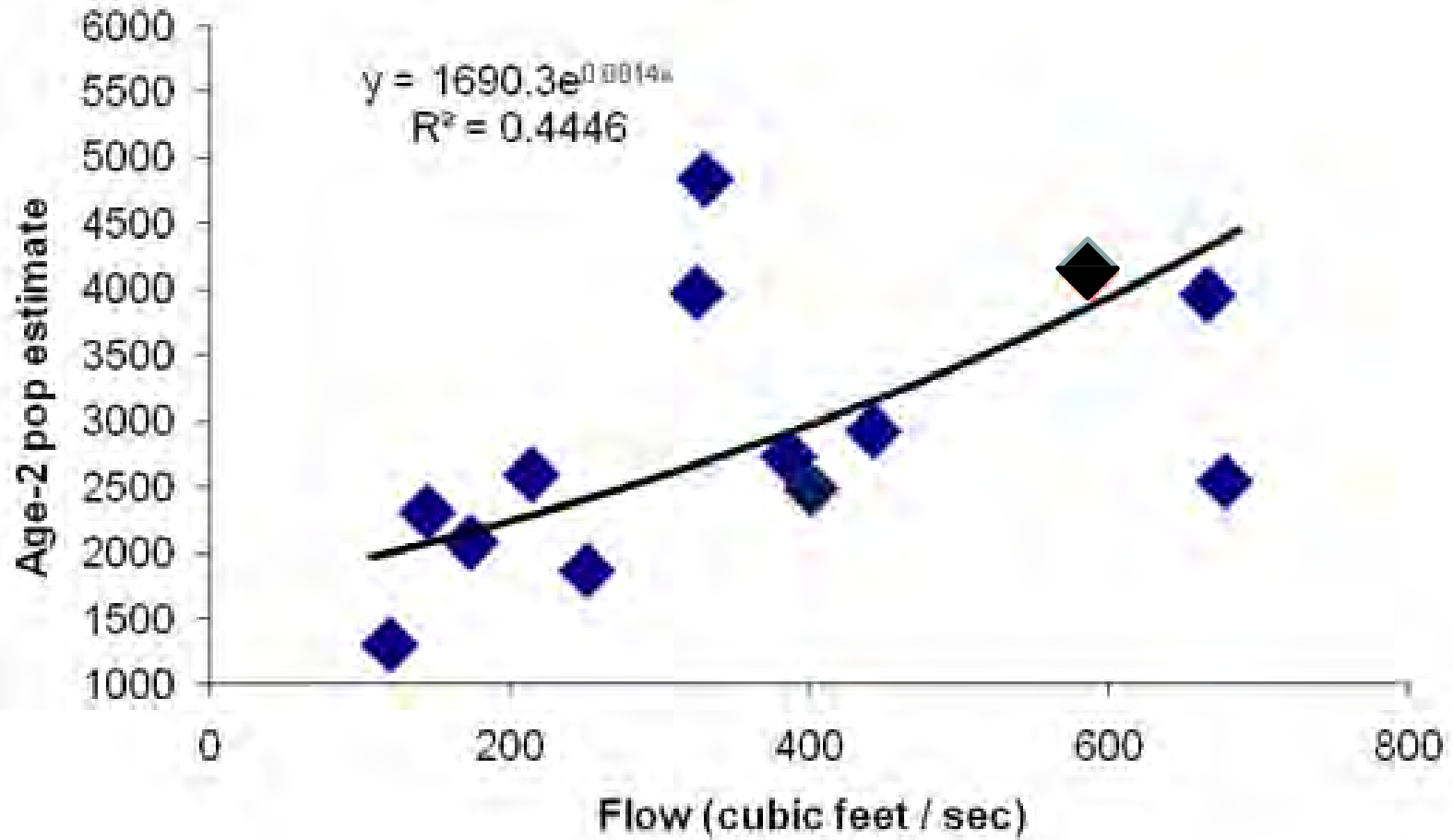
- 6. Marysville pipeline (enhanced flexibility).**
- 7. Buffalo River confluence adjustment.**
- 8. Adaptive management at Island Park Dam.**

Result

- **Four or five stakeholder meetings annually (January, July, September, October.**
- **Plan signed by FMID, HFF, NFRC, TU, TNC, BOR.**

Island Park Reservoir - outflow WY 2002 to 2011





Dan
Garren

Henry's Fork Drought Management Plan

“The purpose of the Drought Management Plan is to provide the policy and system for monitoring, assessing, and preparing for drought conditions, while supporting FMID water users and the ecological resources of the Henry's Fork of the Snake River.”

Attachment 3

Table A. Attribute and Information Summary of Water Supply Alternatives, Henrys Fork Basin Study

Literature Information Summary													
Alt #	Surface Storage Site	Published Storage Potential (AF) ^b	On-stream	Off-stream ^c	Existing	Impounded Drainage(s)	Off-stream Water Source(s)	Published Hydrology Potential (average annual)	Published Hydropower Potential ^f	Published Impoundment Impacts	Location Unknown	Literature Source ^b	Notes
1	Ashton Dam Enlargement	29,000 ¹ ; 40,000 ²	•		•	Henrys Fork Snake River			6.2 MW (additional)	agricultural development, roads, habitation		IWRRI 1981, IWRB 1992	
2	Bitch Creek	142,000 ^{1,2} ; 210,000 ²		•		Bitch Creek	Teton River, Falls River, Conant Creek	75,000 AF (Bitch Creek)	5 MW	limited development and habitation, highway/roads, Union Pacific Railroad Bridge		IWRRI 1981, IWRB 1992	
3	Boone Creek	83,000 ¹ ; 80,000 ²		•		Boone Creek	Falls River	30,000 AF (Boone Creek)	3 MW	Targhee National Forest, diversion would be located in Yellowstone National Park		IWRRI 1981, IWRB 1992	
4	Conant Creek	40,000 ^{1,2} ; 20,100 ³		•		Conant Creek	Bitch Creek, Squirrel Creek, Falls River, Boone Creek	20,000-30,000 AF (Conant); 20,000-30,000 AF (Boone/Squirrel)		roads and habitation		1992, Reclamation 1994	
5	Driggs	50,000 ²	•			Teton River						IWRB 1992	
6	Generic Reservoir in Flat Land	NA		•							•	NA	Presented by Reclamation at January 11, 2011 Workgroup meeting
7	Grassy Lake	NA			•				No Potential			Reclamation 2011	Existing storage is 15,000 AF. Upstream Falls River.
8	Harrops Bridge/Tetonia	590,000 ²	•			Teton River			4 MW			IWRB 1992	
9	Horseshoe Creek	60,000 ^f		• ^d		Horseshoe Creek ^d	Teton River ^d				• ^d	NA	Limited information available. Noted in Carey Act literature but most recent info found is from 1911.
10	Howell Ranch	32,000 ¹ ; 30,000 ²		•		Rock Creek, Porcupine Creek	Falls River, Robinson Creek	10,000 AF (Robinson Creek); 30,000 AF (Falls River)	✓	uninhabited Howell Ranch and some roads		IWRRI 1981, IWRB 1992	
11	Island Park Enlargement	8,000 ^g			•							NA	Presented as enlargement option by Reclamation at 01/11/11 Workgroup meeting.
12	JY Ranch	49,000 ¹ ; 50,000 ² ; 80,000 ²		•		Rock Creek, Shafer Creek	Falls River, Porcupine Creek, Robinson Creek			inundation of habitation (J Y Ranch), roads, Targhee National Forest		IWRRI 1981	
13	Lane Lake	69,000 ¹ ; 70,000 ²		•		dry basin north of Teton River	Bitch Creek, Conant Creek	75,000 AF (Bitch Creek); 32,000 AF (Conant Creek)	✓	some roads, agricultural development, limited habitation		IWRRI 1981, IWRB 1992	
14	Lower Badger Creek	73,000 ¹ ; 70,000 ²		•		Badger Creek	Teton River, Bitch Creek		✓	very little development		IWRRI 1981, IWRB 1992	
15	Marysville Headworks	38,000 - 56,000	•			Falls River						IWRB 1992	
16	Moody Creek (Webster Dam)	46,000 ¹ ; 50,000 ²		•		Moody Creek	Teton River, Canyon Creek	6,000 AF (Moody Creek); 9,000 AF (Canyon Creek)		Unknown		IWRRI 1981, IWRB 1992	Webster Dam identified by Workgroup member but no specific location given.
17	Moose Creek	60,000		•		Moose Creek	Henrys Fork Snake River					IWRB 1992	Minimal water-storage benefits b/c diversion location is above Island Park.
18	Park Lake	37,000 ¹ ; 40,000 ²		•		Upper Rock Creek	Falls River, Belcher River			Cave Falls Road, canal diversions would be in Yellowstone National Park		IWRRI 1981	
19	Robinson Creek	70,000		•		Robinson Creek, Bear Creek	Falls River, Fish Creek	20,000 AF (Robinson Creek); 5,000 AF (Fish Creek)	✓	Targhee National Forest		IWRRI 1981	
20	Spring Creek (Canyon Creek)	32,000 ¹ ; 30,000 ²		•		Spring Creek (tributary to Canyon Creek)	Bitch Creek, Canyon Creek, Teton River	9,000 AF (Canyon Creek)	✓	Unknown		IWRRI 1981, IWRB 1992	Potential Canyon Creek site identified by Workgroup member but no specific location provided.
21	Squirrel Creek	126,000 ¹ ; 130,000 ²		•		Squirrel Creek	Conant Creek, Boone Creek, Falls River	30,000 AF (Boone Creek)		Targhee National Forest		IWRRI 1981, IWRB 1992	
22	Squirrel Meadows (Wyoming)	10,000		•		tributary to Squirrel Creek	Boone Creek					IWRB 1992	
23	Teton (rebuild or new site)	200,000 (active)	•			Teton River		31,670 AF (Reclamation 1994)	8 MW			IWRB 1992, Reclamation 1994	
24	Teton Creek (Alta Project)	3,424 ⁴		•		Teton Creek		80,000 AF (Reclamation 1961)				Reclamation 1961	Based on an initial review of topography, there is potential to store larger volumes that could be available to supply water to a greater service area than the original 'Alta Project'.
25	Upper Badger Creek	49,000 ¹ ; 50,000 ²		•		Badger Creek	Teton River	87,000 AF (Teton River, Reclamation 1994)	2 MW	limited farmstead development		IWRRI 1981, IWRB 1992	
26	Warm River	75,000 (active)	•			Henrys Fork Snake River, Warm River, Robinson Creek			22 MW			IWRB 1992	
Managed Groundwater Recharge (and potential recovery) Site													
27	Egin Lake Enlargement ⁵	5,000 (fall) ¹		•	•	N/A							Egin Lakes is a dedicated, constructed recharge site and is part of FMID. Egin Lakes is part of the IWRB Managed Recharge Program.
28	FMID Recharge Program (Egin Bench) ⁵	18,000-30,000 (spring) ²		•	•								"Egin Bench" includes five different canal companies who participate in recharge efforts under FMID's contract in the IWRB's Managed Recharge Program.
29	FMID Recharge Program (all other FMID) ⁵	13,000-19,000 (spring) ²		•	•								Multiple canal companies within FMID participate in the IWRB's Managed Recharge Program under a contract between FMID and the IWRB.
30	Teton Valley Recharge Program	Not Identified											Individual recharge sites are encouraged to participate in the IWRB's Managed Recharge Program.
Water Market Alternative													
31	Credit System												
32	Utilize and/or Expand Existing Banking Program												The State Water Supply Bank (IWRB's Bank and Water District 1 Rental Pool) active programs administered by the State.
33	Economic Valuation of Irrigation Water												
Conservation, Water Management and Demand Reduction Alternatives													
34	Teton Valley Water Conservation ⁶												
35	North Fremont Water Conservation ⁶												
36	Lower Bench Water Conservation ⁶												
37	Egin Bench Water Conservation ⁶												
38	Increase Capacity of Cross-Cut Canal												
39	General Demand Reduction Alternatives												Several programs are offered through the IWRB's AWEP and encouraged through the ESPA CAMP process.
40	Weather Modification												A pilot program in the Upper Snake River is in operation through the ESPA CAMP process.
41	Consolidation (e.g., Lemhi)												

^aPrimary water source is offstream

^bLiterature Sources

¹A Preliminary Appraisal of Offstream Reservoir Sites for Meeting Water Storage Requirements (IWRRI 1981)

²Comprehensive State Water Plan - Henrys Fork Basin (IWRB 1992)

³Snake River Basin Storage Appraisal Study (Reclamation 1994)

⁴Upper Snake River Basin, Wyoming-Idaho-Utah-Nevada-Oregon, Volume I Summary Report (Reclamation 1961)

⁵Hydropower Resource Assessment at Existing Reclamation Facilities (Reclamation 2011)

^cSome sites were identified as having hydropower potential and are therefore noted with a checkmark, however, a specific quantity (MW) was not provided.

^dNo published information available, however, estimates/assumptions have been made based on best professional judgment and/or Workgroup member estimates.

^fHistorical recharge volume data has been provided by IDWR. New incremental storage volumes to be determined.

¹Historical recharge volumes for Egin Lakes recharge site: 4,860 AF (fall) in 2008; and 5,000 AF (fall) in 2009.

²Historical recharge volumes for Egin Bench area: 18,528 AF (spring) in 2009; and 30,532 AF (spring) in 2010.

³Historical recharge volumes for all other areas of FMID (which includes part of the Sand Creek Wildlife Management Area: 13,227 AF (spring) in 2009; and 18,934 AF (spring) in 2010.

⁴Storage potential volume estimates are not published information, however, volume estimates were made based on topography and an assumed location/elevation.

⁵Evaluation of each water conservation alternatives within a major irrigated region will include two scenarios. The first scenario will analyze complete conversion of all canals to pipeline. The second scenario will analyze complete conversion from flood irrigation to sprinkler irrigation.

Table B. Attribute and Information Summary of Water Supply Alternatives, Henrys Fork Basin Study (Water Supply)

Alt #	Surface Storage Site	Water Supply (WS)							Additional Notes
		Rating	Hydrology Potential (average annual AF) ^b	Hydropower Development Protections			Rating	Flood Control ^{e,f}	
				Rating	IWRB Designation ^c	NPCC Designation ^d			
1	Ashton Dam Enlargement	Moderate	poor	None			Good	Lower Henrys Fork ¹ , Henrys Fork ¹	
2	Blitch Creek	Moderate	75,000	IWRB/NPCC	•	•	Moderate	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	Potential for flood control considered due to off-stream water source.
3	Boone Creek	Moderate	30,000	IWRB/NPCC	•	•	None		
4	Conant Creek	Moderate	40,000-60,000	NPCC		•	None		
5	Driggs	Good	good	IWRB/NPCC	•	•	Good	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	
6	Generic Reservoir in Flat Land	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
7	Grassy Lake	Poor	poor	None			None		
8	Harrops Bridge/Tetonia	Good	good	IWRB/NPCC	•	•	Good	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	
9	Horseshoe Creek	Good	poor as onstream, good as off-stream	NPCC		•	None		
10	Howell Ranch	Moderate	40,000	IWRB	•		None		
11	Island Park Enlargement	Poor	poor	None			Good	Lower Henrys Fork ¹ , Henrys Fork ¹	
12	JY Ranch	Moderate	40,000	IWRB	•		None		
13	Lane Lake	Good	100,000+	None			Moderate	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	Potential for flood control considered due to off-stream water source.
14	Lower Badger Creek	Good	100,000+	IWRB	•		Moderate	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	Potential for flood control considered due to off-stream water source.
15	Marysville Headworks	Moderate	30,000	IWRB/NPCC	•	•	None		
16	Moody Creek (Webster Dam)	Moderate	45,000	NPCC		•	None		
17	Moose Creek	Poor	poor	None			None		
18	Park Lake	Moderate	30,000	IWRB	•		None		
19	Robinson Creek	Poor	25,000	IWRB/NPCC	•	•	None		
20	Spring Creek (Canyon Creek)	Poor	9,000	NPCC		•	None		
21	Squirrel Creek	Moderate	92,000	NPCC		•	None		
22	Squirrel Meadows (Wyoming)	Moderate	30,000	None			None		
23	Teton (rebuild or new site)	Good	100,000+	NPCC		•	Good	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	
24	Teton Creek (Alta Project)	Moderate	80,000	NPCC		•	None		
25	Upper Badger Creek	Good	100,000+	NPCC		•	Moderate	Lower Henrys Fork ¹ , Henrys Fork ¹ , Lower Teton River ²	Potential for flood control considered due to off-stream water source.
26	Warm River	Good	good	IWRB/NPCC	•	•	Good	Lower Henrys Fork ¹ , Henrys Fork ¹	
Managed Groundwater Recharge (and potential recovery) Site									
27	Egin Lake Enlargement	Poor		None			None		
28	F MID Recharge Program (Egin Bench)	Moderate		None			None		
29	F MID Recharge Program (all other F MID)	Poor		None			None		
30	Teton Valley Recharge Program	Moderate		None			None		
Water Market Alternative									
31	Credit System	TBD		None			None		
32	Utilize and/or Expand Existing Banking Program	TBD		None			None		
33	Economic Valuation of Irrigation Water	TBD		None			None		
Conservation, Water Management and Demand Reduction Alternatives									
34	Teton Valley Water Conservation	TBD		None			None		
35	North Fremont Water Conservation	TBD		None			None		
36	Lower Bench Water Conservation	TBD		None			None		
37	Egin Bench Water Conservation	TBD		None			None		
38	Increase Capacity of Cross-Cut Canal	TBD		None			None		
39	General Demand Reduction Alternatives	TBD		None			None		
40	Weather Modification	TBD		None			None		
41	Consolidation (e.g., Lemhi)	TBD		None			None		

Qualitative Color Codes to "Rank" Each Attribute

Hydrology Potential (average annual)

Poor	<30,000 AF
Moderate	30,000-100,000 AF
Good	>100,000 AF

Hydropower Development Protections

IWRB	IWRB designation ^c
NPCC	NPCC designation ^d
None	None

Flood Control

None	Potential to provide significant flood control unlikely
Moderate	Potential to provide flood control due to pumping from off-stream water source
Good	Potential to provide flood control

^aSpecific site location data is not available, however, assumptions have been made based on best professional judgment.

^bHydrology potential is based on best available published information and reflects new incremental storage opportunities. Where no information is available a qualitative assessment (good, moderate, poor) of hydrologic potential has been made based on best professional judgment.

Hydrologic potential does not include a review of water rights or water availability after other commitments; the hydrology potential may be refined during more detailed hydrologic and basin yield analysis as part of the reconnaissance evaluation.

^cConstruction of dams or impoundments prohibited pursuant to Idaho Code 42-1734A(5) (IWRB 1992). **Where the designation of a state protected river precludes a project or development, the IWRB will consider requests from individuals to amend a component of the comprehensive state water plan on a case-by-case basis.**

^dNorthwest Power and Conservation Council (NPCC) protects segment from further hydropower development due to unacceptable risks of irreversible loss to fish and wildlife. Under the Northwest Power Act and the Federal Power Act, federal entities - specifically the Bonneville Power Administration (BPA), Federal Energy Regulatory Commission (FERC), U.S. Army Corps of Engineers, and Reclamation - must consider "Protected Area" status and restrictions when making decisions regarding hydroelectric facility permits and access to electricity from those facilities. **Inclusion in a "Protected Area" does not prohibit hydroelectric development at a site.** However, the Council 1) calls on FERC not to license a new hydroelectric development in a Protected Area, and 2) calls on BPA not to acquire the power from such a project should one be licensed by FERC.

^ePer the *Operations Description for Bureau of Reclamation Project in the Snake River Basin above Brownlee Reservoir* (1)

¹Lower Henrys Fork - Primary flood control operations is to limit outflow when damaging flows are occurring down

^fIdentified river segments with flooding per the Resource Evaluation (IWRB 1992)

¹Henrys Fork - Ashton Dam to mouth

²Lower Teton River - North Branch Teton River and South Branch Teton River to Henrys Fork confluence

Table C. Attribute and Information Summary of Water Supply Alternatives, Henrys Fork Basin Study (Natural Environment)

Alt #	Surface Storage Site	Wildlife Habitat ^d			Federally Listed Species				Wetland/Habitat Value		State Species of Special Concern (aquatic)		Special Designation				
		Rating	Large Game Winter Range	Large Game Migration Corridors	Rating	At-Risk (USFS & BLM sensitive species, and Idaho Species of Greatest Conservation Need) ^e	Threatened, Endangered, Candidate and Experimental Nonessential Species ^f	Rating	NWI Wetlands	Rating	Yellowstone cutthroat trout (YCT) presence	YCT Conservation and Management Tier ^g	Rating	BLM/USFS Eligible Stream	State Natural River	State Recreational River	Designated Wilderness ^h
1	Ashton Dam Enlargement	Migration		• ¹	Federal Terrestrial/Sensitive	bald eagle, sandhill crane, trumpeter swan	grizzly bear, Canada lynx, wolverine, sage grouse	None		None		None					
2	Bitch Creek	Winter Range	• ^{1,2}	• ²	Federal Terrestrial/Sensitive	trumpeter swan, bald eagle	grizzly bear, Canada lynx, wolverine	Moderate	•	Core	•	Core Conservation	State/eligible Federal	•	•	•	
3	Boone Creek	None			Prime Conservation	common loon, trumpeter swan	grizzly bear (primary conservation area), Canada lynx, wolverine	Extensive	•	Conservation	•	Conservation	Federal		•		•
4	Conant Creek	Migration		• ²	Federal Terrestrial		grizzly bear, Canada lynx, wolverine	Moderate	•	Conservation	•	Conservation	None				
5	Driggs	None			Sensitive	bald eagle, long-billed curlew, peregrine falcon, sandhill crane, trumpeter swan, western burrowing owl		Extensive	•	Conservation	•	Conservation	State				•
6	Generic Reservoir in Flat Land	TBD			TBD			TBD		TBD			None ^a				
7	Grassy Lake	None			None			None		None			None				
8	Harrops Bridge/Tetonia	Winter Range	• ²		Sensitive	bald eagle, long-billed curlew, peregrine falcon, sandhill crane, trumpeter swan, western burrowing owl		Extensive	•	Conservation	• ^a	Conservation	State				•
9	Horseshoe Creek	Winter Range	• ³		None			None		Conservation	• ^a	Conservation	None				
10	Howell Ranch	Migration		• ^{1,2}	Prime Conservation	trumpeter swan	grizzly bear (primary conservation area), Canada lynx, wolverine	None		Core	•	Core Conservation/Conservation	State				•
11	Island Park Enlargement	None			Federal Terrestrial/Sensitive	american avocet, american white pelican, bald eagle, black-crowned night-heron, galifornia gull, caspian tern, common loon, foster's tern, franklin's gull, sandhill crane, trumpeter swan, western grebe, white-faced ibis, wyoming ground squirrel	grizzly bear, Canada lynx, sage grouse, wolverine	None		None			None				
12	JY Ranch	Migration		• ^{1,2}	Federal Terrestrial/Sensitive	california gull, trumpeter swan	wolverine ^e	None		Core	•	Core Conservation/Conservation	State				•
13	Lane Lake	Winter Range	• ¹	• ²	Federal Terrestrial/Sensitive	trumpeter swan	grizzly bear, wolverine ^e	Minimal	•	Core ^c		Core Conservation ^c	None				
14	Lower Badger Creek	Winter Range	• ^{1,2}	• ²	Federal Terrestrial/Sensitive	bald eagle, trumpeter swan	grizzly bear, Canada lynx, wolverine	None		Core	•	Core Conservation	State/eligible Federal	•			•
15	Marysville Headworks	Migration		• ²	None			None		Conservation	•	Conservation	State/eligible Federal	•			•
16	Moody Creek (Webster Dam)	None			None			Moderate	•	Conservation	•	Conservation	None				
17	Moose Creek	None			None			None		None			eligible Federal	•			
18	Park Lake	Migration		• ^{1,2}	Prime Conservation	northern leopard frog, trumpeter swan	grizzly bear (primary conservation area), Canada lynx, wolverine	Moderate	•	Conservation	•	Conservation	State				•
19	Robinson Creek	Migration		• ^{1,2}	Prime Conservation	boreal owl, merlin, trumpeter swan	grizzly bear (primary conservation area), Canada lynx, wolverine, sage grouse	None		Core	•	Core Conservation/Conservation	State/eligible Federal	•			•
20	Spring Creek (Canyon Creek)	Winter Range	• ^{1,2}		Federal Terrestrial		wolverine	None		Core ^c		Core Conservation ^c	None				
21	Squirrel Creek	None			Prime Conservation	common loon, northern pintail, sandhill crane, trumpeter swan	grizzly bear (primary conservation area), Canada lynx, wolverine	Moderate	•	Conservation	•	Conservation	None				
22	Squirrel Meadows (Wyoming)	None			Prime Conservation		grizzly bear (primary conservation area), Canada lynx, wolverine	Moderate	•	Conservation		Conservation ^c	None				
23	Teton (rebuild or new site)	Winter Range	• ^{1,2}	• ²	Federal Terrestrial/Sensitive	bald eagle, trumpeter swan, wyoming ground squirrel	wolverine	Extensive	•	Conservation	•	Conservation	eligible Federal	•			
24	Teton Creek (Alta Project)	Winter Range	• ³		Sensitive	harlequin duck		None		Conservation	• ^a	Conservation	None				
25	Upper Badger Creek	Winter Range	• ^{1,2}	• ²	Federal Terrestrial		grizzly bear, Canada lynx, wolverine	Moderate	•	Core	•	Core Conservation	None				
26	Warm River	Migration		• ²	Sensitive	bald eagle, black tern, boreal owl, common loon, lesser scaup, sandhill crane, trumpeter swan, upland sandpiper, western grebe		None		Core	•	Core Conservation/Conservation	State/eligible Federal	•	•	•	
Managed Groundwater Recharge (and potential recovery) Site																	
27	Egin Lake Enlargement	None			None			None		None			None				
28	FMID Recharge Program (Egin Bench)	None			None			None		None			None				
29	FMID Recharge Program (other)	None			None			None		None			None				
30	Teton Valley Recharge Program	None			None			None		None			None				
Water Market Alternative																	
31	Credit System	None			None			None		None			None				
32	Utilize/Expand Exst Banking Program	None			None			None		None			None				
33	Economic Valuation of Irrigation Water	None			None			None		None			None				
Conservation, Water Management and Demand Reduction Alternatives																	
34	Teton Valley Water Conservation	None			None			None		None			None				
35	North Fremont Water Conservation	None			None			None		None			None				
36	Lower Bench Water Conservation	None			None			None		None			None				
37	Egin Bench Water Conservation	None			None			None		None			None				
38	Increase Capacity of Cross-Cut Canal	None			None			None		None			None				
39	General Demand Reduction Alts	None			None			None		None			None				
40	Weather Modification	None			None			None		None			None				
41	Consolidation (e.g., Lemhi)	None			None			None		None			None				

Qualitative Color Codes to "Rank" Each Attribute

Wildlife Habitat	
Winter Range	Winter Range Habitat
Migration	Migration Corridor
None	None
Federally Listed Species	
Federal Aquatic/Prime Conservation	Federally Listed Aquatic Species and Prime Conservation Area ^b
Federal Terrestrial/Sensitive	Federally Listed Terrestrial Species and State Species of Greatest Conservation Need
None	None
Wetland and Habitat Values	
Extensive	Extensive wetland impacts (> 200 Acres)
Moderate	Moderate wetland impacts (>1 - 200 Acres)
None/Minimal	<1 Acre
State Species of Special Concern	
Core Conservation	Core Conservation Population (YCT)
Conservation	Conservation Population (YCT)
Sport/None	None or Sport Population (YCT)
Special Designation	
Federal	Federal Wild and Scenic River or Wilderness Area
State/eligible Federal	State Protected (Natural and Recreational) or eligible Federal WSR
None	None

^aSpecific site location data is not available, however, assumptions have been made based on best professional judgment.

^bThree tiers for prioritizing conservation and management options per Montana Fish Wildlife & Parks database (2009) supplemented with anticipated data revisions per personal communications with IDFG.

1) **core conservation** populations composed of > 99 percent cutthroat trout genes;
 2) **conservation** populations that generally "have less than 10 percent introgression, but in which introgression may extend to a greater amount depending upon circumstances and the values and attributes to be preserved"; and
 3) cutthroat trout **sport** fish populations that, "at a minimum, meet the species (e.g., YCT) phenotypic expression defined by morphological and meristic characters of cutthroat trout."
 4) **core conservation/conservation** designation is likely **conservation** - unless there is an isolated, pure population of YCT - then it would be **core conservation**; dual designation has been retained until better information is available

^cPhysical location of site is not located on crucial YCT habitat, rather modifications to the hydrology of the water supply source (Bitch Creek) would impact a core conservation population of YCT habitat.

^dSources of Wildlife Habitat data

¹Per feedback from Trout Unlimited, Friends of the Teton River, and American Rivers.

²Per personal communications with IDFG on the Sand Creek and Teton Canyon winter ranges.

³Per the USFS 1997 Revised Forest Plan - Targhee National Forest.

^gPer IDFG special species February 2011 GIS dataset (1-mile buffer area).

^fThreatened and Endangered and Candidate species list obtained from USFWS; however, location specific information based on data compiled by Trout Unlimited, Friends of the Teton River, and American Rivers (unless otherwise specified, some identified in the IDFG February 2011 dataset).

^hPer the 1997 Revised Forest Plan - Targhee National Forest.

^ePrime Conservation Area contains the minimum seasonal habitat components needed to support the recovered grizzly bear population (per the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area, 2007). **There are no federally listed aquatic species within the Henrys Fork Basin.**

Table D. Attribute and Information Summary of Water Supply Alternatives, Henrys Fork Basin Study (Socioeconomic Environment)

Alt #	Surface Storage Site	Land Management Data ^b					Socioeconomic Environment (SE)							Infrastructure				Additional Infrastructure Notes	
		Rating	Private	Federal	State	Conservation Easements ^c	Rating	Boating	Fishing	Yellowstone National Park	Guiding/Outfitting	Scenic/Natural Features ^d	Cultural/Historic Resources ^e	Land Recreation ^d	Rating	Roads	Structures		Habitat
1	Ashton Dam Enlargement	Federal/Conservation	•	•		•	Low	• ^c	• ^{cd}					High	• ^f		• ^f		
2	Blitch Creek	Federal/Conservation	•		•	•	High	• ^{cd}	• ^{cd}		canyon	archeologic site		High	• ^f	• ^f	• ^f	SH32, UPRR Bridge	
3	Boone Creek	Federal/Conservation		•		•	High	• ^c	• ^c	• ^c				Few					
4	Conant Creek	Private	•				High	• ^c	• ^c					Moderate	• ^f		• ^f		
5	Driggs	State	•		•		High				• ^d	archeologic site		High	•		•		
6	Generic Reservoir in Flat Land	TBD					TBD							TBD					
7	Grassy Lake	TBD					TBD							Few	•				
8	Harrops Bridge/Tetonia	Federal	•	•	•		High				• ^d	archeologic site		High	•		•	SH33	
9	Horseshoe Creek	Federal	• ^a	• ^a			Moderate					archeologic site		Few	•				
10	Howell Ranch	Federal	•	•			Moderate		• ^{cd}			archeologic, historic sites	camping	Few	• ^f				
11	Island Park Enlargement	Federal	•	•	•		Low		• ^c					High	•				
12	JY Ranch	Federal	•	•			Moderate					archeologic site		Few	• ^f		• ^f		
13	Lane Lake	Private	•				Low							Few	• ^f		• ^f		
14	Lower Badger Creek	Federal	•	•			High	• ^{cd}	• ^{cd}				camping, trails	Few					
15	Marysville Headworks	Federal	•	•			High	• ^d	• ^d				trails, hunting	Moderate	•		•		
16	Moody Creek (Webster Dam)	Private	•				Low							Few	•		•		
17	Moose Creek	Federal		•			Moderate					archeologic site		Few					
18	Park Lake	Federal		•			Moderate		• ^c					Few					
19	Robinson Creek	Federal		•			High		• ^{cd}			hot springs, canyon	camping, trails	Few					
20	Spring Creek (Canyon Creek)	State	•		•		Low							Few					
21	Squirrel Creek	Federal		•			Moderate		• ^c					Few					
22	Squirrel Meadows (Wyoming)	Federal		•			Low							Few					
23	Teton (rebuild or new site)	Federal	•	•			High	• ^{cd}	• ^d		• ^d		camping	Few					
24	Teton Creek (Alta Project)	Private	•				Low							Few					
25	Upper Badger Creek	Federal/Conservation	•			•	High	• ^{cd}	• ^{cd}				camping, trails	Few					
26	Warm River	Federal	•	•			High	• ^d	• ^d		• ^d	hot springs, canyon	archeologic, historic sites	High	•			SH47	
Managed Groundwater Recharge (and potential recovery) Site																			
27	Egin Lake Enlargement	Private					Low							Few					
28	FMID Recharge Program (Egin Bench)	Private					Low							Few					
29	FMID Recharge Program (all other FMID)	Private					Low							Few					
30	Teton Valley Recharge Program	Federal					Low							Few					
Water Market Alternative																			
31	Credit System	NA					Low							Low					
32	Utilize and/or Expand Existing Banking Program	NA					Low							Low					
33	Economic Valuation of Irrigation Water	NA					Low							Low					
Conservation, Water Management and Demand Reduction Alternatives																			
34	Teton Valley Water Conservation	Private					Low							Low					
35	North Fremont Water Conservation	Private					Low							Low					
36	Lower Bench Water Conservation	Private					Low							Low					
37	Egin Bench Water Conservation	Private					Low							Low					
38	Increase Capacity of Cross-Cut Canal	Private					Low							Low					
39	General Demand Reduction Alternatives	Private					Low							Low					
40	Weather Modification	NA					Low							Low					
41	Consolidation (e.g., Lemhi)	Private					Low							Low					

Qualitative Color Codes to "Rank" Each Attribute

Land Management

Federal/Conservation	Federal, Conservation Easement
State	State
Private	Private

Recreation/Economic Value

High	Significant Impacts to Recreation/Economic Values
Moderate	Moderate Impacts to Recreation/Economic Values
Low	Minimal Impacts to Recreation/Economic Values

Infrastructure

High	Impacts to major infrastructure/development
Moderate	Moderate impacts to human environment
Few	Few impacts to human environment

^aSpecific site location data is not available, however, assumptions have been made based on best professional judgment.

^bLand management data per the BLM Idaho Surface Management Agency (2010). For federal government lands, the data displays the managing agency which may or may not be the same as the agency that "owns" the land.

^cPer feedback from Trout Unlimited, Friends of the Teton River, and American Rivers.

^dPer the Resource Evaluation (IWRB 1992)

^eBased on published information (see Table A).

Table E. Attribute and Information Summary of Water Supply Alternatives, Henrys Fork Basin Study (Water Supply, Natural Environment, Socioeconomic Environment Parameters Summary)

Alt #	Surface Storage Site	Screening Criteria Summary											Numeric Ranking Based on Screening Criteria Summary													
		Water Supply (WS)			Natural Environment (NE)					Socioeconomic Environment (SE)			Water Supply (WS)			Natural Environment (NE)			Socioeconomic Environment (SE)				SUM	RANK	Notes ^c	
Potential (average annual AF)	Hydropower Development Protections	Flood Control	Wildlife Habitat	Federally Listed Species	Wetland and Habitat Values	State Species of Special Concern (aquatic)	Special Designation	Land Management	Recreation/Economic Value	Infrastructure	WS	WS	WS	NE	NE	NE	NE	NE	SE	SE	SE	SE	SE	SE		SE
1	Ashton Dam Enlargement	Moderate	None	Good	Migration	Federal Terrestrial/Sensitive	None	None	None	Federal/Conservation	Low	High	2	1	1	2	2	1	1	1	3	1	3	18	2	
2	Blitch Creek	Moderate	IWRB/NPCC	Moderate	Winter Range	Federal Terrestrial/Sensitive	Moderate	Core	State/eligible Federal	Federal/Conservation	High	High	2	3	2	3	2	2	3	2	3	3	3	28	12	
3	Boone Creek	Moderate	IWRB/NPCC	None	None	Prime Conservation	Extensive	Conservation	Federal	Federal/Conservation	High	Few	2	3	3	1	3	3	2	3	3	3	1	27	11	
4	Conant Creek	Moderate	NPCC	None	Migration	Federal Terrestrial	Moderate	Conservation	None	Private	High	Moderate	2	2	3	2	2	2	2	1	1	3	2	22	6	
5	Driggs	Good	IWRB/NPCC	Good	None	Sensitive	Extensive	Conservation	State	State	High	High	1	3	1	1	2	3	2	2	2	3	3	23	7	
6	Generic Reservoir in Flat Land	TBD	TBD	TBD	TBD	TBD	TBD	TBD	None	TBD	TBD	TBD	4	4	4	4	4	4	4	1	4	4	4	41	13	
7	Grassy Lake	Poor	None	None	None	None	None	None	None	TBD	TBD	Few	3	1	3	1	1	1	1	1	4	4	1	21	5	
8	Harrops Bridge/Tetonia	Good	IWRB/NPCC	Good	Winter Range	Sensitive	Extensive	Conservation	State	Federal	High	High	1	3	1	3	2	3	2	2	3	3	3	26	10	
9	Horseshoe Creek	Good	NPCC	None	Winter Range	None	None	Conservation	None	Federal	Moderate	Few	1	2	3	3	1	1	2	1	3	2	1	20	4	
10	Howell Ranch	Moderate	IWRB	None	Migration	Prime Conservation	None	Core	State	Federal	Moderate	Few	2	3	3	2	3	1	3	2	3	2	1	25	9	
11	Island Park Enlargement	Poor	None	Good	None	Federal Terrestrial/Sensitive	None	None	None	Federal	Low	High	3	1	1	1	2	1	1	1	3	1	3	18	2	
12	JY Ranch	Moderate	IWRB	None	Migration	Federal Terrestrial/Sensitive	None	Core	State	Federal	Moderate	Few	2	3	3	2	2	1	3	2	3	2	1	24	8	
13	Lane Lake	Good	None	Moderate	Winter Range	Federal Terrestrial/Sensitive	Minimal	Core	None	Private	Low	Few	1	1	2	3	2	1	3	1	1	1	1	17	1	
14	Lower Badger Creek	Good	IWRB	Moderate	Winter Range	Federal Terrestrial/Sensitive	None	Core	State/eligible Federal	Federal	High	Few	1	3	2	3	2	1	3	2	3	3	1	24	8	
15	Marysville Headworks	Moderate	IWRB/NPCC	None	Migration	None	None	Conservation	State/eligible Federal	Federal	High	Moderate	2	3	3	2	1	1	2	2	3	3	2	24	8	
16	Moody Creek (Webster Dam)	Moderate	NPCC	None	None	None	Moderate	Conservation	None	Private	Low	Few	2	2	3	1	1	2	2	1	1	1	1	17	1	
17	Moose Creek	Poor	None	None	None	None	None	None	eligible Federal	Federal	Moderate	Few	3	1	3	1	1	1	1	2	3	2	1	19	3	
18	Park Lake	Moderate	IWRB	None	Migration	Prime Conservation	Moderate	Conservation	State	Federal	Moderate	Few	2	3	3	2	3	2	2	2	3	2	1	25	9	
19	Robinson Creek	Poor	IWRB/NPCC	None	Migration	Prime Conservation	None	Core	State/eligible Federal	Federal	High	Few	3	3	3	2	3	1	3	2	3	3	1	27	11	
20	Spring Creek (Canyon Creek)	Poor	NPCC	None	Winter Range	Federal Terrestrial	None	Core	None	State	Low	Few	3	2	3	3	2	1	3	1	2	1	1	22	6	
21	Squirrel Creek	Moderate	NPCC	None	None	Prime Conservation	Moderate	Conservation	None	Federal	Moderate	Few	2	2	3	1	3	2	2	1	3	2	1	22	6	
22	Squirrel Meadows (Wyoming)	Moderate	None	None	None	Prime Conservation	Moderate	Conservation	None	Federal	Low	Few	2	1	3	1	3	2	2	1	3	1	1	20	4	
23	Teton (rebuild or new site)	Good	NPCC	Good	Winter Range	Federal Terrestrial/Sensitive	Extensive	Conservation	eligible Federal	Federal	High	Few	1	2	1	3	2	3	2	2	3	3	1	23	7	
24	Teton Creek (Alta Project)	Moderate	NPCC	None	Winter Range	Sensitive	None	Conservation	None	Private	Low	Few	2	2	3	3	2	1	2	1	1	1	1	19	3	
25	Upper Badger Creek	Good	NPCC	Moderate	Winter Range	Federal Terrestrial	Moderate	Core	None	Federal/Conservation	High	Few	1	2	2	3	2	2	3	1	3	3	1	23	7	
26	Warm River	Good	IWRB/NPCC	Good	Migration	Sensitive	None	Core	State/eligible Federal	Federal	High	High	1	3	1	2	2	1	3	2	3	3	3	24	8	
Managed Groundwater Recharge (and potential recovery) Site																										
27	Egin Lake Enlargement	Poor	None	None	None	None	None	None	None	Private	Low	Few	3	1	3	1	1	1	1	1	1	1	1	15	2	Egin Lakes is part of the IWRB Managed Recharge Program.
28	FMID Recharge Program (Egin Bench)	Moderate	None	None	None	None	None	None	None	Private	Low	Few	2	1	3	1	1	1	1	1	1	1	1	14	1	"Egin Bench" includes five different canal companies who participate in recharge efforts under FMID's contract in the IWRB's Managed Recharge Program.
29	FMID Recharge Program (other)	Poor	None	None	None	None	None	None	None	Private	Low	Few	3	1	3	1	1	1	1	1	1	1	1	15	2	Multiple canal companies within FMID participate in the IWRB's Managed Recharge Program under a contract between FMID and the IWRB.
30	Teton Valley Recharge Program	Moderate	None	None	None	None	None	None	None	Federal	Low	Few	2	1	3	1	1	1	1	1	1	1	1	16	3	Individual recharge sites are encouraged to participate in the IWRB's Managed Recharge Program.
Water Market Alternative																										
31	Credit System	TBD	None	None	None	None	None	None	None	NA	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	
32	Utilize/Expand Existing Banking Program	TBD	None	None	None	None	None	None	None	NA	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	The State Water Supply Bank (IWRB's Bank and Water District 1 Rental Pool) active programs administered by the State.
33	Economic Valuation of Irrigation Water	TBD	None	None	None	None	None	None	None	NA	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	Determine the market value/price of irrigation water and compare with other alternatives on an acre-foot basis.
Conservation, Water Management and Demand Reduction Alternatives																										
34	Teton Valley Water Conservation	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	One alternative, two scenarios [1] 100% flood to sprinkler conversion, and 2) 100% canal lining].
35	North Fremont Water Conservation	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	One alternative, two scenarios [1] 100% flood to sprinkler conversion, and 2) 100% canal lining].
36	Lower Bench Water Conservation	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	One alternative, two scenarios [1] 100% flood to sprinkler conversion, and 2) 100% canal lining].
37	Egin Bench Water Conservation	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	One alternative, two scenarios [1] 100% flood to sprinkler conversion, and 2) 100% canal lining].
38	Increase Capacity of Cross-Cut Canal	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	
39	General Demand Reduction Alternatives	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	Several programs are offered through the IWRB's AWEP and encouraged through the ESPA CAMP process.
40	Weather Modification	TBD	None	None	None	None	None	None	None	NA	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	A pilot program in the Upper Snake River is in operation through the ESPA CAMP process.
41	Consolidation (e.g., Lemhi)	TBD	None	None	None	None	None	None	None	Private	Low	Low	TBD	1	3	1	1	1	1	1	1	1	1	12	1	

^aSpecific site location data is not available, however, assumptions have been made based on best professional judgment.

^bStorage potential volume estimates are not published information, however, volume estimates were made based on topography and an assumed location/elevation.

^cSome alternatives may be eliminated because it is more appropriate to have as part of another program.