IDAHO WATER RESOURCE BOARD

NOTICE AND AGENDA

WATER RESOURCE PLANNING COMMITTEE
MEETING NO. 8-12
OF THE
IDAHO WATER RESOURCE BOARD

Idaho Water Center
6th Floor, Conf. Rms. 602C & D
322 E. Front St., Boise, Id 83702

November 5, 2012 at 8:00 a.m.

1. Introductions and Meeting Purpose
2. Comprehensive State Water Plan
   A. Staff Review on Suggested Revisions of Basin Sections
      Section 4 Snake River Basin
      Section 5 Bear River Basin
      Section 6 Salmon/Clearwater River Basins
      Section 7 Panhandle River Basins
   B. Committee Discussion and Guidance
3. Treasure Valley Comprehensive Aquifer Management Plan
   A. Presentation of Revisions based on Committee Guidance
   B. Committee Recommendation
4. Meeting Schedule

Upcoming Meeting: November 12, 8:00 a.m.

Committee Members: Leonard Beck, Chairman, Bob Graham, Roger Chase, Chuck Cuddy, Jeff Raybould

AMERICANS WITH DISABILITIES

The meeting will be held in facilities that meet the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations to attend, participate in, or understand the meeting, please make advance arrangements by contacting the Idaho Department of Water Resources at (208) 287-4800.

322 East Front Street, Boise, Idaho 83720 Tel: (208) 287-4800 Fax: (208) 287-6700

Proposed
Treasure Valley Comprehensive Aquifer Management Plan

Figures

Tables

Executive Summary

The Treasure Valley Comprehensive Aquifer Management Plan (Plan) provides a framework for long-range management of the aquifer. The Plan describes the overarching goals and actions that can be implemented to successfully accomplish the stated goals for local residents and the state of Idaho and to promote productive regional cooperation to benefit the area over the next 50 years. The planning area for this Plan covers Ada and Canyon counties and portions of Elmore, Boise, Gem and Payette counties.

The Treasure Valley is in southwestern Idaho. The Treasure Valley Aquifer System (TVAS) is a valuable and significant resource to the region and the state of Idaho. The aquifer is a key part of the regional water resources that make the area attractive for economic growth and an appealing place to live and work.

At the direction of the Idaho Water Resource Board (IWRB) and Idaho Legislature, the Plan is founded on recommendations developed collaboratively by the Treasure Valley Comprehensive Aquifer Management Plan (CAMP) Advisory Committee (Committee). This Plan will be a component of the State Water Plan, which guides the development, use, conservation, and management of water resources in Idaho.

The IWRB recognizes that the long-term management of the water resources of the Treasure Valley must be acceptable to the local community and take into account the social and economic interests of the residents and public interest. The long-range plan must also be consistent with the legal constraints and laws of Idaho.

The Committee developed the following vision for the Plan:

The vision of the Treasure Valley CAMP is to promote and protect Treasure Valley water resources through:

- ***Respect for Idaho water law and water rights***
- ***A sustainable framework of collaboration, cooperation, and stewardship, and***
- ***A commitment to ongoing research, data collection, and analysis***

The Treasure Valley CAMP Committee identified several challenges facing the region over the next 50 years (these actions have not been ranked or placed in order of priority):

- Predicted future demand cannot be met solely by readily available ground water supplies in some areas
- Uncertainty for meeting existing and future needs utilizing the existing water supply infrastructure will increase as annual precipitation variability increases
- Natural flow in the summer and fall is predicted to be reduced
- Currently there is no Treasure Valley drought plan
- Ability of water infrastructure to meet existing and future needs
- Management of interconnected sources
- Meeting water needs and uses associated with future development patterns in a manner that minimizes conflict
- Maintaining quality of life
- Meeting environmental needs
- Meeting water supply needs
- Lack of an organizational structure for ground-water users to collectively plan for and respond to future challenges
- Advanced technical capabilities are needed to meet increasingly complex water management challenges
- Existing water management tools that appear to be under-utilized could help provide solutions to meeting water needs in the future

Guided by the CAMP goals and vision, the Committee identified several recommended actions for addressing the challenges discussed in this plan. Understandably, these actions will need to be more fully refined during the implementation phase, but the Plan, by adopting a mix of strategies, represents a balanced approach to addressing the future water challenges in the Treasure Valley (these actions have not been ranked or placed in order of priority):

- Enhance water data collection, analysis, and planning
- Support ~~i~~investigations of ~~e and support~~ additional storage and supply
- Reduce demand through water conservation taking into consideration the benefits of incidental recharge
- Preserve and protect water delivery infrastructure
- Use tools associated with the Municipal Water Rights Act of 1996 (placeholder)
- Encourage the use of water marketing to address the conversion of water use throughout the valley

Management of the Treasure Valley Aquifer affects numerous stakeholders. Effective implementation of the Plan will require the participation and cooperation of stakeholders and governmental entities with jurisdictional authorities and responsibilities. The IWRB may continue to convene the Committee to guide and make recommendations concerning the implementation of management strategies and review of goals and objectives.

1. Introduction

In 2008, the Idaho Legislature passed House Bills 428 and 644, establishing the statewide comprehensive aquifer planning and management effort and creating a fund to support the effort. The Idaho Water Resource Board (IWRB) and the Idaho Department of Water Resources (IDWR) initiated work in the Treasure Valley to establish a framework and path forward that will lead to sustainable water supplies, optimum use of the aquifer, and development of strategies to minimize potential future conflicts.

This effort was conducted under the leadership of the IWRB. The IWRB is the constitutionally established agency responsible for formulating and implementing the State Water Plan for optimum development of the water resources in the public interest. This Plan is a component of the State Water Plan, which guides the development, use, conservation, and management of water resources in Idaho. The specific goals of the statewide Comprehensive Aquifer Management Plan (CAMP) program are to:

- Provide reliable sources of water, projecting 50 years into the future
- Develop strategies to avoid conflicts over water resources
- Prioritize future investments in water

The IWRB recognizes that the long-term management of the water resources of the Treasure Valley must be acceptable to the local community and take into account the social and economic interests of the residents and public interest. The long-range plan must also be consistent with the legal constraints and laws of Idaho. The IWRB appointed an Advisory Committee (Committee) to consider these interests and develop recommendations for this Plan. For a list of Committee members see Appendix 2.

As the Committee progressed in their work, the members built on the CAMP goals and developed a unanimously supported vision for the Treasure Valley CAMP.

This Plan and the recommended actions described are guided by this vision:

The vision of the Treasure Valley CAMP is to promote and protect Treasure Valley water resources through:

- ***Respect for Idaho water law and water rights***
- ***A sustainable framework of collaboration, cooperation, and stewardship, and***
- ***A commitment to ongoing research, data collection, and analysis***

2. Background and Current Condition

The Treasure Valley water system is a complex system of dynamic hydrologic interconnection. The connection between these waters is a critical element in the location and availability of water for the needs of the Treasure Valley. Water used in one location will likely be the supply for a different water need elsewhere in the basin. Although comprehensive studies have been undertaken, and continue today, the full extent of when, how, and where the ground and surface waters interact is not fully understood. The contribution of surface water to recharge of the aquifer system and the importance of aquifer discharge to drains and the rivers does, however, require that any discussion of the Treasure Valley Aquifer System (TVAS) will inevitably be a discussion about both ground and surface water.

Hydrology and Water Supply

Most of the surface water used in the Treasure Valley originates as snow in the higher elevations of the upper Boise basin where precipitation can be as high as 60 inches annually. This upper basin supplies an estimated 90 percent of the water for the Treasure Valley. The snowpack is important to the Boise River as the March-July runoff season provides 77 percent of the annual stream flow at the Boise River near the Boise gaging station while only 23 percent of the natural flow occurs during the August-February season. The upper Boise basin is approximately 2,650 square miles and consists of four major tributaries, including the North, Middle, and South Forks of the Boise River, and Mores Creek. From Lucky Peak Dam, the lower Boise River flows about 64 (river) miles northwestward through the Treasure Valley to its confluence with the Snake River.

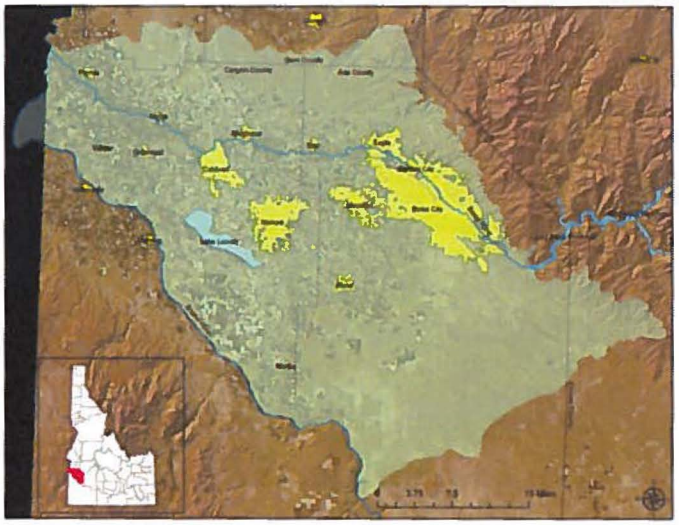

Figure 1. Map of the Treasure Valley Study Area (green-shaded area)

Hydrogeology

The TVAS underlies the lower Boise basin in southwestern Idaho (Figure 1). The TVAS extends downstream from Lucky Peak Dam to the confluence with the Snake River and serves as the primary source of drinking water for the communities and residents within the Treasure Valley. Approximately 95 percent of the valley's drinking water is pumped from the TVAS.

The TVAS can be conceptualized as a complex system of shallow, intermediate, and deep aquifers (Figure 2). The depths and thicknesses of the aquifers vary spatially and are controlled by geologic faulting, topography, and local land use characteristics (e.g., flood irrigation). The hydraulic communication between the various aquifers varies throughout the Treasure Valley adding to the complexity. Hydraulic connections to aquifers underlying areas to the north (Boise foothills to the Payette River) and to the east (Mountain Home Plateau) are currently not fully understood.

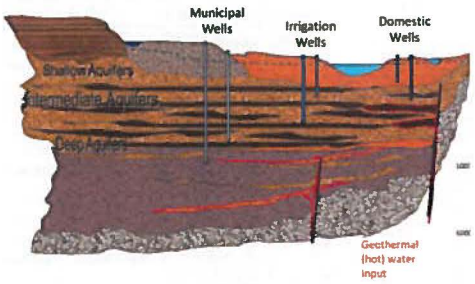

Figure 2. Conceptual Schematic of the Treasure Valley Hydrogeology

The Aquifer system in the Treasure Valley consists of:

- Shallow aquifers – These aquifers supply water to rural domestic and some irrigation wells. Shallow aquifers are generally in direct hydraulic communication with surface water features and form localized flow systems with the nearest surface water body. The shallow aquifers are generally unconfined (the water level represents the top of the saturated zone), and water levels are typically controlled by topography (e.g., the elevations of canals or drains).
- Intermediate aquifers – These aquifers supply water for domestic, irrigation, and municipal uses. The hydraulic communication between the intermediate aquifers and the surface water features of the valley is unknown.
- Deep aquifers – Municipal, industrial, and some irrigation wells typically draw water from deeper aquifers. The hydraulic communication between the deeper aquifers and the surface water features of the valley is limited due to the depths below land surface where the deeper aquifers are found. The deeper aquifers are generally confined (water levels rising above the depth of the water bearing zone), and flowing artesian wells exist within the Treasure Valley. The hydrology of the deeper aquifers is not fully understood.

Ground Water Flow Direction and Water Levels

The ground water flow direction in the TVAS is generally east to west and follows the course of the Boise River. In the southern portion of the TVAS, ground water flows to the south and discharges into the Snake River. Locally, ground water flow

directions are dependent on the location (spatially) within the valley.

Water level trends are a good indication of a stable storage of water in an aquifer system. Rising water levels indicate an increase in water stored, and declining water levels indicate a reduction in water stored. Stable water levels generally indicate an aquifer storage that is in equilibrium.

In the early to mid 1900s, water levels in the shallow aquifer rose significantly because of the development of the valley's irrigation network and continued to rise until the aquifer system eventually reached equilibrium with the drains and river, as indicated by stable water levels. In general, water levels in the shallow aquifer system have remained stable and are controlled by the operation and elevation of the surface water features. Water levels in the intermediate and deep aquifers also appear relatively stable, but some areas of water level decline have been identified in the valley, particularly in the southeast Boise and Lake Lowell vicinities (Petrich and Urban, 2004).

There are existing mathematical models of the Treasure Valley aquifer of various ages and scopes; however they are not adequate to address aquifer management needs.

TVAS Ground Water Budget

The annual ground water budget for the TVAS varies from year to year (Table 1). For illustration purposes, estimates for water year 2000 are used to show the components of the annual water budget for the TVAS because total precipitation and temperature during the 2000 water year were near normal.

The shallow aquifers of the TVAS are generally in direct hydraulic communication with the Boise River and to a lesser extent the Snake River throughout most of the Treasure Valley. The aquifer discharges directly to the rivers and the ground water drainage network constructed in the Treasure Valley to drain shallow ground water from low-lying areas. It is estimated that over 80 percent of the TVAS total discharge enters the rivers and the drain network. Some of the drain water is also re-diverted and used for irrigation by

Table 1. Summary of TVAS Ground Water Budget (modified from Urban, 2004).

Sources of Recharge and Discharge	Estimated Recharge and Discharge for 2000	
	(acre-feet)	(% of total)
Recharge		
Canal seepage	521,500	50
Flood irrigation	404,400	35
Other sources	172,800	15
Total Recharge	**1,098,700**	**100**
Discharge		
Discharge to rivers and drains	881,600	83
Pumping from wells	175,000	17
Total Discharge	**1,056,600**	**100**

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downstream users. The amount of water leaving the TVAS through discharge to the drains, tributaries, or the rivers in 2000 was over 881,000 acre-feet (Urban, 2004).

Surface Water Flows

Unregulated natural flow volumes in the Boise River basin have varied from a low of 676,000 acre-feet annually to a high of 3.6 million acre-feet (MAF) annually. The average unregulated natural flow (1929 – 2010) is 1.9 MAF annually. These volumes were calculated at Lucky Peak and are published by the U.S. Bureau of Reclamation (USBOR). On average 1.6 MAF annually are diverted for irrigation and serves as a significant source of recharge to the TVAS (BOR, 2007). Table 2 displays a summary of historical Boise River (Nov 1 – Oct 31) runoff (at Lucky Peak), outflow (near Parma), and reservoir storage on November 1. Figure 3 shows the variation of runoff (at Lucky Peak) and November 1 storage from 1929 to 2010.

The average annual basin outflow (1972 – 2010) is 1.1 MAF, with outflow volumes varying from 334,000 acre-feet annually to 2.8 MAF annually. The basin outflow is measured at the Boise River near Parma gage, which is operated by the U.S. Geological Survey (USGS) in cooperation with IDWR.

Table 2. Summary of Historical Boise River Nov. 1 – Oct. 31 Runoff and Outflow (IDWR, 2011)

	Boise River Runoff (at Lucky Peak)		Boise River Outflow (near Parma)		November 1 Storage	
	Acre-Feet	Years	Acre-Feet	Years	Acre-Feet	Years
Long-term average	1,929,000	1929-2010	1,120,000	1972-2010	390,000	1956-2010
Maximum	3,673,000	1965	2,820,000	1983	665,000	1965
Minimum	676,000	1977	334,000	1992	65,000	1992

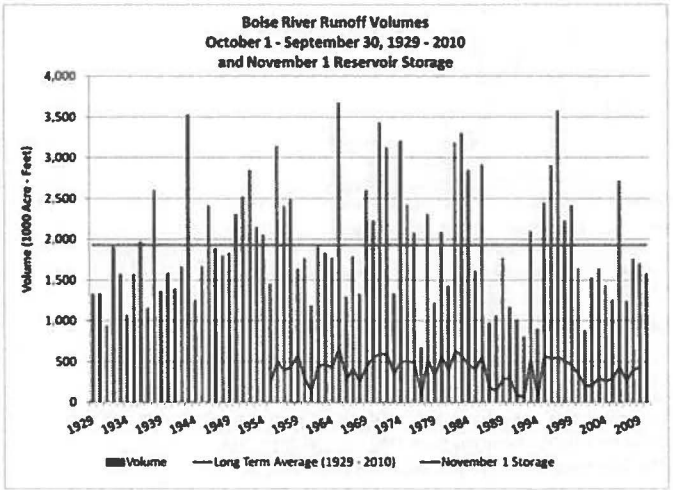

Figure 3. Boise River Annual Unregulated Natural Flow Volumes 1929-2010 and November 1 Reservoir Storage Volumes (U.S. Bureau of Reclamation Hydromet, 2011)

The remaining storage water left in the reservoirs (Arrowrock, Anderson, and Lucky Peak) at the end of an irrigation season is highly dependent on snowfall and irrigation demand for that season. The average reservoir storage on November 1 (1956 – 2010) is 390,000 acre-feet and has varied from a low of 65,000 acre-feet to a high of 665,000 acre-feet. The availability of this "carry over" water reduces the risk of a shortage of irrigation water in the succeeding year. Wise and efficient use of water from year to year helps to ensure better carryover storage for the next year, especially during consecutive dry years.

The hydrograph below (Figure 4) summarizes the historical data from the Boise River at Glenwood Bridge for the period of record (1982 – 2010). The U.S. Army Corps of Engineers (USACE) utilizes the Boise River gage at Glenwood Bridge to monitor and evaluate flood impacts on the river. Currently, flood stage as measured at the Glenwood Bridge gage is 10.01 feet (approximately 7,000 cfs). The maximum discharge since the completion of the reservoir system was 9,840 cfs on June 13, 1983 (USGS, 2011). Typical winter flow out of Lucky Peak (November – March) is approximately 250 cfs. Typical flow at Glenwood after the spring runoff and during the irrigation season (July – September) is approximately 1,000 cfs.

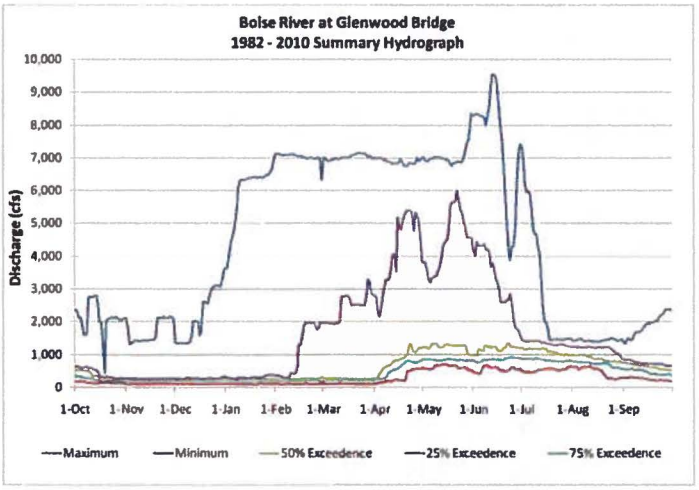

Figure 4. Summary Hydrograph of Boise River Flow from 1982 through 2010 at the Glenwood Bridge

Note: 25% exceedence means that for the specified day of the year the flow was greater than this value 25% of the time for the same day from 1982 through 2010. 50% exceedence is the median and means that for the specified day of the year the flow was greater than this value for 50% of the time for the same day from 1982 through 2010. 75% exceedence means that for the specified day of the year the flow was greater than this value 75% of the time for same day from 1982 through 2010.

During the irrigation season, the Boise River from Lucky Peak Dam to Middleton does not have enough natural flow to meet irrigation demands. Irrigators rely on storage water to supplement the limited natural flow supplies. Below Middleton, there are often enough return flows from drains or ground water seepage into the river to satisfy existing irrigation demands. On average, there are approximately 310,000 acre-feet per year of gain in flow between the Middleton and Parma gages. These gains, 310,000 acre-feet, make up 28 percent of the 1,112,000 acre-feet of outflow from the basin near Parma. The return flows that increase river flows downstream are important and help to provide the necessary water and elevation head to deliver water in the lower Treasure Valley. These base flows play ~~are~~ an important ~~part~~ role in ~~to~~ efficiently delivering irrigation water in the Treasure Valley.

Climate Variability

Climate variability adds another element of uncertainty to planning for future water needs. The IWRB contracted with Boise State University to evaluate potential changes to water supply and demand that might result from climate variability on a watershed scale. There is a large range of uncertainty to climate model predictions; however, general trends are indicated.

Multiple studies of climate change in the Pacific Northwest and northern Rockies estimate increases in mean monthly temperatures of 0.86 to 5.49 Fahrenheit for the 2040 irrigation season compared to the 1971 – 2010 temperature average (BOR, 2008, 2011).

Regional studies for the northwest United States indicate greater climate variability conditions (floods and droughts) will be more severe and change the flow regime on which current hydrologic operating procedures are based. For example, temperature increases would allow more winter precipitation to fall as rain instead of snow, and will result in earlier snow melt. On average, peak flows in the Boise River basin may be higher in the future than current historic high flows. Timing of spring runoff is complex and a function of climatic indexes (e.g., El Niño-southern oscillation, Pacific decadal oscillation), forest fires, and climatic change. Analysis of stream flow measurements shows peaks are occurring a few weeks earlier as also predicted by the climate change models. Peak flow and trends are also influenced by phenomenon such as El Nino and La Nina and other longer term climatic cycles. The earlier melting of snowpack will lead to lower summer stream base flows at a time when evapotranspiration is expected to increase ~~with~~ because of increases in temperature. Fall precipitation could occur more frequently as rain and less frequently as snow.

Climate change projections indicate the Boise River basin may experience wetter wet years and drier dry years. However because our water storage capacity in the basin is fixed, the increased water supplies during the wet years cannot be captured and held over for use during the dry years.

Consequently, wet years do not offset dry years.

Drought

Drought is a significant concern for all Treasure Valley water interests. The most severe droughts occur when there are two or three consecutive dry years when annual runoff is below average and carryover storage is minimal because of water use in previous dry years. The Boise reservoir system is designed to provide carryover storage to get through consecutive dry years. The drought that occurred from 1987-1992 had a major impact on the Treasure Valley. During those six years, the Palmer Drought Severity Index (Figure 5) classified conditions as extreme drought for 28 of the 36 months that comprised the irrigation seasons in the Treasure Valley. The series of dry, hot summers made the reservoir system response more difficult than the drought of 1977. Although 1977 set the record low flow for the upper Boise River, 1976 and 1978 had wet irrigation seasons that reduced the stress on water supply.

The Idaho Drought Plan (IDP) encourages local communities to plan and mitigate for future droughts. The IDP describes the authority counties and cities have to restrict water use and raise funds through ordinances, rules, regulations, proclamations, and short-term levies. It also authorizes the IDWR to take actions to provide for full use of the available water supply in accordance with valid rights for its use during shortages by increasing supervision of water distribution from adjudicated sources, increasing water-right enforcement for non-adjudicated sources, and defining procedures to expedite processing of applications for replacement water supplies.

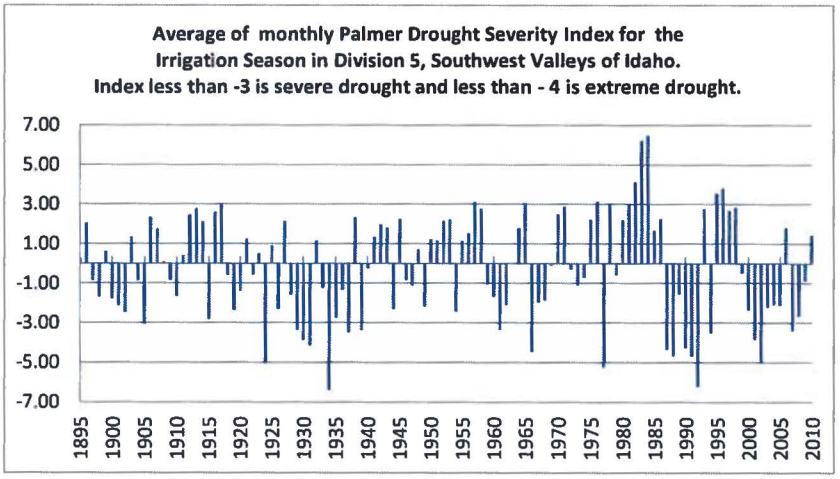

Figure 5. Historic Drought during the Irrigation Season in Southwest Valleys of Idaho. (NOAA and National Climate Data Center http://www.ncdc.noaa.gov/sotc/drought)

In conjunction with the IDWR's Drought Plan and Water Supply Committee, the Natural Resource Conservation Service (NRCS) compiles a monthly Surface Water Supply Index to illustrate the total seasonal water supply. NRCS uses 1.5 MAF as the threshold for when water supply shortages start to appear in the Treasure Valley. This is based on past years when shortages were realized by irrigation districts. For the period 1987 – 1992, 5 of the 6 years had shortages and below normal carryover storage (Figure 6).

Available records indicate that during drought years surface water irrigation is supplemented with ground water by as much as 300,000 acre-feet. This situation places additional stress on ground water supplies.

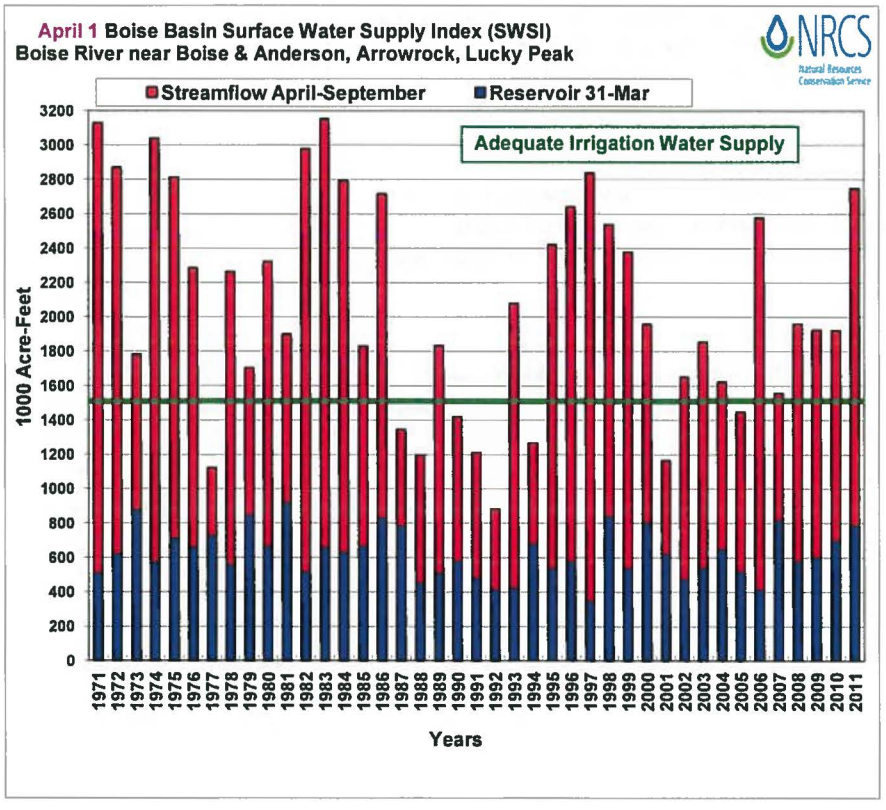

Figure 6. April 1 Boise Basin Surface Water Supply Index

Challenges, Priorities and Opportunities Associated with Water Supply:

Predicted future demand cannot be met solely by readily available ground water supplies in some areas.

Ground water supplies are not infinite. There is potential for additional ground water development, however the Treasure Valley aquifer is not homogeneous. Characteristics vary locally and regionally (and by depth). This variation results in limited availability of ground water supplies to meet existing and future needs in some areas. Ground water supplies are especially limited in southeast Ada County and the Lake Lowell area. There are also concerns about ground water levels in the north foothills. (IDWR data was used.)

Uncertainty for meeting existing and future needs utilizing the existing water supply infrastructure will increase as annual precipitation variability increases.

Historical hydrological records may not be sufficient for forecasting future conditions because of increased variability. Water supply solutions may include better monitoring to improve flow predictions, which allow better planning in the short-term while planning for future longer-term needs in the valley.

Natural flow in the summer and fall is predicted to be reduced.

Reduced natural flows will result in less water available to fill natural flow water rights. This phenomenon results in increased use of stored water from the reservoirs leading to less reservoir carryover. Warmer temperatures during the growing season would increase water demand for all uses.

Currently there is no Treasure Valley drought plan.

Lack of a comprehensive regional response before the next drought will delay demand reduction actions needed to reduce the negative impacts of drought and increase the likelihood of conflict between water-right holders.

Distribution

Reservoir System

The irrigation water supply of the Treasure Valley relies upon a reservoir system capable of storing approximately 1,000,000 acre-feet of water (as shown in Table 3). This equals about one-half of the average annual inflow of the Boise River. Four reservoirs make up the reservoir system. Three of those reservoirs—Arrowrock, Anderson Ranch, and Lake Lowell—were constructed in the early to mid-1900s by the USBOR as part of the development of the Boise Project Board of Control (BPBC). A fourth reservoir, Lucky Peak, was constructed in 1957 by the USACE for flood control, irrigation, and other congressionally authorized purposes. Combined, these reservoirs provide water supplies for congressionally authorized purposes.

To meet irrigation demand, flows past Lucky Peak Dam average approximately 3,900 cfs during the irrigation season, which spans April through October. During periods of peak irrigation demand, flows past the dam are kept at about 4,500 cfs. Reservoir space is allocated to storage users according to terms set out in spaceholder contracts entered into between the various users and the Secretary of Interior through the USBOR. While the majority of the contracted reservoir space is used for irrigation storage, approximately 5,000 acre-feet in Anderson Ranch Reservoir is used to store water for municipal and industrial purposes.

Arrowrock, Anderson Ranch, and Lucky Peak are operated as a unified system for flood control and refill purposes. Flood control operations are governed by flood control rule curves developed by the USACE. Taking into account various hydrological data, the rule curves attempt to fix the amount of empty reservoir space needed to intercept and capture peak spring runoff flows in order to minimize the effects of flooding downstream. Presently, the flood control objective is to limit flood flows to 6,500 cfs at the Glenwood Bridge.

Table 3. Capacities of Federal Reservoirs in the Boise Basin (Source: USACE).

Reservoir	Elevation at Full Pool	Capacity (Acre-Feet)			
		Active	Inactive	Dead	Total
Lake Lowell	2531.2	159,400	--	--	159,400
Arrowrock	3216.0	272,200	--	--	272,200
Anderson Ranch	4196.0	413,100	37,000	24,900	475,000
Lucky Peak	3055.0	264,370	28,730	--	293,100

Note: Active capacity is space from which water can be released for specifics purposes. Inactive capacity is space from which water can be released but is normally retained for a specific purpose, for example, Anderson Ranch inactive space is reserved for power head. Dead capacity is space from which water cannot be released by gravity because it is below the elevation of the lowest outlet.

Operation of the reservoir system, with the exception of Lake Lowell, is coordinated between the USBOR, which operates Arrowrock and Anderson Ranch, and the USACE, which operates Lucky Peak. By agreement between the two federal agencies, the storage system is operated as a unified system to maximize the capabilities of the reservoirs. Reservoir operations are generally defined by three operating periods, which are based on climatological patterns, runoff, and irrigation demand as shown below in Figure 7.

During the maintenance period, the system is operated primarily for carry over and storage as allowed by flood control requirements; however, storage releases continue for municipal/~~ and~~ industrial and stream flow maintenance uses. During the flood control and refill period, operation is adjusted continually based on runoff forecasts to provide space for flood control and to assure storage refill for water users, while releasing water necessary to satisfy irrigation demand. The drawdown period is operated for release of irrigation storage water. To the extent possible, water is typically stored as high in the system as possible, although storage accrues to accounts in order of priority. During the summer, Lucky Peak is held near full pool for recreation purposes, and water is released from Arrowrock and Anderson Ranch Reservoirs to meet irrigation demand.

Lake Lowell is operated by the BPBC to store water and regulate water supplies for the lower end of the project. Lake Lowell is drawn down during the summer when irrigation demands exceed the capacity of the New York Canal.

Canals

An extensive distribution system carries water to 75 points of diversion and provides irrigation to 350,000 acres of land below Diversion Dam. Most large canals branch into sub-canals and laterals to distribute water throughout the valley. Irrigation districts and canal companies maintain their individual systems of delivery for their patrons. There are

approximately 1,170 miles of major irrigation canals (see Figure 8).

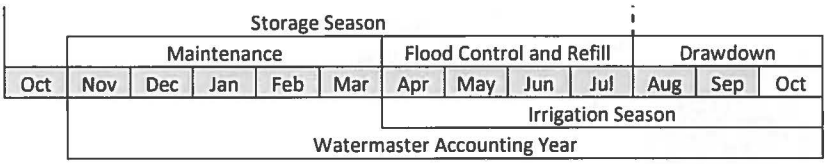

Figure 7. Operating Periods and Seasons (water year shown by shaded blocks) (Source: USBOR)

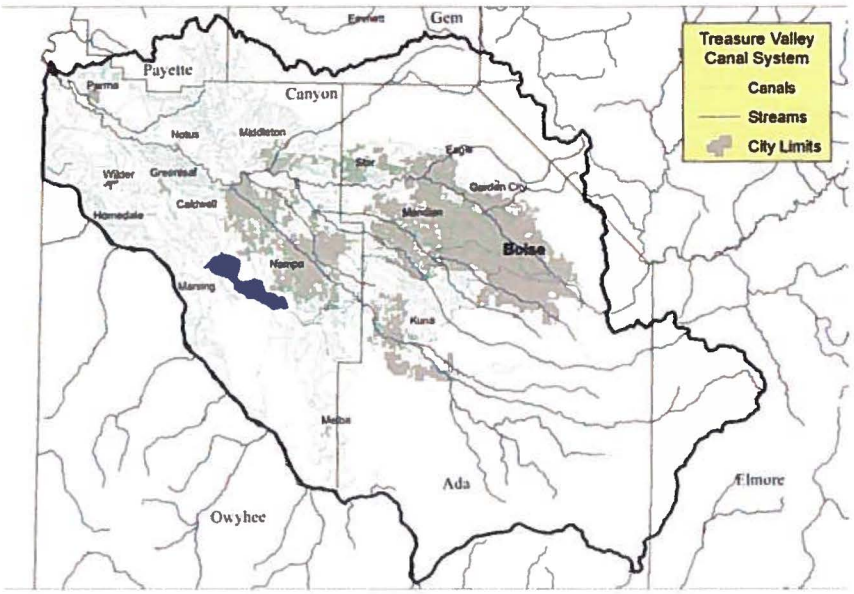

Figure 8. Treasure Valley Canal System

Drains

Approximately 195 miles of drains channel water out of low lying areas and 11 principle drain systems discharge into the Boise River. Most drains were constructed to drain ground water from shallow aquifers and reduce the incidence of water logged soils. Some of these drains were modified or expanded existing natural drainage systems. Some drains also serve as canals, providing additional irrigation water through re-diversion. Some drains flow year round because of ground water discharge. Ground water discharge to the drains will fluctuate due to water table changes. These fluctuations can be caused by seasonal changes, ground water withdrawals, irrigation practices, recharge, drought, and other changes in the water budget. Studies are currently underway to better understand the drainage system and quantify seasonal and annual flows.

Challenges Associated with Distribution:

Ability of water infrastructure to meet existing and future needs

Mechanisms to protect the existing infrastructure of wells, canals, ditches and collection systems have existed for decades. It is important to retain this protection for the current and future benefit of the region. An additional challenge is the need to modernize existing infrastructure to optimize the beneficial use of water.

Management of interconnected sources

Surface water and ground water are hydraulically connected. This interconnection presents a challenge for future management of surface and ground water rights, which historically have been managed separately. Further complicating this challenge is the recognition that while we understand that a connection exists, our understanding of the timing, extent, and location of the interconnected sources is limited and needs further study in order to provide effective management.

Water Use and Needs

Ninety-five percent of the Treasure Valley water use falls into one of two major categories: domestic, commercial, municipal, and industrial use (DCMI); and irrigation. While not always included in water-use estimations (Figure 9), water is used to recharge the aquifer, support the river and tributary biological systems, and provide delivery head to convey irrigation water (including conveyance losses). Some municipal and industrial systems implement aquifer storage and recovery techniques to store treated water off peak and re-pump during summer demand. Water leaving the Valley passes through downstream hydropower plants that generate low-cost electricity used in the valley.

In the Treasure Valley, the principal source of water for DCMI is ground water. For DCMI, 94 percent of the water comes from ground water sources and six percent comes from surface water sources. For irrigation water, three percent of water comes from ground water sources and 97 percent comes from surface water sources. Large and small community systems, as well as individual wells, all provide water for domestic use in the Treasure Valley. Per Capita daily use is approximately 160 gallons (WRIME 2010, USGS 2005).

Individual homes that are not on a water supply system use ground water for drinking water, culinary uses, and irrigation. There are over 23,500 domestic wells in the Treasure Valley. This is a minimum number because there are domestic wells that have not been documented in IDWR records.

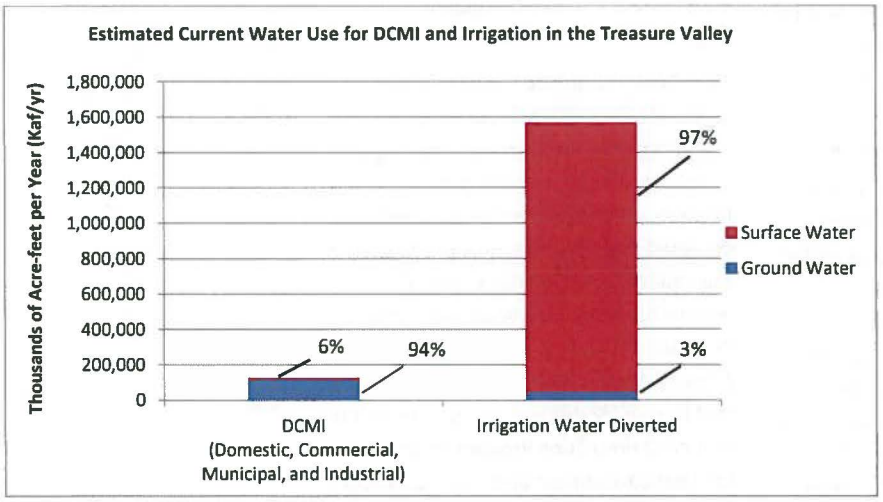

Figure 9. Estimated Current Water Use for DCMI and Irrigation in the Treasure Valley (Urban, 2004)

The single largest supplier of ground water is United Water Idaho, whose service area includes the City of Boise and part of Ada County. United Water is currently the only municipal supplier that also delivers treated surface water for DCMI uses. They serve a population of approximately 240,000. United Water produces about 45,000 acre-feet/year (32,000 acre-feet from ground water and 13,000 acre-feet from surface water) and regularly updates its water demand projections based on records of customer usage and modeling future growth. The other large suppliers are the Meridian Water Department (78,000 people served), City of Nampa (81,000 people served), and the City of Caldwell (46,000 people served). These three systems use ground water exclusively for supply.

While surface water is the primary source of water for irrigation, ground water is also a source for irrigation. The annual demand varies because some irrigators rely on ground water every year and some use it to supplement surface water. Weather conditions strongly influence irrigation demand and therefore the necessity of using ground water in a particular year.

The IDWR records show there are almost 30,000 total wells in the Treasure Valley. Ground water quality in the Treasure Valley Shallow and Treasure Valley Deep hydrogeologic subareas is regularly determined from data collected through the Statewide Ambient Ground Water Quality Monitoring Program. The statewide program is administered by the IDWR in cooperation with the USGS. The Treasure Valley Shallow and Treasure Valley Deep subareas are located primarily in Ada and Canyon Counties and generally correspond to the Treasure Valley CAMP study area. USGS in cooperation with the IDEQ has performed a comprehensive survey of existing wells in the Treasure Valley CAMP study area from 1992 to 2000.

Water Quality

Water quality is an important characteristic in meeting future water needs in the Treasure Valley. Ground water in the TVAS is generally of good quality for drinking and other uses. Surface water quality is variable and has been impacted by both natural and anthropogenic sources. Public drinking water systems are required to monitor their water supply for compliance with drinking water regulations and report the results to their users. Individual private wells generally do not have this requirement. Overall, the water quality throughout the system could constrain the availability of water supplies to meet current and future water needs if the water quality is degraded.

The IDWR has statutory authority for statewide administration of the rules regarding well construction, licensing of drillers, and proper abandonment of wells in Idaho. Well construction standards are designed to protect the quality of water in the aquifer. Additionally, the IDEQ administers the Idaho Wellhead Protection Program. The purpose of this program is to prevent the contamination of ground water that is used for drinking water. The Idaho Wellhead Protection Program is voluntary for local government and water purveyors to implement.

Degraded water quality can impact both supply as well as significantly increase costs for ground water providers and surface water users.

Fisheries and Biological Flows

Native coldwater species, including trout and whitefish, inhabit the middle and upper reaches of the Boise River from Lucky Peak Dam to Star. Winter stream flows below Lucky Peak Dam are the largest constraint on fish populations. Prior to the 1990s, winter flows were often 150 cfs or lower, providing only marginal overwinter habitat for wild trout and other sportfish.

The USBOR holds 152,300 acre-feet of un-contracted storage space that it has used in consultation with the IDFG to provide flows in the Boise River below Lucky Peak Dam during the non-irrigation season. Storage releases have increased typical winter flows to 240 cfs, which requires approximately 86,000 acre-feet of storage for about 180 days. During drought periods, these flows have been reduced to avoid exhausting the winter storage supply. Since winter flows increased in the mid-1990s, wild trout populations have increased 17-fold, with an estimated 2,000 fish per mile in some reaches.

The Boise River is generally a gaining reach from Star to its confluence with the Snake River and therefore has good stream flows, but water quality conditions can only seasonally support a cold-water fishery. This section of river supports a fair fishery for introduced sport fish, including largemouth bass, smallmouth bass, and channel catfish. The Lake Lowell fishery consists primarily of largemouth bass, smallmouth bass, yellow perch, black crappie, bullhead, bluegill, and channel catfish.

Some tributaries to the lower Boise were channelized and capacities have changed, which may have altered aquatic and riparian habitat. Functional riparian zones and wetlands adjacent to the Boise River and tributaries provide ecological services, such as water quality protection, storm water control, aquifer recharge, and ground water protection and provide important habitat for fish and wildlife. Riparian and wetlands support a disproportionately large number of species and diversity relative to other areas.

Recreation and Aesthetic Values

The Boise River contributes greatly to the quality of life in the Treasure Valley and is partly responsible for the growth in the area. Cultural attractions include a string of city parks and greenbelt trails, undeveloped areas within an urban setting, and sportsman's access areas. Natural attractions along the river range from basalt cliffs to a gallery of cottonwood forests and an extensive riparian zone.

There are water recreation opportunities available from the upper reaches of the Boise basin, on each of the reservoirs, and on the Boise River below Lucky Peak.

Boaters, fisherman, and waterfowl hunters access the lower Boise River from Lucky Peak Dam to the confluence with the Snake River. Floating the five-mile reach from Barber Dam to the center of Boise is especially popular in the hot summer

months. Likewise, water skiing is popular on Lucky Peak Reservoir.

Hydropower

Hydropower is generated below the reservoirs at both federal and non-federal hydroelectric power plants. Federal reclamation power plants were constructed at Anderson Ranch Dam (40,000 kW) and Boise Diversion Dam (1,500 kW) as part of the development of the Boise Project. These power plants provide power to operate project facilities and to help reduce power costs to Project farmers who depend on pumping water for irrigation. In 1988, four of the five irrigation districts that ~~who~~ make up the BPBC completed construction of a power plant at Lucky Peak Dam (101,250 kW). Power generated at the facility is under contract with the Seattle Light Company. ~~More recently i~~In 2010, the BPBC completed construction of a hydropower facility on the Boise River at Arrowrock Dam (18,000 kW). Ada County owns a 3,700 kW power plant located at Barber Dam that is located just upstream of Boise. Upstream of the reservoir system the Atlanta Power Company owns a 187 kW hydro power plant at Kirby Dam that supplies electricity to the town of Atlanta. A number of hydro plants have been constructed on canal drops in the Treasure Valley. Water leaving the Boise River basin enters the Snake River and continues to generate low-cost electricity at Idaho Power's Hells Canyon Complex for Idaho Power customers in the Treasure Valley.

Anticipated Changes in Water Use

Water demand in the Treasure Valley is expected to increase, although there is no consensus on the amount as demonstrated by three recent studies. The USBOR projected in a 2006 assessment level study that annual consumptive water demand in the Boise basin could increase by as much as 124, 085 acre-feet by 2050. WRIME's detailed 2010 demand study determined that annual demands for water in the Treasure Valley would increase by 82,880 acre-feet by 2060. The IDWR staff estimates that new water demands and shortfalls in water supply for existing demands could result in a need for new annual water supplies of approximately 170,000 acre-feet.

New water needs are difficult to quantify because there are areas of uncertainty, along with many variables that will determine actual water use and need. Changing land uses and social attitudes, as well as economic conditions, are all factors that will affect water use in the Treasure Valley.

Future water demand, driven mostly by increased population and economic growth, may be partially met by water conservation and land use and water use changes. Particularly difficult to anticipate is what proportion of growth will be on undeveloped land, rather than farm land, and what industrial or commercial uses might develop. Those changes are most likely to increase demand for water above current usage.

Challenges, Priorities and Opportunities Associated with Water Use and Needs:

Meeting water needs and uses associated with future development patterns in a manner that minimizes conflict

The Treasure Valley population and economy has grown over the past decade and is expected to do so in the future. A recent study projects up to 650 KAF (WRIME 2010) could transition in use from agricultural to DCMI although a wide range of possible scenarios could occur.

The Treasure Valley must begin to evaluate how best to fulfill the anticipated new demand for water, actively planning for expansion, while encouraging conservation and protecting existing uses and benefits.

Maintaining quality of life

A challenge for the Treasure Valley will be to preserve the quality of life while being sensitive to the changing needs of the Treasure Valley into the future. Quality of life can include aesthetics, recreational needs, property values, socio-economic values, and influences economic development. Issues of quality of life are often subjective and water management decisions can affect quality of life in the Treasure Valley. How these issues influence water management will remain a challenge.

Meeting environmental needs

A challenge over the next 50 years will be to conserve and protect the water resources in the Treasure Valley's streams and aquifers and the riparian habitat it supports, while providing the water supplies for the current and future use. An incomplete understanding of the effect of water diversions for both consumptive and non-consumptive uses on the surface water and ground water leads to a difficulty in assessing their impact on the natural environment. Water managers and water users will be challenged to voluntarily and collaboratively provide functional habitats and mitigate the impacts of water diversions and discharges on the natural environment.

Meeting water supply needs

A challenge for the Treasure Valley will be to meet new and on-going water demands over the next 50 years. The size and location of future water demands, as well as projections for shortfalls in meeting current demands, is uncertain. Water supply solutions involve resolving difficult social and economic issues depending on form, size, and location. Some solutions, such as ground water and surface water storage proposals, require a long lead time to plan and construct so must be commenced long before there is consensus regarding the size and scope of future water demands. The challenge will be to conduct wise, proactive planning and marrying that with careful monitoring of demand increases and supply shortfalls to develop appropriate, timely, and economical water supply solutions.

Management and Administration

A long history of water development and legal decisions has led to a complex system of interaction among water managers in the Treasure Valley. Water administration is under the authority of the Director of the IDWR. However, numerous organizations and agencies are involved in the practical management of water. The IWRB is a constitutionally created body responsible for formulating, adopting, and implementing a comprehensive State Water Plan for conservation, development, management, and optimum use of all unappropriated water resources and waterways of this state in the public interest. The State Water Plan is a guiding document for all state actions and activities. The IWRB undertakes water projects for a variety of purposes throughout the state. The IWRB also provides financing for local water entities, such as canal companies, irrigation districts, cities, and others to undertake water projects, including improvement, expansion, and reconstruction of facilities.

Water District #63 was created by the Director of the IDWR to administer surface water rights from the Boise River currently subject to administration. The administration is carried out under state water law and court decrees. Water rights to more than 330,000 irrigated acres are administered in the Treasure Valley from the Boise River. In addition to irrigation, water rights for other uses are also administered.

Throughout the water year, the watermaster works closely with the NRCS Snow Survey, IDWR, the USBOR, and the USACE. The information provided by these agencies helps the water users understand predictions for the total amount of water available each year. Water District #63 currently records 75 points of diversion weekly during the irrigation season. This information is used with the IDWR accounting program to track natural flow and storage use at each diversion. Data from the water district, the USGS, the USBOR, and Idaho Power Company are compiled to run the water rights accounting model. The IDWR operates the daily water rights accounting model, and the water master uses the model output to administer the water rights and storage water in the basin.

Ground Water Rights not Currently Administered (as of 2012)

The administration of water rights generally refers to the curtailment of junior water rights to satisfy senior water rights. Water rights are administered by a watermaster appointed by the IDWR. In order to administer water rights, they must be legally quantified through adjudication or other administrative action, such as a license.

In the Treasure Valley, only surface water rights are currently administered by the watermaster because ground water rights have not been fully adjudicated. Following the completion of the Snake River Basin Adjudication (SRBA), it is expected that ground water rights may be included in a water district and conjunctively administered in priority. Conjunctive administration is the term used to describe

administration of both ground water and surface water under a common system. Administration of ground water rights, or the implementation of conjunctive administration in the Treasure Valley, is not currently underway.

The legislature adopted the Ground Water District Act in 1995 to create a mechanism to allow ground water users to organize and to formulate mitigation plans to provide protection for senior surface water rights that otherwise would be materially injured by ground water pumping. To date, the ground water users in the Treasure Valley have not elected to form such a district.

Irrigation Districts/Canal Companies/Lateral Associations

There are 47 Irrigation entities that operate within the Treasure Valley. These entities were created locally for the purpose of new irrigation development. Irrigation entities usually hold water rights and own diversion facilities and infrastructure. The majority of storage space in the reservoir system is used for irrigation by these entities that hold spaceholder contracts with the USBOR.

State Law Associated with Requiring the Continued Use of Irrigation Water for Landscaping

In 2005, the Idaho Legislature adopted Idaho Code 67-6537, which encourages the use of surface water for irrigation, a requirement directed at applications for land use changes, such as from agricultural land to residential subdivisions. The law amended the Local Land Use Planning Act and requires that if land has irrigation water appurtenant and is reasonably available, access and use of the surface water for irrigation will be used.

Flows Regulated to Star

Average summer flows at Star vary with irrigation demand but 250 cfs is the target flow for the administration of water deliveries below Star. Surface water in the Boise River and its tributaries upstream from Star is considered fully appropriated during the irrigation season and during much of the rest of the year. In 1995, the Director of the IDWR issued a moratorium order stating that new applications for water would be denied unless ~~it~~ they included an acceptable plan to mitigate or avoid injury to existing water rights. The order also describes an area in which applications for ground water shallower than 200 feet below the surface would only be processed if they included mitigation measures or could show no adverse impacts to existing water rights.

Downstream from Star, surface water (as well as ground water) is available for new appropriation, but the actual amount will vary from year to year and season to season.

Salmon Flow Augmentation

The USBOR holds 40,932 acre-feet of storage space in Lucky Peak Reservoir to be used for downstream salmon flow augmentation. This is a component of the (up to) 427,000 acre-feet of storage water that USBOR delivers from the Snake River above Brownlee Reservoir every year for salmon flow augmentation, consistent with the Nez Perce term sheet and Idaho Code 42-1763B. If replacement water supplies

could be found in another basin (consistent with the Nez Perce term sheet) and delivered for salmon flow augmentation, this 40,932 acre-feet in Lucky Peak could potentially be made available to help meet future water needs in the Treasure Valley.

Water Markets

The Idaho Water Supply Bank (Bank) was legislatively recognized in 1979 (Section 42-1761, Idaho Code) and is operated under the authority of the IWRB. The state program includes two distinct programs, **Rental Pools** and the **Water Supply Bank**, which are both essentially water exchange markets intended to assist in the marketing of natural flow and water stored in Idaho reservoirs. They also provide a mechanism by which water rights and stored water that is not being used can be made available for use by others through a lease and rental process.

The Bank includes water rights from surface water and ground water sources throughout Idaho. Water rights may be leased (deposited) to the Bank if not currently in use and then rented (withdrawn) from the Bank by another water user for beneficial uses such as commercial, industrial, irrigation, or mining. In addition, water rights leased to the Bank are protected from forfeiture. Applications to lease and rent water from the Bank are currently received and processed by the IDWR. The Boise River drainage had the most activity in the state in 2010 for leasing water rights into the Bank but only 9% of these rights were rented back out for actual use (2010 Water Supply Bank Annual Report, IDWR).

Water District #63 Rental Pool (Rental Pool) is a mechanism for reservoir spaceholders to make stored water available to other entities in short supply in a given year. The Rental Pool also provides a source of revenue for Water District #63 to make improvements in water distribution while encouraging the maximum beneficial use of stored water. The Rental Pool is under the jurisdiction of and operated by the local committee appointed by the IWRB. The local committee develops the rules of procedure, lease pricing, and operation requirements for their Rental Pool, which then must be approved by the IWRB. The USBOR must also approve the rules and rates for Federal storage as a facility owner. The watermaster administers the Rental Pool under the guidance of the local committee.

The Rental Pool has rented an average of 6,236 acre-feet over the past 8 years, excluding the USBOR-held uncontracted space. Use of the Rental Pool appears to be low compared with other rental pools in the state despite the rapid growth of DCMI uses in the basin.

Challenges, Priorities and Opportunities Associated with Management and Administration:

Lack of an organizational structure for ground water users to collectively plan for and respond to future challenges

Solutions to meeting long-term water needs and avoiding conflict may require action beyond single individuals. Long term successful solutions may require cooperative/collaborative efforts within and among ground water users who share a common interest.

Advanced technical capabilities are needed to meet increasingly complex water management challenges

Although we understand a great deal about the regional hydrology, our information does not provide a full understanding of the localized interaction between ground and surface water, and between the shallow aquifer and deep aquifer. Knowledge is not sufficient to fully characterize the hydrologic system which results in difficulty predicting system responses to management actions. Historical hydrological records may not be sufficient for forecasting future conditions. Existing ground water models do not incorporate newer information or forecasts.

Existing water Management tools that appear to be under-utilized could help provide solutions to meeting water needs in the future

Several water management tools exist that could be utilized to help meet future water needs, but currently appear to be under-utilized. The Boise River (Water District 63) Rental Pool, which facilitates marketing of reservoir storage water, has a lower level of activity when compared with the Payette and Upper Snake Rental Pools, despite the Treasure Valley having rapidly growing water needs. The Water Supply Bank facilitates marketing of natural flow and ground water rights. Bank records show that in the Treasure Valley there is considerable activity to lease water rights into the Bank, but little demand to rent water rights out of the Bank even with the Treasure Valley having rapidly growing DCMI water needs. Another tool is the Municipal Water Rights Act of 1996 which provides for growing municipalities to acquire water rights based on future growth projections.

3. Recommendations ~~Actions Needed~~

Guided by the CAMP goals and vision, the Committee identified several recommended actions for addressing the challenges discussed in previous sections of this Plan. Understandably, these actions will need to be more fully refined during the implementation phase, but the Plan, by adopting a mix of strategies, represents a balanced approach to addressing the future water challenges in the Treasure Valley. These actions have not been ranked or placed in order of priority.

Enhance Water Data Collection, Analysis, and Planning

Several types of data are needed to effectively manage the water resource. Water planning and management tools should be developed and updated using accurate data. These tools are needed to reduce uncertainty and improve effectiveness and efficiency. Taking the following actions will contribute to successful water management that protects the public health and safety, minimizes conflicts, and promotes the economic and environmental health of Idaho:

- Improve ground water models and technical tools to meet administrative purpose and to facilitate decision making;
- Support water supply modeling and stream flow monitoring;
- Measure water-use changes and report demand trends to the IWRB;
- Support drought planning to increase the resiliency of the water supply specific to the Boise drainage;
- Support efforts at assessing potential effects of water management on the natural environment;
- Create a mechanism for coordination within the ground water community;
- Continue to increase transparency of planning process;
- Organize a periodic Water Forum ("Water Summit") to assess the state of the aquifer and discuss emerging issues and opportunities.

Additional Storage and Supply

Additional storage or other sources of water supply may be needed in the future to offset the increased variability of water supply and additional water demand. Because of the extended lead time required for initiating storage and water supply projects, study of these projects should be continual. This will ensure the information is available when decisions need to be made. The following actions should be part of the evaluation of future supply options:

- Continue the study of the feasibility of potential surface water storage projects in a manner that comprehensively addresses supply options and avoids conflict;
- Investigate the feasibility of utilizing managed recharge for meeting future water demands;
- Support the exchange of the USBOR's salmon flow augmentation space in Lucky Peak (excluding stream flow maintenance) with replacement water supply consistent with the Nez Perce term sheet;

- Evaluate augmentation of existing cloud-seeding programs as an option for increasing water supply.

Reducing Demand through Water Conservation

Reducing demand through water conservation should be adopted as one of the strategies for meeting future water needs in the Treasure Valley. Capital costs associated with new supply may be avoided through the reduction of per capita demand. Addressing these issues is a multi-jurisdictional responsibility; therefore the IDWR should work in cooperation with water users and water providers to collaboratively develop incentives to reduce demand. The following actions should be taken to conserve water and reduced demand:

- Use education to encourage conservation;
- Encourage conservation and efficient use of ground water;
- Encourage conservation and efficient use of surface water, where a viable opportunity exists, taking into consideration the benefits of incidental recharge;
- Support efforts for retrofitting neighborhoods with pressurized irrigation;
- Encourage and support wastewater/gray water reuse;
- Encourage or support incentives for conservation;
- Develop guidelines for conservation programs;
- Consider conservation requirements for new water appropriations.

Potential Conversion of Water Use from Agriculture to Other Uses

Urbanization has changed some water demand from agricultural irrigation to residential irrigation and other uses. This trend is expected to continue into the future as additional growth occurs. The intent of these actions is to ensure irrigation water is available for residential use and irrigation entities continue to have financial viability and protection of infrastructure. Domestic irrigation provided through the canal systems is also beneficial because it reduces the amount of water that municipal water systems need to provide. The following actions should be undertaken to ensure orderly transition of water use from agriculture to DCMI and other uses:

- Continue to support the use of surface water on those lands that convert from agriculture to DCMI and other uses utilizing the existing irrigation entities;
- Support voluntary cooperative arrangements between irrigation entities and municipal providers to deliver surface water recognizing the long-term challenges associated with maintaining Homeowners Association-owned systems;
- Encourage the use of water marketing to meet current and future needs including the use of the Rental Pool and the Bank.

Municipal Water Rights Act of 1996

The Municipal Water Rights Act of 1996 is a tool available to municipal providers to secure water rights for growing municipal water demands based upon anticipated future needs.

Preserve and Protect Water Delivery Infrastructure

The integrity of the delivery system is vital to the optimal use of water in the Treasure Valley. The following actions recognize specific components of the water delivery system that will ensure continued integrity into the future:

- Support voluntary arrangements between irrigation entities and municipalities to ensure long-term maintenance of new residential irrigation systems;
- Seek funding from a diversity of sources;
- Ensure easements/access to canals for maintenance in face of growth;
- Continue to support considerations of security, both in terms of infrastructure and on water quality;
- Support the rehabilitation and modernization of water delivery infrastructure;
- Explore opportunities to minimize fish entrainment in the canal systems;
- Inform land-use entitlement and transportation authorities at both the local and state level to help the irrigation community protect its easements and right- of-way to maintain the canals and ditches that provide irrigation water.

4. Treasure Valley CAMP Implementation

Management of the Treasure Valley Aquifer affects numerous stakeholders. Effective implementation of the Plan will require the participation and cooperation of stakeholders and governmental entities with jurisdictional authorities and responsibilities.

The IWRB staff will provide leadership and coordinate activities for the implementation of this plan.

The IWRB may continue to convene the Committee to guide and make recommendations concerning the implementation of management strategies and to review goals and objectives. The Committee could provide a forum for discussing implementation, establishing benchmarks for evaluating the effectiveness of actions, coordinating with water users and managers, evaluating and addressing environmental issues, and identifying and pursuing funding opportunities.

The Committee will continue to include interest groups currently represented and may expand or contract as appropriate to include other interested people, per the IWRB direction. In addition, the IWRB will appoint at least one of its members to serve as a liaison between the Committee and the IWRB. The Committee will serve at the pleasure of the IWRB and provide a forum for public participation. The IWRB staff will facilitate the work of the Committee and provide the technical information needed for its deliberations. The IWRB will make all final decisions concerning Plan project priorities, implementation, and funding.

As various programs are implemented, additional monitoring or modifications will likely be needed. Specific projects may require site-specific measurement and analysis that are not currently available. Additional analysis will likely be required to assist the IWRB and the Committee.

Outreach and Education

During implementation of the Treasure Valley CAMP, the Committee will help develop a plan for broad water education and outreach, building on existing efforts and programs. Emphasis will be placed on education efforts that promote conservation and a reduction in consumptive use.

Funding

Effective implementation of the CAMP actions will require a partnership among the state, local and federal governments, stakeholders, water users, and non-governmental organizations. These partnerships will advance the goals of CAMP because capabilities and resources can be combined to accomplish the shared goals. The costs of implementation are anticipated to be shared among willing partners. As the implementation plan is developed, the funding needs for the Plan components will be evaluated and potential funding sources, including federal grants, will be identified.

The many existing activities for maintaining the health of the Treasure Valley Aquifer reflect the value and importance the aquifer and water resources have to the region. These existing activities are

undertaken by all levels of government. These activities are funded through various sources and through various programs. The IWRB supports existing programs that protect and enhance the water resources of the area. Opportunities to combine resources and leverage existing programs with CAMP implementation will be encouraged and supported.

Additionally, the IWRB has an existing financial program that can provide financial assistance to improve infrastructure for irrigation and community water supplies and for flood control and hydroelectric power. This assistance is provided in the form of loans and IWRB-issued revenue bonds.

Adaptive Management

The goal of adaptive management is to support improved decision making and performance of water management actions over time.

Key principles fundamental to this approach include:

1. Anticipating possible future uncertainties and contingencies during planning
2. Employing science-based approach to build knowledge over time
3. Designing projects that can be adapted to uncertain or changing future conditions

Adaptive management involves taking actions, testing assumptions, and then monitoring and adapting/adjusting the management approach as necessary. It is a way of taking action in a complex system with many variables and constant change.

Developing perfect knowledge concerning any system, including the Treasure Valley Aquifer, is impossible. Therefore, an adaptive management approach is critical to the successful attainment of the qualitative and quantitative goals set forth in the Plan. Successful adaptive management requires patience and long-term commitment, just as acquiring enough data to make decisions about program changes takes time.

The adaptive management strategy will allow the IWRB to:

- Develop protocols for revising management actions;
- Compare costs and impacts of different actions on the Treasure Valley Aquifer;
- Adjust funding allocation between projects to get the most "bang for the buck";
- Concentrate funding on management actions that produce results;
- Make adjustments and revisions to the Plan as new information becomes available or in response to changing water supply and demand needs;
- Proceed with flexibility, depending on results and analysis of monitoring and measurement data.

Coordination and Implementation

Management of the Treasure Valley Aquifer affects numerous stakeholders within Idaho and requires coordination. The Committee will be charged with providing guidance and recommendations concerning the implementation of management strategies. The Committee will provide a forum for discussing implementation, establishing

benchmarks for evaluating the effectiveness of actions, coordinating with water users and managers, evaluating and addressing environmental issues, and identifying and pursuing funding opportunities.

Monitoring and Data Gathering

The Advisory Committee and Board staff will be able to assess the impacts of various management activities using data gathered through the monitoring process. In some cases, it may take a number of years to obtain sufficient data to achieve a comprehensive understanding of the effects of particular actions. Regardless, the success of the plan depends upon the development and maintenance of state-of-the-art monitoring and evaluation tools that provide the information necessary to make sound planning decisions for the future.

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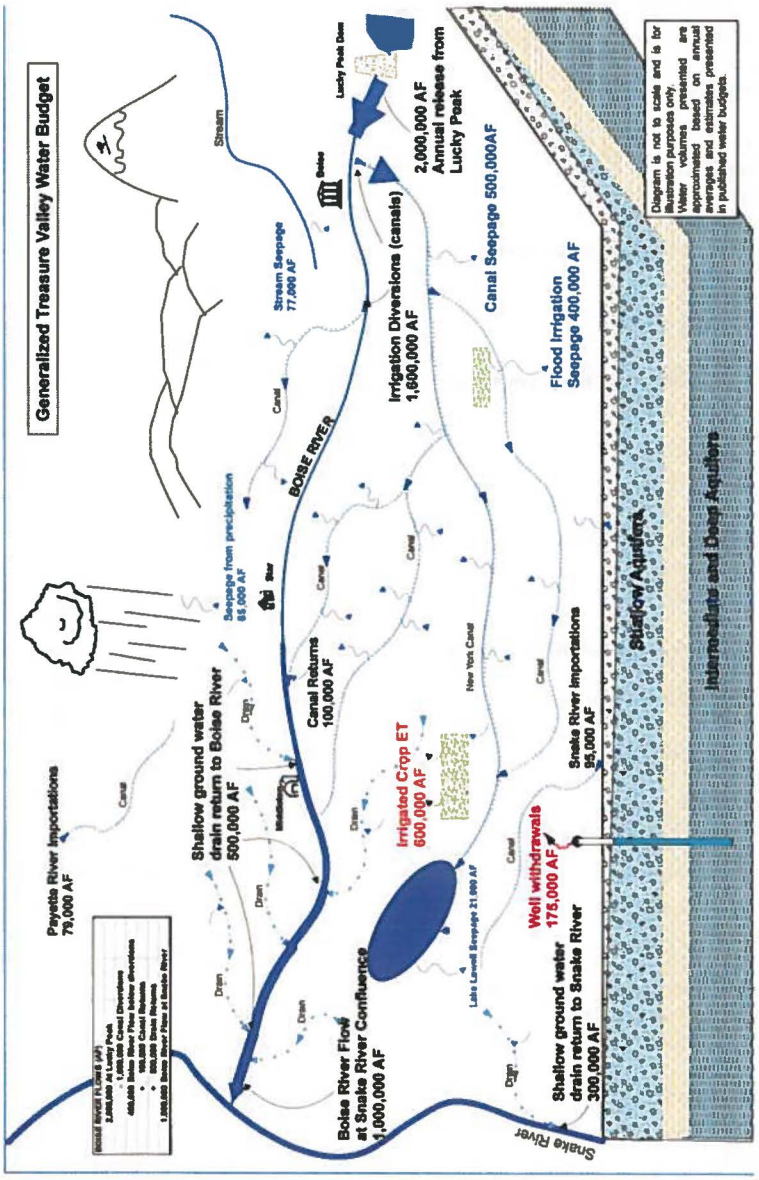
Appendices

Appendix 1. Water Budget Schematic



Appendix 2. Treasure Valley Comprehensive Management Plan Advisory Committee Members and Affiliations

TV CAMP MEMBER*	AFFILIATION
Abramovich, Ron	Natural Resources Conservation Service
Adamson, Brent	Boise County
Amick, Doug	City of Greenleaf
Anderson Jamie	Boise County
Barrie, Rex	Water District #63
Case, Vern	Wilder Irrigation District
Berggren, Ellen	U.S. Army Corps of Engineers
Bowling, Jon	Idaho Power Company
Burnell, Barry	Idaho Department of Environmental Quality
Dane, Russ	Keller Williams Realty
Decker, Kevin	Idaho Wildlife Federation
Deveau, Paul	Boise Project Board of Control
Dixon, Dave	Greenleaf Farms Inc.
Duspiva, Gary	Canyon County Planning and Zoning Commission
Echeita, Mike	City of Eagle
Funkhouser, Allen	Drainage District # 2
Fuss, Michael	Nampa Public Works
Goodson, Stephen	Governor's Office
Howard, Matt	U.S. Bureau of Reclamation
Jones, Chris	Ted Trueblood Chapter, Trout Unlimited
Kennedy, Ben	Micron Technology, Inc.
Larson, Bill	Treasure Valley Partnership
Leatherman, Megan	Ada County
McKee, Lynn	Ada County Soil and Water Conservation District
Nelson, Greg	Idaho Farm Bureau
Patton, Brian	Idaho Department of Water Resources
Peter, Kathy	Unaffiliated
Pline, Clinton	Nampa-Meridian Irrigation District
Prigge, John	Sorrento Lactalis
Rhead, Scott	United Water of Idaho
Ronk, Jayson	Idaho Association of Commerce & Industry
Schmillen, Bob	City of Middleton
Shoemaker, Gary	City of Caldwell
Stewart, Lon	Sierra Club
Stewart, Warren	City of Meridian
Telford, Craig	City of Parma
Thornton, John	North Ada County Technical Working Group
Ward, Rick	Idaho Department of Fish and Game
Woods, Paul	City of Boise
Yerton, Janice	City of Kuna
Zirschky, Mark	Pioneer Irrigation District

*Former members: Gayle Batt, Michelle Atkinson

Appendix 3. Abbreviations and Terms

acre-foot	A volume of water equivalent to one acre covered in water one foot deep. One acre-foot (af) equals 325,851 gallons
aquifer	Any geologic formation that will yield water to a well in sufficient quantities to make the production of water from the formation feasible for beneficial use. ~~A water-bearing layer of rock that will yield water in a usable quantity to a well or spring~~
Bank	Water Supply Bank
CAMP	Comprehensive Aquifer Management Plan
cfs	Cubic feet per second. A rate of flow equal to one cubic foot of water passing a point each second. One cfs equals approximately 7.48 gallons per second or 449 gallons per minute.
Committee	Treasure Valley CAMP Advisory Committee
consumptive use	Consumptive use is water that is actually consumed and not returned to the immediate water environment. It is the portion of water that evaporates, is used in products or crops, or consumed by humans or livestock.
DCMI	Domestic, Commercial, Municipal, and Industrial
GWMA	Ground Water Management Area
IDP	Idaho Drought Plan
KAF	Thousand acre-feet
kW	Kilowatt, one thousand Watts of electric power
MAF	Million acre-feet
Plan	Treasure Valley Comprehensive Aquifer Management Plan
Rental Pool	Water District #63 Rental Pool
SRBA	Snake River Basin Adjudication
TVAS	Treasure Valley Aquifer System

Appendix 4. Key Agencies/Entities

BPBC	Boise Project Board of Control
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
IWRB	Idaho Water Resource Board
NRCS	Natural Resources Conservation Service
USACE	U.S. Army Corps of Engineers
USBOR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
WRIME	Water Resources & Information Management Engineering, Inc.

Appendix 5. Resource Directory

For more information about the Comprehensive Aquifer Management Planning Program:
http://www.idwr.idaho.gov/waterboard/WaterPlanning/CAMP/CAMP.htm

For information about the Idaho Water Resource Board:
http://www.idwr.idaho.gov/waterboard/

For information about the Idaho Department of Water Resources:
http://www.idwr.idaho.gov/

For additional information on Water District #63:
http://www.idwr.idaho.gov/WaterManagement/waterDistricts/BoiseRiver/default.htm

For information on the Water Supply Bank and Water District #63 Rental Pool:
http://www.idwr.idaho.gov/WaterManagement/WaterRights/WaterSupply/ws_default.htm

For additional information on the Boise Project Board of Control:
http://www.boiseproject.org/
http://www.usbr.gov/projects/Project.jsp?proj_Name=Boise+Project

For information on the Treasure Valley Hydrologic Project:
http://www.idwr.idaho.gov/WaterInformation/projects/tvhp-revised/

For additional USGS water data:
http://id.water.usgs.gov/water_data/

For additional information on ground water levels in the Treasure Valley:
Public access to ground-water measurement data is available at Hydro.Online or by contacting IDWR staff

For additional information on hydropower production in the region:
http://www.idahopower.com/AboutUs/OurPowerPlants/Hydroelectric/hydroelectric.cfm

For additional information on water quality, see the Idaho Department of Environmental Quality:
http://www.deq.idaho.gov/

For more information on the Idaho Snow Survey Program, see the Natural Resource Conservation Service:
http://www.id.nrcs.usda.gov/

For more information on Bureau of Reclamation activities in the region:
http://www.usbr.gov/pn/

For more information on US Army Core of Engineers activities in the region:
http://www.nww.usace.army.mil/boise/outreach.html

Appendix 6. References and Information Sources

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RESPONSE TO COMMENTS ON DRAFT 2012 IDAHO STATE WATER PLAN

Policy 4. General Comments

1. Three comments favored Policy 4 as drafted and one comment suggested the policy should be shortened. Fremont –Madison Irrigation District (8/16/12); Jerry Rigby on behalf of upper Snake River canal companies (8/16/12); and Idaho Ground Water Appropriators (9/20/12)("The explanatory materials contained in policies 4A, 4B, and 4C are an important addition to the Plan that should help ensure that such disputes are not repeated"). North Side Canal Co., et. al (9/21/12) commented that the "policies have unnecessary and unduly long discussions of disputed factual situations . . . . These historical recitations are out of character with the rest of the plan, and misplaced in this section of the Plan as well."

RESPONSE: The Snake River policies return to the format of the 1976 State Water Plan, which contained detailed explanatory information for each policy. Overtime, the explanatory information for the Snake River policies was reduced. The removal of the explanatory information has led to misinterpretation of the policies and litigation. By restoring the explanatory information, current and future readers will have a common frame of reference for interpretation of the Snake River policies. The 2012 Snake River policies, however, have been edited to streamline and clarify the source of the explanatory information.

2. Six comments stated that the Snake River policies should be broadened to consider significant tributaries to the Snake River. Idaho Rivers United (9/21/12); Greater Yellowstone Coalition (9/13/12); Idaho Conservation League (9/21/12); Friends of the Teton River (9/21/12); Trout Unlimited, (9/21/12), and Angela Rossman 9/21/12.

RESPONSE: Expanding Part A Snake River policies to address upper Snake River tributary streams would be in consistent with Idaho Code § 42-1734A. Idaho Code § 42-1734A provides that Part A of the State Water Plan shall consist of "statewide policies, goals and objectives." The Snake River policies have traditionally been viewed as statewide policies, goals and objectives because 87% of the State of Idaho is within the Snake River drainage basin. These policies have been part of every State Water Plan.

Section 42-1734A provides that individual river basin plans are to be addressed in Part B of the State Water Plan. The Board has developed Part B Plans for the following tributaries to the Snake River: Henrys Fork Basin Plan (1992); South Fork Snake River Basin Plan (1996); Snake River Milner Dam to King Hill Plan (1993); Upper Boise River Basin Plan (1992); South Fork Boise River Plan (1996); and Payette River Basin Plan (1999). Thus, rather than expand Part A of the State Water Plan, development of additional tributary plans should be addressed through a petition to the Board to undertake development of a Part B Plan for the tributaries of concern.

3. North Side Canal Co., et. al (8/30/12) testified that the proposed Snake River policy is inconsistent with the Part B Comprehensive Basin Plan for the Snake River between Milner and King Hill.

RESPONSE: The Part B Snake River Basin Plan for Milner Dam to King Hill does not conflict with the proposed revisions to the Snake River policies. While the Part B Plan recommends a "long-term goal [of working] toward higher river flows during the summer months" in the Milner to King Hill reach of the Snake River, Id. at 74, the Plan recognizes that: "The Snake River Basin is divided administratively at Milner Dam. Senate Bill 1358 amended Idaho Code (1986) to provide that no water above Milner Dam shall be considered in the determination and administration of rights downstream from Milner Dam." *Id.* at 22. Part B also states that "A minimum flow of zero is specified for the Snake River at Milner Dam in the State Water Plan." *Id.* at 24. The 1996 State Water Plan reconfirmed these statements.

4. North Side Canal Co., et. al (9/21/12) requested that the last sentence in paragraph 2 of the Introduction be amended to read "When conflicts arise between competing interests - and with water resources in the arid American West, as they inevitably do - the laws of the State of Idaho and the policies in this Plan establish the blueprint for allocation of unappropriated waters of the Snake River."

RESPONSE: The referenced sentence has been modified.

Policy 4A. Snake River Minimum Stream Flows

1. North Side Canal Co., et. al (9/21/12) commented that the minimum stream flows do not guide 'overall' water planning and management in the Snake River Basin. "Throughout the historical discussion of the Board's Milner, Murphy and Weiser gages flows they are referred to as 'minimum average daily flows,' except that the heading calls them minimum stream flows. Those two things are not alike. Also, the representation that these designated flows 'establish a framework for planning and management in the Snake River Basin' should be reviewed in light of the Supreme Court's *Clear Springs* opinion issued in March 2011."

RESPONSE: The 1976 State Water Plan expressly states "[w]ithin the above **management framework**, each future use of water can be considered." 1976 State Water Plan at 117 (emphasis added). Thus, the Milner, Murphy and Weiser minimum average daily flows were viewed as creating a management framework for the main stem of the Snake River.

While the 1976 State Water Plan described the Milner, Murphy and Weiser flows as average daily flows, subsequent state water plans and the Idaho Supreme Court have uniformly recognized these average minimum daily flows as "minimum flows" or "minimum stream flows." The 1976, 1992 and 1996 State Water Plans refer to Milner, Murphy and Weiser as "**minimum flows**." In *Clear Springs Foods, Inc. v. Spackman*, the Idaho Supreme Court stated the Idaho Water Resource Board "established **minimum flows** at three points along the Snake River" when it adopted the 1976 State Water Plan. 150 Idaho790, 798 (2011) (emphasis added). The *Clear Springs* court based its statement on *Idaho Power Co. v. Department of Water Resources,* which found that the 1976 State Water Plan "established as a beneficial use **minimum stream flows** at various points along the Snake River. 104 Idaho 575, 590 (1983). Similarly, the Idaho Supreme Court in *Idaho Power Company v. Idaho Water Resource Board*, described the Murphy average daily flow as a "**minimum stream flow**." 104 Idaho 570, 574 (1983). Finally, with the exception of the Milner zero minimum

stream flow which is in litigation, the SRBA has issued partial decrees for all of the Snake River minimum average daily flows identified in the policy. *See*, e.g., Partial Decree 02-00201.

The Milner, Murphy and Weiser minimum stream flow were established through the adoption of the 1976 Idaho State Water Plan. Thus, the 1976 State Water Plan defines the purpose of these minimum stream flows, not Chapter 15, Title 42, Idaho Code.

Use of the term "minimum average daily flow" is appropriate because it describes the quantity of the minimum stream flow.

2. North Side Canal Co., et. al (9/21/12) state that "The history of Milner Dam and the 'two river' concept is oversimplified and incorrect. Certain hydropower water rights above Milner Dam have not been subordinated as the Board suggests, at various times in history, or now (i.e., City of Idaho Falls power plants, Minidoka power plant). These concerns also apply to section 4B related to the Snake River Minimum Flow."

RESPONSE: Additional text has been added to show the source of the historical background for each of the minimum stream flows. Nothing in the text of the policy states that all hydropower water rights above Milner have been subordinated. Rather, Policy 4A documents as the Idaho Supreme Court noted in *Clear Springs Foods, Inc.*, that the IWRB "established a zero minimum flow at Milner Dam ... to maximize the amount of water available for development above the dam." 150 Idaho at 799.

3. North Side Canal Co., et. al (9/21/12) state that "In the implementation strategies, strategy 2, there needs to be a determination of whether the Snake River has been fully appropriated before any discussion of new appropriations should be addressed."

RESPONSE: Existing hydrologic records show there are unappropriated flows in the Snake River above Milner Dam and that trust water is available for appropriation in the Milner to Murphy reach of the Snake River; therefore, no basis exists for stating that the Snake River is "fully appropriated." Policy 4A and Policy 4B, however, acknowledge the high demand for water from the main stem of the Snake River, and thus, the need for enhanced water management.

4. Friends of the Teton River (9/21/12) state that policies 4A and 4J, "only portrays part of the story relative to minimum stream flows in the Snake River Basin. The minimum stream flows set forth on page 41 of the SWP certainly dictate certain water policy and management actions which are critical to satisfying future water demand. However, there are several other minimum stream flow reaches on tributaries to the Snake River which are critically integrated into water policy and management decisions in those sub-basins (some of which are discussed on pages 61-63 of the SWP). . . . FTR suggests that a . . . policy be integrated into section 4, such that the implementation strategies and milestones call for the evaluation and establishment of additional minimum stream flow rights in the Snake River Basin, where appropriate."

RESPONSE: Part A of the State Water Plan sets forth state wide policies. The Snake River main stem minimum flows establish a management framework for the Snake River as a whole. Nothing in Part A is intended to diminish the importance of existing tributary minimum stream flows or preclude establishing additional tributary minimum stream flows. Changes to Policy 4J are proposed to address this comment.

Policy 4B. Snake River Milner Zero Minimum Flow

1. North Side Canal Co., et. al (9/21/12) state: "There is an ongoing SRBA subcase to determine the effect of the water board's Milner Zero minimum average daily flow, and whether that policy was properly transformed into a minimum stream flow water right. This case has not yet been resolved."

RESPONSE: The challenge to the Board's Milner zero minimum stream flow water right claim does not undermine Policy4B. Policy 4B is based upon Idaho Code § 42-203B(2). The SRBA Special Master's recommendation of a Milner zero flow general provision in the Final SRBA Decree is not being challenged.

2. North Side Canal Co., et. al (9/21/12) recommend the Board "clarify that the development of new "in-stream and off-stream storage projects above Milner Dam" is subject to existing water rights and cannot in any way affect existing storage reservoir operations."

RESPONSE: The State Water Plan's recommendation for new in-stream and off-stream storage does not have any effect on existing water rights and storage reservoir operations. Under the prior appropriation doctrine the water rights for new storage projects will be junior to all existing water rights. Storage reservoir operations are dictated by the storage water right and storage space holder contracts.

3. Trout Unlimited (9/21/12) states: "This policy appears to overstate the reach of the Milner Dam zero minimum stream flow policy. If 'full development of the Snake River' above Milner Dam means storing every drop out of the Henrys Fork, the Teton River, the South Fork of the Snake, from the Blackfoot reach of the Snake River, from the Blackfoot River, or from the Portneuf River, very few citizens of Idaho would support it. The policy should say, at most, that the impacts of new developments on the flow at Milner Dam should not be considered in determining whether those developments should be constructed." Similarly, Western Watersheds Project (9/21/12) states: "[T]imes have changed and the creation of the two rivers policy by the adoption of the zero minimum flow at Milner needs to be modified to reflect values that have been dismissed for almost 100 years."

RESPONSE: The Milner Policy is codified as Idaho Code § 42-203B(2). The policy as drafted does not mandate flows at Milner be reduced to zero, nor does it determine the extent or location of new storage to be developed; rather, Policy 4B simply recognizes the flow of the Snake River may be reduced to zero. The actual flows at Milner in the future will be determined in accordance with state law. Changes to clarify and shorten Policy 4B are proposed.

Policy 4C. Reallocation of Snake River Trust Water

1. North Side Canal Co., et. al (9/21/12) stated: "[T]his policy places too much emphasis on additional uses without more emphasis being placed on the potential of the system being fully appropriated. They also suggested that the implementation strategy 2 and the corresponding milestone is already required by Idaho law."

RESPONSE: The policy as drafted while identifying the opportunity for additional development of trust water, also identifies limiting factors on such development. Strategy 2 proposes development of a plan to ensure that future trust water development is consistent with meeting the Murphy minimum stream flows. Changes are proposed to Policy 4C to further clarify the operation of the trust.

Policy 4D. Conjunctive Management of ESPA and Snake River

1. Idaho Ground Water Appropriators (9/20/12) recommend that the first three paragraphs in the discussion of Policy 4D be revised. They state that the paragraphs as drafted "are misleading because they fail to acknowledge spring flows increased dramatically during the first half of the 20th century and still remain above historic levels."

RESPONSE: The first three paragraphs have been revised to provide a more detailed description of the development of the ESPA.

2. Idaho Ground Water Appropriators (9/20/12) suggest that the fourth bullet in Policy 4D calling for revision of the Snake River: Milner Dam to King Hill Part B Comprehensive State Water Plan should be deleted or explained.

RESPONSE: The Part B Snake River: Milner to King Hill implementation strategy has been clarified. Since the adoption of the Part B Plan on December 10, 1993, significant litigation related to the Swan Falls Settlement and conjunctive administration of surface and ground water has occurred and the ESPA CAMP has been adopted. These developments need to be reflected in the Part B Plan.

3. North Side Canal Co., et. al (9/21/12) request that Policy 4D include a textual disclaimer that it does not affect or interfere with water right administration. They also state that the discussion needs to be expanded to consider conjunctive management ground and surface water above Milner Dam. North Side Canal Co., et. al further state that "adaptive management triggers" need to be reviewed to ensure they 'don't conflict with the already existing law in Idaho concerning conjunctive administration." Additionally as to the implementation strategies, North Side Canal Co., et. al suggest "a strategy should be adopted to confirm that the predicted benefits of aquifer recharge are actually realized prior to implementing actions to conduct more recharge. As to strategy 3, the Commenters suggest that a working group, like that contemplated in policy 4B to monitor water management operations be formed." As to the milestones, North Side Canal Co., et. al request a study to confirm benefits of recharge. Clear Springs (9/10/12) submitted additional comments requesting the ESPA CAMP hydrologic conjunctive management targets be identified in the state water plan. Clear Springs also suggests that the plan include specific aquifer recovery targets with a timeline for implementation of specific actions.

RESPONSE: A textual disclaimer was added to Policy 1E that the state water plan conjunctive management policies are not a substitute for conjunctive administration. Policy 4D addresses the unique conjunctive management issues related to the Milner zero flow policy. Conjunctive management of the ESPA as a whole is addressed in the ESPA CAMP. The adaptive management triggers have yet to be developed; however, North Side et. al correctly note that these triggers must be developed consistent with state law. An implementation strategy calling for the creation of a working group to assist in the development of the spring monitoring program has been added to

Policy 4D. The ESPA goals are stated in Policy 4D either directly or through incorporation by reference. The need for additional aquifer recovery targets and timelines should be addressed as part of review of the Part B Plan Comprehensive Plan for the Snake River: Milner Dam to King Hill.

4. Idaho Rivers United (9/21/12) recommended that policies be developed to enhance natural recharge in watersheds like the Wood, Lost, Birch Creek and Medicine Lodge Creek, which would benefit down basin users and ESPA recharge.

RESPONSE: Part A of the state water plan sets forth basin-wide policies. Specific policies related to recharge in tributary basins should be addressed through a Part B comprehensive state plan or the ESPA CAMP implementation process.

Policy 4E. Snake River Basin New Storage

1. Idaho Ground Water Appropriators (9/21/12) submitted comments supporting this policy.

RESPONSE: No response is required to the Idaho Ground Water Appropriators comments on Policy 4E.

2. Trout Unlimited (9/21/12) and Friends of the Teton River (9/21/12) expressed concern that Policy 4E is too broad. Trout Unlimited suggested that at a minimum the policy should recognize that "new storage must be cost effective, including consideration of costs to the environment." Trout Unlimited also suggested that new water supply projects be developed through a transparent "collaborative process that look[s] in the first instance at all possible water supply options, including non-structural solutions such as water markets and reducing demand." Friends of the Teton River voiced similar concerns and suggested the Milestones be revised to provide for the removal of fatally flawed projects.

RESPONSE: The surface storage implementation strategies and milestones have been revised to address the concerns expressed.

3. North Side Canal Co., et. al (9/21/12) recommend the Board adopt a priority for use of new storage to supplement existing irrigation demands. They also requested that "aquifer management goals" be defined.

RESPONSE: Policy 4E is a statewide storage policy. The use for new storage will be dictated by the feasibility analysis for each project. The aquifer recharge goal implementation strategies and milestones have been revised to reflect the ESPA management goal.

Policy 4F. Snake River Basin Agriculture

North Side Canal Co., et. al (9/21/12) state that Policy 4F "needs to be revised so that it recognizes that development of supplemental water supplies to sustain existing uses is not exclusive to agriculture...." They also request a more explicit definition of what is meant by the term "remaining unappropriated flows."

RESPONSE: Policy 4F while directed at agricultural development acknowledges the need for supplemental water supplies is not limited to agriculture. The need for water supplies for DCMI is addressed in Policy 4G. The term "unappropriated flows" refers to natural flow of the Snake River in excess of the demand under all existing water rights.

POLICY 4G. Snake River DCMI

Angela Rossman (9/21/12) requests that the implementing strategies include environmental impacts and promote efficient water use.

RESPONSE: Policy 4G includes a recognition of the need for promoting water conservation. Environmental impacts of water projects are considered as part of the water permitting process.

Policy 4H. Snake River Hydropower Use

No comments were received on this policy.

Policy 4I. Snake River Navigation

No comments were received on this policy; however, some streamlining edits are proposed to this policy.

Policy 4J. Snake River Fish, Wildlife, Recreation and Scenic Resources

1. Idaho Conservation League (9/21/12) commented that fish, wildlife, recreation, and scenic resources should be afforded the same protections as other beneficial uses of water. "Section 4J demeans the future potential economic contribution that fishing, tourism and recreation bring to the State." Trout Unlimited (9/21/12) similarly suggests Policy 4J "overstates the adequacy and reach of the Snake River minimum flows set forth in Policy 4A. . . . To this end the first bulleted milestone should be amended to include '[m]inimum stream flows maintained and collaboratively established.'"

RESPONSE: Policy 4J is proposed for the purpose of restoring recognition to the need to provide for fish, wildlife, recreation and scenic uses. Policy 4J has been modified to clarify that the main stem of the Snake River minimum stream flows do not preclude establishment of tributary minimum stream flows. This section also recognizes other collaborative agreements that provide benefits for fish and wildlife.

2. Owyhee Initiative (9/21/12) strongly supported inclusion of the Owyhee Initiative section in the final State Water Plan.

RESPONSE: No response is required.

3. Idaho Rivers United 9/21/12 states that the "Snake River Flow Augmentation language is divisive" and that "the state should support its agreements."

RESPONSE: The inclusion of the flow augmentation in the state water plan is an acknowledgement that the 2004 Snake River Water Rights Agreement is in the public interest and will be implemented by the State of Idaho.

4. Idaho Fish and Game (9/19/12) recommends that the sentence in the discussion regarding the benefit of flow augmentation be modified to read "*because of the uncertainty regarding specific benefits to ESA-listed fish.* "

RESPONSE: The sentence has been modified as proposed.

5. North Side Canal Co., et. al (9/21/12) recommends combining Policy 4J with Policy 4A.

RESPONSE: Policy 4J gives recognition to the importance of fish, wildlife, recreation and scenic values throughout the Snake River Basin. Policy 4A, as discussed above, serves a specific purpose of protecting base flows in the main stem of the Snake River. Policy 4J recognizes additional minimum stream flows have been established and may need to be established to protect tributary flows for instream uses.

Basin Section Comments and Responses
Prepared by Helen Harrington, IDWR Planning Section

5A. Bear River Compact

No comments were received about this policy.

5B. Bear River Basin Water Management

Summary: Three comments were received suggesting that the Plan should discuss the 2002 Bear River Hydropower Settlement Agreement and the environmental issues associated with it. (Greater Yellowstone Coalition, 9/13/2012; Idaho Conservation League, 9/21/2012; Angela Rossman, 9/21/2012

Response: Policy 5D includes a discussion of the 2002 Settlement Agreement, the ECC, and the focus on restoration of Bonneville Cutthroat Trout.

5C. Interstate Water Delivery

No comments were received about this policy.

5D. Bear Lake

No comments were received about this policy.

6. SALMON / CLEARWATER RIVER BASINS

6A. Conservation Plans

Summary: Three comments were received about this policy. Comments were generally supportive of this policy. (1) One comment suggested that the Plan should define strategies and set target dates for minimum stream flows listed in the Water Rights agreement of 2004. (2) One comment was supportive of SWP's discussion of strategies for protecting species, along with agricultural and tourism economies. (3) One comment suggested addition of implementation strategy addressing coordination with Soil & Water Conservation Commission. (Idaho Soil and Water Conservation Commission, 9/19/2012; Idaho Rivers United, 9/21/2012)

Response: (1) Strategies for achieving minimum stream flows continue to evolve as funding becomes available and state and federal agencies, local water users, local units of government prioritize stream and river reaches critical to the conservation of ESA-listed species. (2) No response. (3) The Board acknowledges the importance of the ISWCC and local conservation districts in the development and implementation of habitat conservation projects and plans. Due to the numerous entities participating in planning and project implementation in the Salmon and Clearwater basins, the strategies address activities specifically related to the Board and IDWR and focus on local problem solving and support.

6B. Instream Flow Program

Summary: Comments focused on need for conjunctive administration and water management in the Lemhi basin; voluntary solutions for instream flows; the need for storage in the Lemhi drainage with irrigation benefits as well as fish benefits and impact locally of 24 listed streams in basins with private ownership. Comments also mentioned concerns about groundwater and decreasing recharge; importance of agriculture in the basin; and interpretation of public interest with respect to water appropriation and regulations not going through the legislative process. (Blair Kauer, 8/13/12; Kim Thomas, 8/13/12; Kurt Bird, 8/13/12; James Whittaker, 8/16/12)

Response:
Conjunctive and water management issues are discussed in Policies 1E. Evaluation of new storage will be considered as a state-wide issue as described in Policy 1L. The application of public interest criteria to water right applications is under the authority of the Director.

7. PANHANDLE RIVER BASINS

7A. Interstate Aquifers

Summary: Comments were received discussing the importance of the water resources in the Panhandle basins, importance of aquatic and wildlife habitat, water quality and instream flow related to economic stability and the need to protect the flows and implement planning and concerns about over allocation and increasing pressure for water from out-of-state interests (Idaho Conservation League, 9/12/2012; Buddy Paul 9/21/12; Pend Oreille Basin Commission, 9/21/2012). A comment suggested changing the term "abundant" to stable or other term. A comment suggested revising the anticipated completion date of the Coeur d'Alene-Spokane River Basin Adjudication (Alan Miller, 9/21/2012)

Response: The Proposed Plan emphasizes these issues. The term "abundant" has been revised to stable. Estimated completion date of the Coeur d'Alene-Spokane River Basin Adjudication has been revised to Fiscal Year 2018.

7B. Minimum Stream Flows

Summary: Comments were generally supportive of the focus of the policy and supported the existence of minimum stream and lake levels and the aspiration to establish additional levels; One comment appreciated the recognition of the Pend Oreille Basin Commission and desire to work with the IDWR. A comment expressed hope that the state is encouraging conservation in both Idaho and Washington and that recharge from Lake Pend Oreille be a last resort. A comment supported the importance of hydropower but that caution should be used in expanding hydropower and that it would be valued equally with stable and dependable water levels and impacts on aquatic ecosystem in the Pend Oreille Basin (Pend Oreille Basin Commission, 9/12/2012). One comment discussed the dependence of the regional economy on healthy lakes

and rivers and recognized the existing minimum lake level and stream flows, as well as supporting the Implementation Strategies and Milestones to potentially establish additional rights (Idaho Conservation League, 9/12/2012).

Response: The Proposed Plan emphasizes theses concepts. Policy 1N discusses the need to balance hydropower with protection of environmental values.

7C. Navigation, Fisheries, and Recreation

Summary: Two comments were received on this policy. One comment advocated providing financial support for the Lakes Commission. (Idaho Conservation League, 9/12/2012).

Response: Funding support would be determined through legislative appropriation.

Another comment suggested that. the "establishment and use of local water supply banks and rental pools should be considered as a strategy for addressing the need for meeting minimum stream flow water rights or new rights in the Panhandle region, including minimum lake levels for the protection of navigation and transportation, fish and aquatic resources and aesthetic and recreational values." Comment expressed concern about the use of water supply banks and rental pools' and potential flooding issues if implemented on many portions of the S1. Maries, S1. Joe and Coeur d' Alene Rivers. (Benewah Co. 9/9/12)

Response: Policy 1I has been revised to make clear that aquifer recharge projects should be basin-specific to address the unique hydrologic conditions that occur in specific regions.

4. SNAKE RIVER BASIN

The Snake River was ~~accurately~~ described in the 1960s as "A Working River" by Senator (and former Idaho Governor) Len B. Jordan. This description accurately portrays the development of the river since the earliest settlement and irrigation of the semiarid lands of southern Idaho.

~~As a "Working River" t~~The Snake River has had – and continues to have – many competing demands for its water that affect the management of the river, among them: irrigation, hydroelectricity, municipal supply, flood control, recreation, fish, and wildlife management. Multiple governmental agencies~~interests~~ regulate activities that affect the use of the waters of the Snake River, among them: the Idaho Water Resource Board (water policy), Idaho Department of Water Resources (water administration), U.S. Bureau of Reclamation (irrigation, water storage, and hydroelectricity), U.S. Army Corps of Engineers (flood control), National Marine~~Oceanographic and Atmospheric Administration~~ Fisheries Service (anadromous fisheries Management), U.S. Fish and Wildlife Service (resident fisheries), Bonneville Power Administration (federal power), and the Federal Energy Regulatory Commission (hydropower). The Snake River policies in this Plan provide essential ~~policy~~ guidance for the management of the Snake River in the public interest. When ~~conflicts arise between~~ competing demands for Idaho's unappropriated water resources arise,~~interests, and with water resources in the arid American West, as they inevitably do~~ the laws of the State of Idaho and the policies in this Plan establish the blueprint for management of the resource.~~for allocation of unappropriated waters of the Snake River~~.

This plan sets forth ten ~~policies for the~~ Snake River Basin policies. Policy 4A describes the minimum stream flow management framework that provides for the optimum development of the water resources ~~guides overall water planning and management in~~ of the Snake River Basin. Policy 4B reaffirms the Milner Zero minimum average daily f~~F~~low policy that guides the optimum development of unappropriated flows ~~water resource planning and management in~~ of the Snake River Basin above Milner Dam. Policy 4C addresses reallocation of Snake River trust water ~~describes the trust created by the Swan Falls Settlement that guides water resource planning and development~~ in the Milner to Murphy reach of the Snake River Basin. Policy 4D addresses ~~establishes a process for~~ conjunctive management of the Eastern Snake Plain Aquifer and the Snake River. Policy 4E addresses~~identifies~~ the need ~~and process~~ for ~~developing new~~ development of storage ~~with~~in the Snake River Basin. Finally, Policies 4F through 4J set forth ~~additional~~ policies ~~applicable to water supplies~~ for agriculture, DCMI (domestic, commercial, municipal and industrial), hydropower, navigation, fish, wildlife, recreation, and scenic values.

4A - SNAKE RIVER MINIMUM STREAM FLOWS

The main stem Snake River above Hells Canyon Dam will be managed to meet or exceed the following minimum average daily flows at the designated stream gaging stations:

Gaging Station	Minimum Average Daily Flow
Milner	0 cfs
Murphy	3,900 cfs (4/1 through 10/31) 5,600 cfs(11/1 through 3/31)
Weiser	4,750 cfs
Johnson Bar	5,000 cfs
Lime Point	13,000 cfs

These minimum stream flows provide the management framework for ~~water planning and management~~the optimum development of water resources of ~~in~~ the Snake River Basin. ~~and~~ The minimum stream flows shall be administered in priority with other water rights under the prior appropriation doctrine.

Discussion:

Approximately 57%[1] of the surface area of the State of Idaho is within the Snake River Basin. Although t~~T~~he ~~waters of the~~ Snake River Basin represents 50% of the water resources of the State, it is the ~~but represent the~~ water supply for 76% of Idaho's population. Thus, the Snake River Basin ~~form~~is the backbone of Idaho's economy., ~~and e~~ Effective management of this resource is essential to protecting existing water rights, supporting agriculture, sustaining economic growth, maintaining ~~a~~ base flows for hydropower generation, and preserving fish, wildlife, and other environmental values.

The Milner, Murphy and Weiser~~Snake River~~ minimum stream flows have been an integral part of the State Water Plan since their adoption in 1976. They ~~were~~ established ~~to provide the framework for achieving~~ a balance between diversion of water for consumptive uses and preservation of Snake River flows for instream uses. The Johnson Bar and Lime Point minimum flows were added in 1978 and 1985, respectively, to address navigational concerns below the Hells Canyon Complex (HCC).

The ~~policy of managing the Snake River to meet or exceed these designated~~ Snake River minimum stream flow policys evolved over the course of the 20th Century ~~as a result of the need to~~ in connection with efforts to reconcile the conflict between irrigation, which requires diverting water out of the stream, and hydropower, which relies on retaining water in the stream. A brief overview of the evolution of the Snake River minimum stream flow framework is provided ~~to give~~as context for the Snake River policies that follow.

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[1] The Salmon and Clearwater Basins are not included in this calculation because they are treated as separate basins for purposes of the State Water Plan.

The inherent~~dynamic~~ tension between diversion of water for consumptive uses and retention of flows for instream uses became apparent ~~manifested itself~~ with~~during~~ the simultaneous development of the irrigable lands within the Snake River Basin and the development of the hydropower potential of the main stem Snake River. ~~-~~The inevitable conflict between these two uses was recognized as early as the 1889 Constitutional Convention, and the tension continued through the 20th Century.

The initial effort to create a balance between ~~hydropower and~~ irrigation and hydropower development arose out of a 1920 plan prepared by the Board of Engineers "for the development of the remaining resources of the Snake River water supply on a broad and comprehensive basis which would insure to the state the maximum utility of the possibilities of the stream." Report of Board of Engineers (Dated April 10, 1920). ~~construction of the American Falls Reservoir~~. The Board of Engineers consisted of the State Commissioner of Reclamation and engineers representing the U.S. Reclamation Service and private irrigation interests. The plan was based on the physical division of the Snake River Basin at Milner Dam. Upstream from ~~the~~ Milner Dam the Snake River is not deeply entrenched, but below the dam the river enters a deep canyon. This physical characteristic of the Snake River led the Board of Engineers to propose that the Snake River above Milner Dam be dedicated to irrigation because of the ease of diverting the flow through gravity irrigation. The Board of Engineers proposed that the main stem Snake River below Milner Dam should be devoted to hydropower because the flow of the river~~ which facilitated gravity water diversions into canal systems. Below Milner Dam, the Snake River enters a deep canyon and~~ was largely inaccessible for agricultural development at that time~~in the 1920s., although a number of sites in the canyon were well suited for hydropower development. Based upon this physical divide, the Board of Engineers, which consisted of the State Engineer, U.S. Reclamation Service and irrigation interests, agreed to a concept that called for dedicating the entire flow of the Snake River above Milner Dam for future agricultural development.~~

The Board of Engineers' plan proposed the construction of storage capacity, to the extent economically feasible, to capture flows above Milner Dam for existing and future agricultural development. Because~~The Board of Engineers recognized, however, that~~ it would take a number of years to ~~fully~~ develop the water supply above Milner Dam for agricultural purposes~~ and that the establishment of unlimited hydropower water rights in the meantime could frustrate the plan. Thus~~, the Board of Engineers' report recommended ~~that future~~ hydropower water rights be conditioned to prevent them from ~~precluding~~ interfering with future upstream~~storage and agricultural~~ development~~ of the flows of the Snake River above Milner Dam~~. This limitation on ~~the ability of~~ hydropower water ~~right holders to establish~~ rights ~~to water above Milner Dam~~ was integral to the Board of Engineers' plan for the "maximum utility" and "greatest use" of the water resources of the Snake River. The Board of Engineers' ~~plan was~~ viewed the plan as not greatly impacting hydropower development because the Snake River soon reconstituted itself downstream from Milner Dam from irrigation return flows, tributary springs, and surface water sources.

The physical differences in the reaches above and below Milner Dam, and the corresponding differences in ~~the~~ existing and anticipated~~planned for~~ development above and below Milner Dam, evolved over time ~~led~~ to the commonly-held view of the Snake as consisting of "two rivers." The "two rivers" concept, recognizes that separating water administration at Milner

Dam and precluding downstream calls for the water above Milner, the optimum development of the water supply above Milner Dam can be achieved. The "two rivers" concept ~~and its policy against allowing water to be called from above Milner Dam to satisfy downstream uses, was~~ has been repeatedly reaffirmed as part of every major Snake River water project and resolution of every major water controversy ~~in every major Snake River water project and controversy in subsequent years~~. For ~~instance~~example, ~~concern that development of the hydropower potential in Hells Canyon might monopolize the flows of the Snake River upstream led to an agreement between the State of Idaho and~~ Idaho Power ~~Company in the 1950's that subordinated hydropower generation at the~~ Company's ~~Hells Canyon Complex (~~"HCC"~~)~~ water rights were subordinated to upstream consumptive uses, consistent with the "two rivers" concept.

The "two rivers" concept was formally recognized in the 1976 State Water Plan, which set a "protected flow" of zero cfs at the Milner U.S.G.S. Ggaging Sstation. The purpose for ~~allowing~~ establishing a- zero flow at Milner Dam was to allow for existing uses to be continued and for some new uses to be developed. ~~maximize the water supply available for development above the dam, including ground water development of the Eastern Snake Plain Aquifer, by allowing existing uses to continue, and by providing water for new uses above the dam~~. The ~~Idaho Water Resource Board (IWRB) recognized, however,~~ 1986 State Water Plan, however, recognized that the Milner zero minimum average daily flow ~~policy~~ meant "that river flows downstream from that point to Swan Falls Dam may consist almost entirely of ground-water discharge during portions of low-water years." The 1992 State Water Plan further clarified that the Milner zero minimum stream flow "is~~wa~~s not a target or goal to be achieved, and may not ~~nor was a zero cfs flow~~ necessarily be desirable." The 1996 State Water Plan was amended by the Idaho Legislature to provide that ~~Rather, the Milner zero minimum flow recognizes that~~ "the exercise of water rights above Milner Dam has ~~in the past~~, and may ~~in the future,~~ reduce ~~the~~ flow at~~of~~ the ~~Snake River at Milner D~~dam to zero." ~~This concept is codified in Idaho Code § 42-203B(2).~~

~~To establish a balance between instream flow uses and consumptive uses of the flows of the main stem Snake River below Milner Dam, T~~the 1976 State Water Plan ~~also~~ established minimum average daily flows[2] at the ~~Milner,~~ Murphy gage of 3,300 cfs, and the Weiser gage of 4,750 cfs "to maintain water for production of hydropower and other main stem uses.". ~~uging stations. In the 1976 State Water Plan, "[t]he Idaho Water Resource Board concluded, after considering all current and potential uses of water on the main stem Snake River, that depletion of flows below that currently available in the low flow months to maintain water for production of hydropower and other main stem water uses [was] not in the public interest."~~

~~While the 1976 Idaho State Water Plan also recognized the 5,000 cfs at Johnson's Bar and 13,000 cfs at Lime Point flow requirements contained in the HCC Federal Energy Regulatory Commission (FERC) license were in the public interest, the 1976 Plan did not establish these flow requirements as state minimum stream flows. The Idaho Legislature in 1978, however, established a 5,000 cfs minimum average daily flow at Johnson's Bar to be maintained 95% of the time. In 1986, the Idaho State Water Plan recognized a minimum average daily flow at Lime Point of 13,000 cfs to be maintained 95% of the time. Like the HCC federal power license, however, neither the Johnson's Bar nor the Lime Point minimum stream flows are based upon natural flow conditions, but rather, are intended to protect natural flow of the Snake River below~~

[2] An average daily flow is the average of multiple flow measurements taken during a 24-hour period.

~~the HCC and operational releases from the HCC. Neither minimum stream flow is enforceable against junior water rights diverting from the Snake River above the HCC nor can a call be made for the release of water stored in the HCC. In addition, the Lime Point minimum stream flow water right cannot be used to seek administration of water rights diverting from the Salmon River Basin.~~

~~The Swan Falls Controversy of the 1980s marked the most recent chapter in the development of the Snake River minimum stream flow framework. While the primary legal issue in the Swan Falls controversy was the question of the subordination of certain water rights claimed by Idaho Power Company to consumptive use water rights upstream of Swan Falls Dam, at the center of the controversy was the declining flows of the Snake River below Milner Dam that had resulted, in part, from ground water development of the Eastern Snake Plain Aquifer. The Company also was concerned that the 3,300 cfs Murphy minimum stream flow of the 1976 Idaho State Water Plan would allow further depletion of the flow of the Snake River. As part of the resolution of this controversy, the~~ In 1985, the Murphy minimum stream flow was increased to~~Idaho State Water Plan was amended to increase the minimum average daily flow at the Murphy gage~~ to an average daily flow of 3,900 cfs during the irrigation season and 5,600 cfs during the non-irrigation season as part of the resolution of the Swan Falls controversy, which dealt whether Idaho Power Company's hydropower water rights were subordinate to upstream uses.~~.~~ ~~In exchange, a portion of Idaho Power Company's hydropower power water rights were explicitly subordinated to existing and certain future upstream water rights.~~ The 1986 State Water Plan described the Murphy and Weiser minimum stream flows as "management constraints" to "insure that minimum flow levels of Snake River water will be available for hydropower, fish, wildlife and recreational purposes." ~~The settlement also explicitly reaffirmed the Milner zero minimum stream flow, but~~but the 1986 Plan also recognized the hydraulic connection between the Eastern Snake Plain Aquifer and directed that it "be managed as an integral part of the river system."

In 1978, the Idaho Legislature established a minimum stream flow of 5,000 cfs at the Johnson Bar Gaging Station "to retain the stream flows and hydro-base." Chapter 345, 1984 Idaho Sess. L. 884, 886. As part of the Swan Falls Settlement, a minimum flow of 13,000 cfs was established at the Lime Point Gaging Station. These minimum stream flows were initially established to protect navigational flows below the HCC, but now serve to protect flows of the main stem Snake River below the HCC for instream uses. As discussed in Policy 4I, however, the Johnson Bar and Lime Point minimum stream flows are not enforceable against water rights diverting from the waters of the Snake River or surface or ground water tributary to the Snake River upstream of the HCC. Additionally, the Lime Point minimum stream flow cannot be enforced against water rights diverting waters of the Salmon River or surface or ground water tributary to the Salmon River.

To summarize, the Milner, Murphy and Weiser minimum stream flows establish the management framework for optimum development of the water resources of ~~water planning and management in~~ the Snake River Basin above the HCC. ~~The State Water Plan, beginning with the first version in 1976, and continuing though each successive plan, has recognized that the minimum stream flows at Milner, Murphy, and Weiser ensure a balance between consumptive and instream uses of the flow of the main stem Snake River. Johnson's Bar and Lime Point~~

~~minimum stream flows reflect FERC operating conditions for the HCC, and therefore do not establish a framework for water planning and management in the Snake River Basin above the HCC.~~ The Johnson Bar and Lime Point minimum stream flows protect main stem Snake River flows below the HCC for instream uses.

Implementation Strategies:

- ~~DA monitoring program will be d~~evelop a monitoring program~~ed~~ by 2014 to account for fluctuations resulting from the operation of Idaho Power Company's hydropower facilities in the calculation of the Murphy minimum average daily flow.
- Develop tools to predict Snake River flows at the Murphy Gage based on ESPA ground water level trends, precipitation patterns, new appropriations, and changes in conservation practices.
- Develop by 2014 management scenarios to ensure that Snake River flows at the Murphy and Weiser Gages remain above established minimum stream flow levels.
- ~~Reevaluate the Johnson's Bar and Lime Point minimum stream flows when the FERC license for the HCC is issued.~~

Milestones:

- Snake River minimum ~~average daily~~ stream flows ~~are~~ maintained.
- Tools developed to predict Snake River flows at the Murphy Gage.
- Management strategy developed to ensure that Snake River minimum stream flows at the Murphy and Weiser Gages are maintained.
- ~~Johnson's Bar and Lime Point minimum stream flows are reviewed.~~

4B - SNAKE RIVER MILNER ZERO MINIMUM FLOW

Water resource policy, planning, and practice should continue to provide for full development of the Snake River above Milner Dam recognizing that the exercise of water rights above Milner Dam has and may reduce flow at the Dam to zero.

Discussion:

Idaho Code § 42-203B(2) provides that "[f]or the purpose of the determination and administration of~~water~~ rights to the use of the waters of the Snake River or its tributaries downstream from Milner Dam, no portion of the waters of the Snake River or surface or ground water tributary to the Snake River upstream from Milner Dam shall be considered." This provision was enacted in 1986 to confirm and clarify the Milner zero minimum stream flow and the "two rivers" concept.~~diverting from the Snake River and surface and ground water tributary to the Snake River downstream from Milner Dam shall not be considered for purposes of the determination and administration of existing and future rights to the use of the waters of the Snake River or its tributaries upstream from Milner Dam.~~ ~~As discussed in Policy 4A, the Milner~~

~~Zero Minimum Stream Flow evolved out of the 1920 Board of Engineers' plan that sought to provide for the optimum development of the Snake River upstream from Milner Dam by capturing and storing, to the extent economically feasible, the flow of the river for future agricultural development.~~

~~The 1976 State Water Plan formally implemented the Milner Zero Minimum Stream Flow by establishing a "protected flow" of zero cubic feet per second at the Milner gaging station. The 1976 State Water Plan Milner Zero Minimum Stream Flow Policy recognized that for purposes of administration, the Snake River at Milner is severed. As part of the resolution of the Swan Falls controversy, the State reaffirmed the "two rivers" administration concept through adoption of Policy 5A of the 1986 Idaho State Water Plan and enactment of Idaho Code § 42-203B(2).~~

~~The Board~~Policy 4B reaffirms the Milner zero minimum stream flow and the "two rivers" concept, which have ~~that has~~ appeared in each successive revision of the Idaho State Water Plan. ~~and~~

The only significant unappropriated flows in the main stem Snake River above Milner Dam are sporadic high flows. The optimum development of these flows will be achieved through storage of these flows in surface water reservoirs above Milner Dam and the ESPA. ~~that it is in the public interest to develop in-stream and off-stream storage projects as well as aquifer recharge projects to capture unappropriated flows to satisfy current and future water supply needs. The impact of developing new storage above Milner must be accounted for in water resource planning and management decisions in the Snake River Basin below Milner.~~

~~As this Board recognized in the Memorandum of Agreement entered into with Idaho Power Company as part of the 2009 Framework Reaffirming the Swan Falls Settlement,~~ I~~"i~~mplementation of managed recharge will have an effect on the flow characteristics of the Snake River above and below Milner Dam.~~"~~ Accordingly, while the Eastern Snake Plain Aquifer Comprehensive Management Plan established a long-term annual hydrologic target of 150,000 to 250,000 acre-feet of managed recharge, ~~the Memorandum of Agreement provides that~~ this target should~~e long-term target should~~ be phased in to allow for ~~in so that the State can "make~~ informed water management and planning ~~decisions . . . ."~~ ~~Consistent with the Memorandum of Agreement~~T, ~~t~~he Phase I managed recharge hydrologic target for the Snake River Basin above Milner is to recharge between 100,000 and 175,000 acre-feet ~~into the ESPA~~ on an average annual basis. ~~by January 1, 2019. The Board, b~~Based upon data gathered during this~~e~~ initial phase of managed recharge, the Board will consider in 2019 whether to ~~will establish a plan for~~ implement~~ation of~~ the ESPA long-term managed recharge hydrologic target ~~in 2019~~.[3]

As discussed in Policy 4E, d~~D~~evelopment of new surface storage will take time. In the interim, the Board will cooperate with stakeholders to explore ways to optimize the management of flows that are currently passing over Milner Dam to first meet water supply needs above Milner Dam, and second to shape any remaining unappropriated~~excess~~ flows for hydropower and other uses below Milner Dam.

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[3] The Board entered into a Memorandum of Agreement with Idaho Power Company as part of the 2009 Framework Reaffirming the Swan Falls Settlement dated May 6 , 2009, that sets forth additional understandings between the Idaho Power Company and the Board regarding implementation of managed recharge.

Consistent with ~~Policy 4B and~~ Idaho Code § 42-203B(2), no use of ~~any~~ unappropriated flows passing Milner Dam by downstream users establishes a right to call on such flows now or in the future.

Implementation Strategies:

- Develop and maintain a reliable supply of water for existing uses and future beneficial uses above Milner Dam.
- Assess the feasibility of construction of new on-stream and off-stream storage in the Snake River Basin above Milner Dam.
- Implement a sustainable aquifer recharge program.
- A~~Implement a process to a~~ddress water management and reservoir operation needs through ~~a standing advisory subcommittee that will include at least one representative from Idaho Power Company, the Committee of Nine, and the Bureau of Reclamation~~the Upper Snake River Advisory Committee. ~~The subcommittee will be a collaborative forum where relevant information may be exchanged and reviewed on how the state and the Bureau of Reclamation, in the exercise of their respective authorities, can optimize the management of the water resources and the reservoir system above Milner Dam. This subcommittee may periodically submit advisory recommendations to the Board and the U.S. Bureau of Reclamation, but will have no power or authority to affect vested water rights or to prescribe the manner in which the federal reservoir system or the water resources above Milner Dam shall be managed.~~
- Measurement and Monitoring Implementation Strategy:
  - Continuously improve the Eastern Snake River Aquifer Model ("ESPAM"), the Snake River Planning Model ("SRPM"), and the Snake River Water Right Accounting Program~~System~~.
  - Promote linkage of the models and their use in evaluation of impacts of various management decisions on Snake River flows, aquifer levels, and reservoir operations.
  - Undertake measurement and monitoring of the combined river and aquifer system to facilitate water management and planning in the Snake River Basin above Milner Dam.
  - Investigate, test, and adopt new water measurement and modeling methods and technologies that improve water management capabilities.
- Implement and maintain cooperative water resource agreements and partnerships with neighboring states, the federal government, and Indian tribes in managing the water resources of the Snake River above Milner Dam.
- ~~Identify constraints that restrict or limit water transferability for DCMI and other emerging needs.~~

Milestones:

- Process in place that provides recommendations to optimize the management of the water resources and the reservoir system above Milner Dam.
- A managed aquifer recharge program above Milner Dam implemented that recharges between 100,000 and 175,000 acre-feet on an average annual basis by 2019 and data gathered to assess the efficacy of the program.
- Projects implemented that enhance the water supply above Milner Dam.

4C - REALLOCATION OF SNAKE RIVER TRUST WATER

Water made available for reallocation to new uses in the Snake River trust water area pursuant to Idaho Code § 42-203B shall be allocated in accordance with criteria established by Idaho Code §§ 42-203A and 42-203C.

Discussion:

The term "trust water" refers to water made available for future development as a result of the 1984 Swan Falls Settlement, which resolved the long-standing conflict between use of the flow of the Snake River for hydropower purposes and for agriculture and other depletionary uses. The details of this century-long conflict are chronicled in two Idaho Supreme Court decisions and the SRBA District Court's Memorandum Decision and Order on Cross-Motions for Summary Judgment dated April 18, 2008, and therefore, are not repeated here. ~~The statutory trust created as a result of the settlement, however, establishes the framework for water planning and management of the main stem Snake River between Milner Dam and the Murphy gage.~~ A brief overview of the trust created by Idaho Code § 42-203B(2), however, is provided as context for this policy.

~~One of the~~ A core principle~~s~~ of the Swan Falls Settlement ~~wa~~is that ~~the~~ flows of the Snake River downstream from Milner Dam in excess of the Murphy minimum average daily flow of 3,900 cfs during the irrigation season and 5,600 cfs during the non-irrigation season are~~would be~~ available for future development in accordance with state law. The Settlement, however, recognized development would occur over time and that in the interim it was in the public interest to allow Idaho Power Company to continue to use such~~the~~ flows ~~of the Snake River below Milner Dam~~ up to the licensed amount of the~~its~~ hydropower water rights "pending approval of depletionary future beneficial uses."

T~~In order to implement t~~hese dual objectives were implemented through, ~~the State of Idaho took title to twenty-five hydropower water rights, under~~ a ~~statutory~~ trust, established by Idaho Code § 42-203B(2), which operates for the joint benefit of Idaho Power Company and the people of the State of Idaho. The statutory trust consists of twenty-five hydropower water rights originally appropriated by Idaho Power Company for flows in excess of the Murphy minimum flow, and now held by the State, by and through the Governor~~, is the trustee~~. Idaho Power Company uses the flows available under the water rights held in trust for hydropower purposes until those flows are appropriated to new uses approved pursuant to state law, including Idaho Code §§ 42-203A and 42-203C. The "reallocation" is accomplished through subordination of the hydropower water rights held in trust to the new uses, pursuant to Idaho Code § 42-203B(2).

While the water made available for future development as a result of the trust is often referred to as "trust water," this term is a misnomer. The trust consists of "water rights" as opposed to "water." Trust Water is simply a shorthand term referring to flows above the minimum stream flow at the Murphy Gage, which were originally appropriated under water rights for hydropower generation at Idaho Power Company's facilities located between Milner Dam and the Murphy Gage. Additionally, the term refers only to water sources tributary to the Snake River below Milner Dam, as shown on Figure 1 (the "Trust Water Area").[4]

The Swan Falls Settlement and the implementing statutes did not attempt to define there ~~is no~~ specific amount of trust water available for future development.~~;~~ Rather, the availability of trust water is linked to ~~, the term describes the flow at Idaho Power Company's facilities in the Milner to Murphy reach of the Snake River in excess of~~ the Murphy minimum flow and a number of other statutory factors.~~less than the total appropriated flow at each facility. The Swan Falls Framework recognized that~~ "T[t]he actual amount of development that can take place without violation of the [Murphy] minimum streamflows will depend on the nature and location of each new development, as well as the implementation of new practices to augment the streamflow."

Figure 1 Trust Water Area

Figure 2 shows ~~what~~the portions of the hydrograph at Murphy ~~is~~ deemed to be "minimum stream flows" and "trust water." ~~at the Swan Falls dam~~[5]. A similar hydrograph was prepared in 1988 in

[4] Pursuant to the Swan Falls Settlement and Idaho Code § 42-203B(2) "water rights for hydropower purposes on the Snake river or its tributaries downstream from Milner dam shall not place in trust any water from the Snake river or surface or ground water tributary to the Snake river upstream from Milner Dam." Thus, the hydropower water rights held in trust carry no right to seek administration of the rights to the use of the waters of the Snake or its tributaries upstream from Milner Dam.

[5] Figure 2 updates Figure 3 contained in the IDWR Policy and Implementation Plan for Processing Water Right Filings in the Swan Falls Area, dated November 3, 1988, which depicted water made available for appropriation above the Murphy Gage as a result of the Swan Falls Settlement. The 1988 ~~original~~ graph plotted~~used~~ average monthly flows, but ~~for the purpose of representing the amount of water potentially available for future development. S~~since that time, technology has made it easier to graph average daily flows. Thus, Figure 2 uses average daily flows as reported by the USGS to provide a more accurate depiction of flow conditions at the Murphy Gage. Specifically, Figure 2 shows average daily flows for 1961 and 2003 and the average of the average daily flows for the years 1928 through 1983 and 1984 through 2010. (The Swan Falls Settlement excludes fluctuations resulting from the operation of Idaho Power Company facilities from the calculation of the minimum average daily flow at Murphy. The methodology for calculating the minimum average daily flow is currently being refined.) ~~Although not included here, the Policy and Implementation Plan also contains a similar graph that depicted water available for appropriation upstream from the Bliss hydropower facility as a result of the Swan Falls Settlement.~~The upper limit of the "trust water" portion of the hydrograph at any given location between Milner and Murphy is defined by the hydropower water rights held in trust by the State for the corresponding Idaho Power Company facility. Figure 2 applies only to Murphy, where trust water is limited to that flow between the Murphy minimum stream flow and 8,400 cfs, the amount of the Swan Falls hydropower water right held in trust. The "trust water" available at locations upstream from Murphy is the difference between the Murphy minimum stream flow and the amount of the water rights held in trust for each upstream facility.

connection with t~~T~~he ~~original graph used in~~ implementation of the Swan Falls Settlement, and included the 1961 average daily flow at the Murphy Gage as representative of the then~~-~~existing low flow year. Figure 2 includes a~~A~~verage daily flow data from 1984 to 2011 ~~is added to Figure 2~~ to show the relative change in flow at the Murphy Gage since implementation of the Swan Falls Settlement.

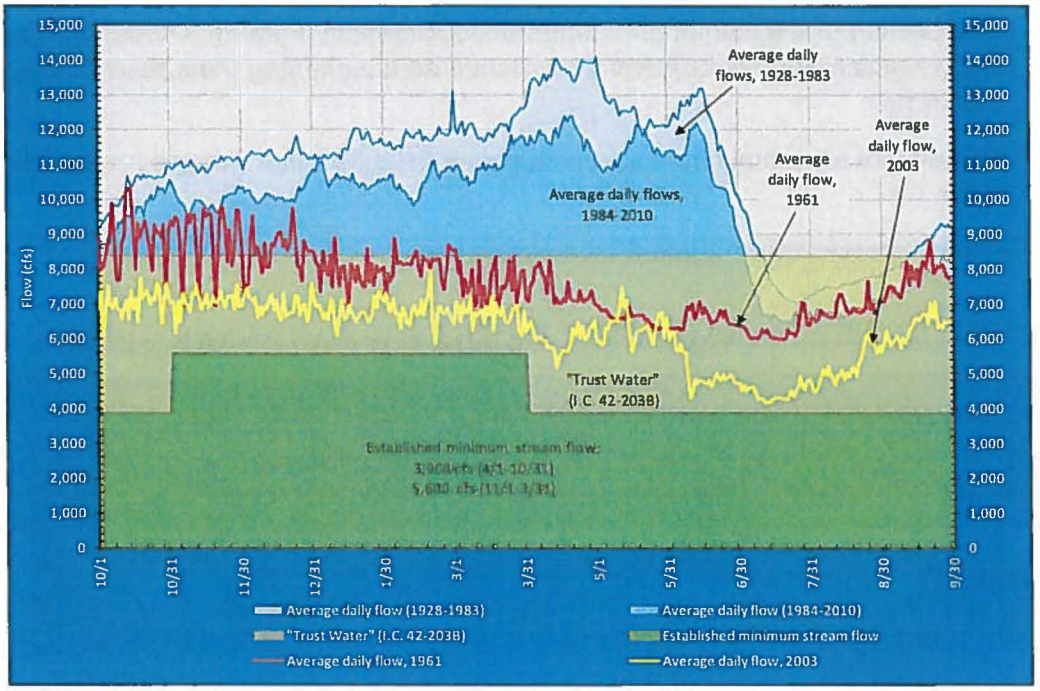

Figure 2 Swan Falls Trust Water Flows

While flows are beginning to approach the minimum average daily flow at the Murphy Gage ~~during~~ at certain times in low flow years, ~~in most years~~ Snake River flows in most years are significantly above the Murphy minimum average daily flow.

The opportunity for further development of trust water~~, however,~~ is currently limited by three factors. First, there is uncertainty over the relative rights of senior water right holders ~~for uses~~ other than hydropower to the spring flows in the Thousand Springs reach. While the Swan Falls Settlement subordinated the use of the flows of the Snake River for hydropower purposes, it did not address the rights of other senior water right holders. Second, the amount of trust water that remains to be developed is uncertain because some trust water rights were issued for a term of years. Those permits are nearing the end of their terms and ~~term limited trust water right~~ are~~will be~~ subject to ~~a public interest~~ review by the Director~~in the near future~~. Third, in almost all cases, ~~there is~~ a moratorium precludes ~~on~~ issuance of new water rights within the trust water area. Until these issues are resolved, it is not possible to make informed decisions regarding the allocation of the remaining trust water.

Implementation Strategies:

- Conduct hydrologic studies to determine the amount of additional development possible within the Murphy minimum stream flow constraint.

- Develop a conjunctive management plan setting forth measures necessary for future development of trust water.
- Review term limited trust water rights.

Milestones:

- Quantification of the amount of additional development possible within the Milner to Murphy reach of the Snake River consistent with maintaining the Murphy minimum stream flow.
- Adoption of a conjunctive management plan for the Milner to Murphy reach of the Snake River.
- Complete review term limited trust water rights.

4D - CONJUNCTIVE MANAGEMENT OF THE ESPA AND SNAKE RIVER

The Eastern Snake Plain Aquifer and the Snake River below Milner Dam should be conjunctively managed to provide a sustainable water supply for all existing and future beneficial uses within and downstream of the ESPA.

Discussion:

The ESPA is approximately the size of Lake Erie and underlies more than 10,800 square miles of southern Idaho, stretching from St. Anthony to King Hill. It is one of the largest and most productive aquifers in the world, estimated to contain 1 billion acre feet of water. Most of the ~~Eastern Snake Plain Aquifer (~~ESPA~~)~~ is in direct hydraulic connection with the Snake River. The Snake River alternately contributes water to— and receives water from— the ESPA. ~~The ESPA discharges an average of approximately 2,500 cfs of water to the Snake River at American Falls and approximately 5,200 cfs in the Thousand Springs reach between Milner and King Hill.~~

The volume of water stored in the ESPA derives from natural inputs (precipitation, tributary underflow, seepage from rivers) and from irrigation related inputs (seepage from canals and farm fields). The volume of water stored in the ESPA increased dramatically during the first half of the 20th century as large irrigation canals transported millions of acre feet of water from the Snake River out on to the Eastern Snake River Plain. Crops were irrigated by flood irrigation, and the water not consumed by the crops percolated into the ESPA as "incidental recharge. As a result, the groundwater table rose across the ESPA by as much as 30-50 feet. The flow of springs near American Falls and in the Thousand Springs reach also increased dramatically. Thousand Spring flows increased from 4,200 cfs prior to irrigation to about 6,800 cfs by the late 1950s. Since then spring flows have declined as a result of more efficient surface water irrigation practices, the termination of winter canal flows, ground water pumping, and drought. Springflows in the Thousand Springs reach currently are about 5,200 cfs, a decline of just over 20% over the past sixty years. While spring discharges from the ESPA remain above pre-irrigation levels, the decline from peak levels has created conflicts between surface and groundwater users, and in some instances between senior and junior groundwater users.

~~The advent of extensive ground water pumping in the ESPA, combined with changes in surface water irrigation practices and a series of droughts, have had a profound effect on the ESPA groundwater and spring discharge rates. Overall, spring discharge rates in the Thousand Springs reach of the Snake River have declined from about 4.9 MAF/ear (6,800 cfs) in the early 1950s to about 3.8 MAF/year (5,200 cfs) currently – a decline of just over twenty (20)% over the past 60 years. Past aquifer level declines, and resulting reductions in spring discharge have created conflicts between surface and groundwater users, and in some instances between senior and junior groundwater users.~~

During certain times in low-flow years, the Snake River flow upstream of Milner Dam is fully diverted, and the Snake River flow at Milner is reduced to zero. At these times the Snake River flow at the Murphy Gage consists mostly of ESPA discharge from the Thousand Springs area.

Recognizing ~~a~~the hydraulic ~~connected nature~~ connection between ~~of~~ the ESPA and the Snake River~~ground and surface water in the ESPA~~, the 1986 State Water Plan identified the need ~~began~~ conjunctive management of ground- and surface -water resources ~~in 1986~~. In recent years, the State has implemented scientific measures to increase knowledge of the hydraulic connection between the ESPA and the Snake River, and implemented measures to improve aquifer conditions in, and spring discharge from, the ESPA. Continuation of these efforts is fundamental to ensuring an adequate water supply for existing and future water demands within the Eastern Snake River Basin.

Conjunctive management of the Snake River Basin water resources is also key to meeting ~~Snake River~~ the Murphy minimum stream flow~~s at the Murphy and Weiser Gage~~s ~~set forth in Policy 4A~~. The 1984 Swan Falls Settlement explicitly recognized effective water management of the ESPA and Snake River – and associated policies and recommendations laid out in the State Water Plan – as the means of ensuring the Murphy minimum average daily flow while optimizing the development of the Snake River Basin: "[t]he State Water Plan is the cornerstone of the effective management of the Snake River and its vigorous enforcement is contemplated as a part of the settlement." [6]

Building on the existing conjunctive ~~administration and~~ management efforts, the Idaho Legislature in 2006, adopted Senate Concurrent Resolution 136, which requested ~~that~~ the Idaho Water Resource Board to develop a CAMP~~comprehensive aquifer management plan~~ for the Eastern Snake River Plain Aquifer. In January 2009, the Board adopted the ESPA ~~Comprehensive Aquifer Management Plan (~~CAMP~~)~~. ~~T~~the ~~overall~~ goal of which ~~ESPA CAMP~~ is to "[s]ustain the economic viability and social and environmental health of the Eastern Snake Plain by adaptively managing the balance between water use and supplies." The objectives of the plan are to increase predictability for water users by managing for a reliable supply, creating

[6] This policy addresses conjunctive management of the Eastern Snake River Aquifer and the Snake River and not water rights administration. Water rights administration is the enforcement of the relative rights of water right holders under the prior appropriation doctrine. As noted in Policy 1E~~By comparison,~~ conjunctive management is broader and encompasses actions ~~other than water rights administration~~ that can be taken to optimize the benefits and value of Idaho's water resources. While conjunctive management is not a substitute for water rights administration, it is in the public interest to conjunctively manage the ESPA and the Snake River to lessen or obviate the need for broad-scale water rights administration to accomplish general water-management goals.

alternatives to administrative curtailment, managing overall demand for water within the Eastern Snake Plain, increasing recharge to the aquifer, and reducing withdrawals from the aquifer.

~~Policy 4D embraces conjunctive management goals and objectives of the ESPA CAMP. Implementation of the ESPA CAMP will improve the opportunities to adaptively manage and optimize water supplies within and downstream of the ESPA, resulting in: increased gains in some river reaches; improved storage carryover; increased aquifer levels; opportunities for municipal and industrial growth; reductions in overall consumptive use; increased spring discharge rates; and an ongoing public process for assessing the hydrologic, economic, and environmental issues related to the implementation of management strategies.~~

The ~~overall~~ long-term~~goal~~ objective of the ESPA CAMP is to effectuate a net annual ESPA water budget change of 600 thousand acre-feet (kaf) by the year 2030. This change is to be achieved through implementation of measures designed to ~~both~~ reduce demand on and to ~~increase the~~augment the water supply of the ESPA. Approximately 100 kaf of demand reduction is to be achieved through groundwater to surface water conversions, and another 250-350 kaf of demand reduction is to be achieved through various measures designed to retire existing water rights. Aquifer recharge is expected to increase the ESPA water supply by 150-250 kaf.

The ESPA CAMP uses a phased approach to achieving the long-term change in the water budget. The goal of Phase I~~I~~ of the ESPA CAMP is to implement measures that will result in a net annual change in the ESPA water budget of between 200 kaf and 300 kaf. The recommended actions to achieve this change include ~~redistributing existing water supplies (including selected~~ ground- to-surface -water irrigation conversions~~)~~, managed aquifer recharge, and augmentation of supplies through demand reduction and weather modification. ~~The~~ ESPA CAMP ~~calls for implementation of~~ Phase I strategies are to be implemented by 2018 with ongoing monitoring and evaluation of the intended and unintended effects of the strategies. The Phase I monitoring and evaluation studies will be used to select, design, and implement Phase II strategies that will lead to an additional 300-400 kaf ~~"~~water budget change.~~"~~

Policy 4D embraces the conjunctive management goals and objectives of the ESPA CAMP. Implementation of the ESPA CAMP will improve the opportunities to adaptively manage and optimize water supplies within and downstream of the ESPA, resulting in: increased gains in some river reaches; improved storage carryover; increased aquifer levels; opportunities for municipal and industrial growth; reductions in overall consumptive use; increased spring discharge rates; and an ongoing public process for assessing the hydrologic, economic, and environmental issues related to the implementation of management strategies.

Most of the human made changes to the ESPA water balance during the past decades are reflected in current aquifer levels and spring flows. Continued changes in irrigation practices (e.g., conversion from gravity irrigation to sprinkler irrigation) and future climate variability, however, may create additional impacts to ESPA aquifer levels and aggregate spring discharge. Such impacts affect not only the ESPA area but also the Snake River downstream of the ESPA, because aggregate spring discharge from the Thousand Springs reach is the primary source of river flows in the Milner to Murphy reach~~water sustaining the Murphy minimum stream flow,~~ during portions of some years.

To date, efforts to monitor and measure ESPA groundwater levels, diversion volumes, and river reach/gains have focused on the ESPA, individual springs discharging water from the ESPA, and reaches of the Snake River hydraulically-connected with the ESPA. Because of the importance of the ESPA discharge on downstream reaches of the Snake River, however, it is imperative that an enhanced spring-flow monitoring program be developed to provide the information necessary for identifying, tracking, and predicting ~~changes in~~ future spring discharge trends. Such a monitoring program ~~will~~ needs to include long-term measurements of aggregate annual spring discharge (as opposed to point-in-time discharge from individual springs) and ESPA ground-water levels.

Sustaining Snake River minimum stream flows downstream of the ESPA may require short-term and long-term adaptive management measures. A monitoring program aimed at identifying long-term spring-discharge trends in the Snake River Thousand Springs reach should be designed to support the development of one or more adaptive management "triggers" based on pre-determined observed or predicted change in aggregate spring discharge rate, aquifer levels, and/or Snake River flow. The triggers should be used to initiate adaptive management measures that address the cause – or impacts – of any unacceptable decline in Snake River flow downstream of the ESPA.

Monitoring efforts and adaptive management measures are crucial to sustaining the economic viability and social and environmental health of the ESPA and the Snake River. Successful adaptive management strategies, built on the principles of conjunctive management of ground and surface water, supported by scientific understanding and reliable data~~, and~~ that take into account the complex and interrelated nature of Snake River subasins, will accomplish two goals: 1) ensure an adequate and sustainable water supply for existing and future uses, and 2) reduce conflicts between ground and surface water users.

Implementation Strategies:

- Implement actions delineated in the ESPA CAMP that will enhance aquifer levels and spring flows.
- Continue existing efforts to measure and monitor ground and surface water diversions, water levels, spring discharge rates, and Snake River reach gains/losses, and quantify ground and surface water interactions.
- Develop and implement a monitoring program to better predict the occurrence and duration of future low flows in the Snake River.
- Create a working group to assist in the development of a spring monitoring program.
- Update~~Revise~~ the Snake River: Milner Dam to King Hill Part B ~~of the~~ State Water Plan to incorporate ESPA CAMP goals and objectives and to account for water management developments since its adoption ~~further develop the conjunctive management objectives set forth in the State Water Plan~~.

Milestones:

- ESPA CAMP hydrologic conjunctive management targets met or exceeded.
- Snake River flows at the Murphy and Weiser Gages remain at or above established minimum stream flows.
- Reduced water-related conflict in the Snake River Basin.
- Revision of Part B of the State Water Plan.

4E - SNAKE RIVER BASIN NEW STORAGE

Development of new on-stream, off-stream, and aquifer storage is in the public interest; provided, however, applications for large surface storage projects in the Milner to Murphy reach of the Snake River should be required to mitigate for~~their~~ impacts on hydropower generation.

Discussion:

ESPA Managed Recharge Pilot program

Recharging aquifers as a water supply alternative has significant potential to address water supply needs, in addition to addressing conjunctive management issues. Pursuant to the ESPA CAMP, the Board is undertaking a five-year pilot program of managed aquifer recharge to the Eastern Snake Plain Aquifer. One of the potential benefits of managed recharge in the ESPA is increased water storage in the aquifer. Effectiveness monitoring and evaluation results will be used to select and design future managed recharge strategies and projects.

~~Most of the Eastern Snake Plain Aquifer (ESPA) is in direct hydraulic connection with the Snake River. The Snake River alternately contributes water to and receives water from the ESPA. The ESPA discharges an average of approximately 2,500 cfs of water to the Snake River at American Falls and approximately 5,200 cfs in the Thousand Springs reach between Milner and King Hill.~~

Surface Water Projects

New Snake River surface storage projects should be investigated and constructed if determined to be feasible. Although there are major dams and reservoirs designed for water storage, flow regulation, and flood control on the Snake River and its tributaries, their existing capacity is insufficient to provide the water supply and management flexibility needed for the myriad of existing and future beneficial uses. ~~This is the case in every water year, but even more so~~especially in years of drought and limited snowpack. ~~As a consequence, new storage should be pursued throughout the Snake River Basin, except within the Milner to Murphy reach with one exception.~~

~~While additional storage water in the Milner to Murphy reach of the Snake River would be beneficial, d~~Diversion of water from the main stem of the Snake River between Milner and the Murphy Gaging station for storage during the period November 1 to March 31 will have a significant impact on hydropower generation. Thus, any ~~no new storage projects within this reach of the Snake River are recommended and any approval of~~ new storage projects in this reach should be coupled with provisions that mitigate for the impact of such storage depletions

on hydropower generation. The term "mitigation" is defined as causing to become less harsh or hostile, and is used here rather than "compensate" which connotes equivalence. Methodology will be developed for use in calculating impacts on hydropower generation as part of any application to construct new storage within this reach of the Snake River.

A number of studies focusing on water storage as one potential measure for addressing water supply demand and flood risk reduction are underway. This section provides a brief description of the most significant studies that have been initiated or are in the planning process.

Henry's Fork Project/Teton River Basins

The Board and the U.S. Bureau of Reclamation are conducting a study of water resources in the Henry's Fork/Teton River Basins to develop alternatives for improving water supply conditions in the Eastern Snake Plain Aquifer and upper Snake River Basin. These alternatives include new water storage projects, enlargement of existing reservoirs, and conservation and water management strategies, including managed aquifer recharge and automated water delivery systems.

Minidoka Dam Enlargement

In the 1980s, the Bureau of Reclamation and irrigation districts initiated the required planning process and feasibility studies to replace the spillway and two canal headworks due to the state of deterioration and potential for ongoing damage to sections of the Minidoka Dam. In 2008, the Board partnered with the Bureau of Reclamation to also evaluate the structural raising of Minidoka Dam to accommodate a 5-foot rise in normal reservoir surface elevation, in conjunction with planned spillway repairs. The study found that a 5-foot rise is technically feasible, and would provide an additional 67,000 acre-feet of storage with an average annual yield of 33,000 acre-feet. Funding for the enlargement of Minidoka Dam, however, is currently not available. If economic or other conditions change, the Board will consider further evaluation of this storage option.

ESPA Managed Recharge Pilot program

Recharging aquifers as a water supply alternative has significant potential to address water supply needs, in addition to addressing conjunctive management issues. Pursuant to the ESPA CAMP, the Board is undertaking a five-year pilot program of managed aquifer recharge to the Eastern Snake Plain Aquifer. One of the potential benefits of managed recharge in the ESPA is increased water storage in the aquifer. Effectiveness monitoring and evaluation results will be used to select and design future managed recharge strategies and projects.

Lower Boise River Interim Feasibility Study

The lower Boise River corridor, from Lucky Peak Dam to its confluence with the Snake River has experienced rapid population growth and significant urban development over the past several decades. As a consequence, there is renewed interest in addressing water supply and flood control issues. Interest has also been expressed in environmental restoration, to include habitat preservation, aesthetics and recreation along the Boise River.

In 2009, the Board and the U.S. Army Corps of Engineers ~~(Corps)~~ partnered to conduct an Interim Feasibility Study focused on water storage potential and flood reduction in the Boise River Basin. ~~–~~A preliminary analysis ranked an enlargement of Arrowrock Reservoir as the highest priority alternative, followed by the construction of a new reservoir at the Alexander Flat site and a new reservoir at the Twin Springs site. A preliminary analysis completed in 2011 concluded that based on existing information, raising Arrowrock Dam is technically feasible. The evaluation identified a number of uncertainties that will be addressed during future study and data collection efforts, as funding becomes available.

Weiser-Galloway Gap Analysis, Economic Evaluation and Risk-Based Cost Analysis (Gap Analysis)

Water storage on the Weiser River and at the Galloway site has been studied for decades. In 1954, the Corps received a study authorization resolution for the Galloway Project from the U.S. Senate Public Works Committee. ~~_~~In the early 1970s, federal lands for the potential Galloway dam and reservoir site were classified and withdrawn for hydropower purposes by the Federal Power Commission (now FERC). In 2008, Idaho House Joint Memorial 8 directed the Board to investigate water storage projects statewide, including the Weiser-Galloway Project. The Board and the Corps partnered to conduct a "Gap Analysis" which was completed in March 2011. The Gap Analysis was designed to inform decision makers of critical information gaps that need to be addressed before deciding whether to move forward with comprehensive new environmental, engineering, and economic feasibility studies. The analysis identified two critical information gaps that must be resolved before- moving forward ~~deciding to move forward with a new and more comprehensive feasibility, environmental and engineering studies~~:

1. Determine the safety, suitability, and integrity of geologic structures at the potential dam and reservoir site.
2. Evaluate whether basin and system benefits would be realized by analyzing a series of system operating scenarios with a range of new storage options on the Weiser River. Potential benefits include flood risk reduction, hydropower, additional water storage, pump back, irrigation, recreation, and flow augmentation requirements for anadromous fish recovery. On July 29, 2011, the Idaho Water Resource Board authorized expenditure of up to $2 million to address these questions, and the required studies are currently underway.

Implementation Strategies:

- Implement a long-term managed aquifer recharge program to achieve an average annual recharge of 250,000 - 300,000 acre feet. In recognition that implementation of managed recharge will have an effect on the flow characteristics of the Snake River above and below Milner Dam and in order to confirm the relative merits of managed recharge, the Board's managed recharge program will be limited to not more than 175,000 acre-feet on an average annual basis until January 1, 2019.
- ~~Undertake studies of potential surface storage opportunities, which include assessing~~Evaluate the economic, social and environmental benefits and costs ~~nsequences~~ of the proposed surface projects ~~development~~.

- ~~Managed aquifer recharge goals achieved.~~

Milestones:

- Aquifer recharge program implemented ~~Studies completed~~.
- Actions taken to determine feasibility of~~defer or move forward with~~ identified storage projects~~development~~.
- ~~Aquifer management goals achieved.~~

4F - SNAKE RIVER BASIN AGRICULTURE

Development of supplemental water supplies to sustain existing agricultural development is in the public interest.

Discussion:

Agricultural use accounts for about 85% of the total diversions of the water of the Snake River Basin. Approximately 3.4 million acres of land are irrigated with surface water and 1.13 million acres of land are irrigated with ground water. As discussed more fully in Policy 4B, it has been the policy of the State since the adoption of the first state water plan to encourage the development of on-stream and off-stream storage above Milner Dam to capture unappropriated flows to the extent economically feasible for existing and future agricultural development and other beneficial uses in the Snake River Basin above the Dam~~, as well as other beneficial uses~~.

As a result of the Swan Falls Settlement, the flow of the Snake River between Milner Dam and the Murphy Gage in excess of the Murphy minimum stream flow is available for future agricultural ~~(~~and DCMI~~)~~ development. As discussed in Policy 4C, however, the opportunity for additional agricultural development of the waters of the Snake River and surface and ground water tributary to the Snake River between Milner Dam and the Murphy Gage is limited because of the conflicts over conjunctive management of Thousand Springs flows and a moratorium on the issuance of new permits within this reach of the Snake River issued on April 30, 1993.

In summary, agricultural development for the foreseeable future is likely to be limited because of the absence of a reliable water supply. To the extent new agricultural development occurs, it is likely to be located on streams tributary to the main stem Snake River. Appropriation of water for agriculture likely will be for a supplemental water supply to address existing water shortages.

Implementation Strategies:

- Identify and develop opportunities to acquire water to address existing agricultural water supply shortages.
- Encourage the more efficient use of existing water supplies where such action will provide water to address existing agricultural water supply shortages.

Milestones:

- Existing water supply maintained.
- Supplemental water supply developed.
- Enrollment of agricultural lands into Conservation Reserve Enhancement Program (CREP).
- Implementation of water conservation projects that reduce demand.
- Acres in agricultural production maintained.

4G - SNAKE RIVER DOMESTIC, COMMERCIAL, MUNICIPAL AND INDUSTRIAL USES (DCMI)

It is in the public interest to ensure the availability of water for future DCMI uses in the Snake River Basin.

Discussion:

While most DCMI water uses are largely nonconsumptive, future growth in Idaho's population and commercial and industrial expansion require a sustainable water supply.

Snake River Above the Murphy Gage

As discussed in Policy 4C, ~~development of~~ the flow of ~~water supply tributary to~~ the Snake River between~~low~~ Milner Dam and the Murphy Gage is ~~has led to flows that are~~ approaching the Murphy minimum flow of 3,900 cfs ~~during a portion of the summer months, which may limit the amount of water available in this reach for all beneficial uses~~at certain times in low flow years. Implementation of the strategies in Policy 4D is essential to identifying the amount of trust water available to meet future DCMI uses in this reach of the Snake River.

Snake River Below the Murphy Gage

DCMI demands on the Snake River downstream of the Boise River drainage are anticipated to grow at a slow to moderate rate but the increased demands are not as pressing as in the lower Boise River area.

Boise River Basin

As discussed in Policy 4E, the lower Boise River area has experienced rapid population growth over the past several decades with land-use changing from agriculture to urban use. Water supply for DCMI uses is forecasted to be one of the most pressing water supply issues in this area. Additional DCMI demands are particularly pressing upstream of Star located on the Boise River.

The principle source of water for DCMI in the Boise River Basin is ground water, however, there is unappropriated water during the spring runoff that could be captured and stored. Thus, while increased demand for DCMI use may be partially met by water conservation and some decrease in or conversion from agricultural production, additional strategies, such as aquifer and surface water storage, efficient water marketing systems, and water re-use must be evaluated. Because

the Treasure Valley water system is a complex system of ground and surface water, further studies are underway to determine the contribution of surface water to aquifer recharge and the importance of aquifer discharge to surface water systems.

Implementation Strategies:

- Maintain existing surface irrigation distribution system and establish dual-use residential systems to preserve incidental recharge to aquifers.
- Develop flexible water marketing tools to facilitate rental and/or acquisition of water rights for new uses on a willing buyer/willing seller basis. Water acquisition strategies, however, must account for any adverse hydrologic, economic, and social impacts.
- Evaluate opportunities to enhance water supplies including but not limited to, ground water conservation, additional storage, and water re-use.
- Support programs that protect water quality for DCMI use.

Milestones:

- Completion of water supply enhancement projects.
- Infrastructure in place to distribute surface irrigation water to lands undergoing conversion from agricultural to residential.

4H - SNAKE RIVER HYDROPOWER USE

Hydropower generation is a beneficial use of the flow of the Snake River, and it is in the public interest to protect the minimum average daily flows set forth in Policy 4A as a base flow for hydropower use.

Discussion:

The Snake River and related tributaries provide Idaho with significant hydropower energy resources. Hydropower generation is a beneficial use of the waters of the Snake River, supplying approximately 65% of the State's energy production and ensuring that Idaho electric rates are among the lowest in the nation. Through enactment of Idaho Code §~~Section~~ 42-203B the State established the framework for balancing the use of the flow of the Snake River for hydropower and other instream purposes and the diversion of flow for depletionary uses.

As discussed in Policy 4C, the Swan Falls Settlement recognized the Snake River minimum stream flows set forth in Policy 4A provide an adequate base flow for hydropower use. W~~Further, w~~hile hydropower water rights in excess of the Murphy minimum average daily flow are subject to subordination to future consumptive uses approved in accordance with state law, the Swan Falls Settlement allows Idaho Power Company to use up to the decreed amount of the hydropower water rights held in trust by the State of Idaho for power generation pending reallocation of such flows for future consumptive uses.

The HCC, which represents the majority of Idaho Power's hydropower generation capacity, is the largest privately owned hydroelectric project in the United States. The FERC license for the HCC expired in 2005, and Idaho Power is currently operating the project under annual licenses while FERC processes Idaho Power's pending relicense application. The new license for the HCC will determine the operating conditions for the project and address the protection and enhancement of recreational, aesthetic, navigation, and fish and wildlife resources in the reach of the Snake River ~~that are~~ affected by the project. The Board is participating in the FERC licensing proceeding to ensure ~~that~~ the new license for the HCC includes operational conditions that preserve and enhance the generation capacity of the project in a manner consistent with the State Water Plan.

Implementation Strategies:

- Develop technical tools capable of assessing the impact of actions within the Snake River hydrologic system on the minimum stream flows of the Snake River.
- Evaluate management and administrative activities to determine the intended and unintended consequences of meeting the minimum stream flows on the Snake River.

Milestones:

- Minimum flows are maintained ~~to~~ for ~~meet~~ power generation ~~targets~~.

4I - SNAKE RIVER NAVIGATION

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Discussion:

Above Milner Dam the flow of the Snake River is completely regulated; therefore, no base flow for navigation is proposed for this reach of the Snake River. The Murphy and Weiser minimum stream flows set forth in Policy 4A provide a sufficient base flow for recreational and commercial navigation in the Snake River between Milner Dam and the Hells Canyon Dam.

Below HCC, the Snake

River flows into a steep and spectacular gorge that cuts through the Salmon River Mountains and Blue Mountains of Idaho and Oregon. Hells Canyon is one of the most rugged and treacherous portions of the ~~course of the~~ Snake River. The river flows 8,000 feet below the He Devil Peak of Idaho's Seven Devils Mountains. The Salmon River is a major tributary in this reach of the Snake River.

The Hells Canyon reach of the Snake River below the HCC provides unique recreational opportunities, including rafting, fishing, private and commercial jet boating, hiking, camping, and wildlife viewing. The area is a tourist destination that positively contributes to the local and regional economy. As such, providing adequate navigation conditions for private and commercial boating below the HCC is in the public interest.

The license issued by the Federal Power Commission for the HCC in 1955 addressed navigational flows below the HCC. Article 43 of the power HCC license provides that:

> *The project shall be operated in the interest of navigation to maintain 13,000 cfs flow in the Snake River at Lime Point (river mile 172) a minimum of 95 percent of the time, when determined by the Chief of Engineers to be necessary for navigation. Regulated flows of less than 13,000 cfs will be limited to the months of July, August, and September, during which time operation of the project would be in the best interest of power and navigation, as mutually agreed to by the Licensee and the Corps of Engineers. The minimum flow during periods of low flow or normal minimum plant operations will be 5,000 cfs at Johnson's Bar, at which point the maximum variation in river stage will not exceed one foot per hour. These conditions will be subject to review from time to time as requested by either party . . . .*

This license article has governed navigation flows since the original licensing of the HCC in 1955.

In the 1976 State Water Plan, the Board concluded that there was sufficient water in excess of the minimum flows established at the Milner, Murphy, and Weiser gaging stations to provide for additional uses and development and also allow for the navigation flow targets in Article 43 of the HCC license to be met without significantly affecting hydropower production. Based upon these conclusions, the 1976 State Water Plan found providing flows consistent with Article 43 was in the public interest. The 1976 Plan, however, did not establish minimum stream flows at Johnson's Bar or Lime Point.

In 1978, the Idaho Legislature, through enactment of Idaho Code § 42-1736A, created a minimum stream flow at Johnson's Bar to provide for "stream flows and hydro-power base" below the HCC. Through the adoption of the 1986 Idaho State Water Plan a minimum stream flow was established at Lime Point. Both minimum stream flows were recognized as providing a sufficient base flow for recreational and commercial navigation below the HCC. Consistent with the HCC FERC license, the Johnson's Bar and Lime Point minimum stream flows, however, are subordinated to upstream consumptive uses above the HCC and carry no right to seek the release of water from the HCC other than that required to be released by the terms of the FERC license.

Photo: Rafting on the Snake River in Hells Canyon
(Photo Courtesy of IDWR Staff)

As discussed in Policy 4F, FERC is in the process of relicensing the HCC. Various state and federal agencies exercise jurisdiction over resources in Hells Canyon and each of these agencies, together with private interests are parties to the HCC relicensing proceedings pending before FERC. Section 10(a)(1) of the Federal Power Act requires that a FERC licensed project "be best adapted to a comprehensive plan for improving and developing a waterway"; which requires a balancing of public interest factors. The FERC will set forth navigational flow conditions in the ~~Final Environmental Impact Statement (FEIS 2007) issued by the FERC preliminarily addressed navigation flows below the HCC and the issue will be determined by FERC in a subsequently issued~~ final license for the HCC~~order~~. The Board will participate in the ~~The Board believes that~~ FERC relicensing process to ensure ~~should consider and address the~~ navigational flow conditions are ~~issue in the new HCC license in a manner~~ consistent with the~~is~~ State Water Plan~~, while ensuring that upstream water rights and water development is not impacted, and the full hydropower capacity of the HCC is preserved~~. ~~The State of Idaho is actively participating in the HCC relicensing process to ensure that the State's interests are adequately addressed. The Board will continue to monitor the relicensing process to ensure consistency and continuity with this and future State Water Plans. Upon issuance of the new HCC license, the Board intends to review the impact of the new license on this policy.~~

Implementation Strategies:

- Participate with state and federal agencies in FERC relicensing proceedings to ensure the new FERC license for the HCC is consistent with the State Water Plan.

Milestones:

- When issued, FERC license consistent to Idaho State Water Plan.

4J - SNAKE RIVER FISH, WILDLIFE, RECREATION, AND SCENIC RESOURCES

The minimum stream flows set forth in Policy 4A provide adequate flows for ~~current~~ Snake River fish, wildlife, recreation, and scenic values in the main stem Snake River. ~~Any additional~~ Protection for ~~future~~ fish, wildlife, recreation, and scenic uses in tributaries to the Snake River~~purposes~~ should be addressed through Part B of the State Water Plan and the establishment of minimum stream flows pursuant to Chapter 15, Title 42, Idaho Code. The Board finds that implementation of the collaborative agreements discussed below are in the public interest.

Discussion:

In addition to the Policy 4A main stem Snake River minimum stream flows ~~set forth in Policy 4A~~, ~~the state has established~~ over fifty minimum stream flows have been established in the Snake River Basin above the HCC and protected rivers have been designated through the adoption of Part B state water plans. Additional protections for fish, wildlife, recreation, and scenic resources in Snake River tributary streams should be pursued through the Board's minimum stream flow and water planning processes.

The State has ~~also~~ entered into a number of voluntary agreements that benefit fish, wildlife, recreation, and scenic values while protecting existing water rights and uses and providing for economic stability. The~~se~~ agreements ~~are~~ described below.

Snake River Flow Augmentation

The State of Idaho, as part of the 2004 Snake River Water Rights Agreement ~~(2004 Agreement)~~, established a flow augmentation program that provides water for salmon and steelhead listed under the ESA~~ndangered Species Act~~. Pursuant to the provisions of the biological opinion for the Federal Columbia River Power System ("FCRPS"), and the 2004 Snake River Water Rights Agreement, the U.S. Bureau of Reclamation annually seeks to rent up to 487,000 acre-feet of water from willing lessors in Idaho for Snake River flow augmentation to assist in offsetting the impact of the FCRPS. Although flow augmentation from the upper Snake River has proven to be controversial because of the uncertainty regarding ~~inability to demonstrate the~~ specific benefits to ESA-listed fish, the State of Idaho cooperates with the federal program (see Idaho Code § 42-1763B) as a means of providing incidental take coverage for U.S. Bureau of Reclamation project~~s~~ operations in Idaho.

This flow augmentation program consists of two tiers. Tier 1 minimum flows are those ~~established~~ established through implementation of~~by~~ the Swan Falls Settlement. Tier 2 provides for the rental of up to 427,000 acre feet of storage water in accordance with the provisions of Idaho Code § 42-1736B and the Snake River flow component of the 2004 Snake River Water Rights Agreement. The 2004 Snake River Water Rights Agreement also allows for the United States to rent up to 60,000 acre feet of consumptive natural flow water rights through the Board's water bank in accordance with state law. The Board acquired the natural flow water rights of the Bell Rapid's irrigation project and is leasing a portion of those water rights to the U.S. Bureau of Reclamation to provide the 60,000 acre feet of natural flow water. The rental agreement provides that "protection of the Leased Water . . . will result in the protection of 48,320 acre-feet during the period of April 10 through August 31 of each year for the term of the Agreement."

The state agreed to the implementation of the flow augmentation program for the term of the Biological Opinion as a means of protecting existing water rights and uses and providing for economic stability. It is important, however, that evaluation of the efficacy of flow augmentation be conducted in conjunction and/or cooperation with other State and Federal agencies and regional interests.

Hells Canyon National Recreation Area~~:~~

The early controversy over the development of Hells Canyon gave rise to emerging concerns about the preservation of the region's natural features and ultimately led to enactment of the Hells Canyon National Recreation Area Act of 1975, which precluded future hydropower development in the Hells Canyon reach of the Snake River. The Act also designated the Snake River as "wild" (Hells Canyon Dam to Pittsburg Landing) and "scenic" (Pittsburg Landing to 37 miles south of Lewiston) to preserve the free-flowing character and unique environment while providing for continued public use. While providing protection to these important resources, the Act also protects present and future uses of the waters of the Snake River for consumptive or

non-consumptive beneficial uses, including domestic, municipal, stock water, irrigation, mining, power, and industrial uses. The Act specifically provides that no flow requirements of any kind may be imposed on the waters of the Snake River below Hells Canyon Dam under the provisions of the Act, or any rules, regulations, or guidelines adopted pursuant to the Act. Pursuant to an agreement between the state and the federal government, the United States' federal reserved water rights associated with the HCNRA are limited to the tributary streams of the Snake River within the HCNRA. The decrees quantifying the federal reserved water rights on streams tributary to the main stem Snake River contain subordination provisions that protect existing rights and allow for a limited amount of future development on the tributary streams.

Owyhee Initiative

In 2009, Congress enacted the Owyhee Public Land Management Act, Pub. L. 111-11, 123 Stat. 1037. This Act set aside certain lands in southwestern Idaho as wilderness. The Act was the result of a collaborative effort initiated by the Owyhee County Commissioners to resolve decades-old land management issues in Owyhee County. The goal was to develop and implement a landscape-scale program that preserves the natural character of the area while providing for economic stability and growth. Central to local support for enactment of the Act was the 2006 Owyhee Initiative Water Rights Agreement ~~(2006 Agreement)~~, which provided for a balance between instream and out-of-stream water uses within the Owyhee River Basin. The 2006 Agreement recognizes the ecological importance of stream and river flows in this arid region and recognizes local citizens' desire to maintain and protect their current way and quality of life. The 2006 Agreement calls for memorializing this balance through subordination language in the decreed federal reserved water rights for the designation of river segments that sets aside a certain amount of water for future development. The Agreement was signed by a local collaborative group that included ranchers, conservationists, landowners, business interests, outfitters, and off-road recreationists. Implementation of this water rights agreement will provide additional fish and wildlife benefits for the Owyhee River Basin.

Implementation Strategies:

- Maintain existing minimum stream flows and evaluate the need for additional minimum stream flows ~~set forth in Policy 4A for Snake River fish, wildlife, recreation, and scenic values~~.
- Ensure the flow augmentation plan of the 2004 Snake River Water Rights Agreement is implemented consistent with the Agreement.
- In conjunction and/or cooperation with other s~~S~~tate and f~~F~~ederal agencies and regional interests, evaluate the efficacy of the flow augmentation program.
- Ensure the federal reserved water rights decreed as part of the implementation of the Owyhee Public Land Management Act contain subordination provisions consistent with the 2006 Owyhee Initiative Water Rights Agreement.
- Ensure new appropriations of water are consistent with the subordination provisions of the reserved water rights for the HCNRA~~ells Canyon National Recreation Area~~ and the Owyhee wild and scenic rivers.

Milestones:

- Minimum stream flows maintained and new minimum stream flows are established as needed.
- Snake River flow augmentation is conducted in accordance with the terms of the 2004 Snake River Water Rights Agreement.
- Flow augmentation evaluation studies underway or completed.
- Federal reserved water rights decreed for Owyhee wild and scenic rivers contain subordination provisions consistent with the 2006 Owyhee Water Rights Agreement.
- New appropriations of water in the streams tributary to the Snake River within the Hells Canyon National Recreation Area satisfy the subordination requirements contained in the federal reserved water right decrees.

New appropriations within the Owyhee River Basin satisfy the subordination requirements contained in the federal reserved water right decrees for the Owyhee wild and scenic river reaches.

5A - BEAR RIVER COMPACT IN THE BEAR RIVER BASIN

Water use and management in the Bear River Basin shall conform to the allocations agreed to in the Bear River Compact.

Discussion:
The original Bear River Compact was signed into law on March 17, 1958, and amended on February 8, 1980. Idaho Code § 42-3402. The Compact was negotiated to provide for the efficient use of water for multiple purposes, to permit additional development, to promote interstate comity, and to accomplish the equitable apportionment of the waters of the Bear River among Idaho, Utah, and Wyoming. Water allocations for the Bear River Basin were adopted in 1978. The Compact is administered by an interstate administrative agency, the Bear River Commission, which is comprised of three members from each state and a non-voting federal chairman. The Bear River Commission must review the Compact at intervals of not less than twenty years and may propose amendments.

The Compact divides the Bear River into three divisions and treats allocation differently in each. The Upper Division of the river extends from its source in the Uinta Mountains, to and including Pixley Dam Wyoming. The Central Division includes the portion of the Bear River from Pixley Dam to, and including Stewart Dam. The Lower Division of the Bear River includes the flow from Stewart Dam to the Great Salt Lake and encompasses Bear Lake and its tributary drainage. The Compact makes allocations for the diversions of surface water, the storage of water above Bear Lake, ground water depletion, and future development. The allocation provisions for the three divisions of the Bear River apply only during times of shortage.

Idaho and Utah are implementing conjunctive management of surface and ground water. Idaho's Bear River Conjunctive Management Plan guides the development of ground water in the Bear River Ground Water Management Area. Although initial estimates of ground water depletions in the Lower Division indicate equal depletions in Idaho and Utah, the Idaho Water Resource Board encourages the Bear River Commission to prioritize additional studies to determine the effects of ground water use on the Bear River system.

Implementation Strategies:

- Encourage and assist the Bear River Commission to initiate further study and consideration of the effects of ground water use on Bear River surface flow.
- Ongoing review of Bear River Compact implementation and related issues, including depletion calculation procedures.

Milestones:

- Studies completed on the interaction between ground water and surface water in the Bear River Basin.

5B - BEAR RIVER BASIN WATER MANAGEMENT IN THE BEAR RIVER BASIN

The Idaho Water Resource Board supports enhancing water supplies, increasing water use efficiency, and implementing water supply bank mechanisms to help meet future water needs in the Bear River Basin.

Discussion:
The Bear River Compact designates how the undeveloped water supplies of the Bear River are to be allocated among Idaho, Utah, and Wyoming. The Compact allocates a first right to development and depletion of water not currently allocated in the Lower Division to Idaho, in the amount of 125,000 acre feet. In addition to the efficient use of existing developed water supplies, the state should move forward with the development of Idaho's depletion allocations as provided for in the Compact.

Ground water is available for development, but its development cannot injure existing senior water rights. In 2001, the Department of Water Resources established the Bear River Ground Water Management Area and created an advisory committee to provide guidance in the preparation of a ground water management plan. The Bear River Ground Water Management Plan, adopted in 2003, provides for managing the effects of ground water withdrawals to accommodate projected growth and water demand in the Bear River Basin, while protecting senior priority surface and ground water rights from injury. In addition to the use of mitigation plans that protect existing rights, the plan encourages flexible strategies for making water available for new development including new surface storage, ground water recharge projects, and transfers of existing rights through water banking and other marketing mechanisms. The ground water management plan encourages the wise use of available water supplies and continues the involvement of a local advisory committee in the development of management policies for the area. To address declining ground water levels, the Bear River Basin has been designated as a priority basin for the development and implementation of a comprehensive aquifer management plan.

Idaho Code § 42-1765 authorizes the Idaho Water Resource Board to create a local rental pool to facilitate marketing of stored water. A Bear River rental pool would provide the advantage of being locally managed and controlled, with the flexibility to develop specific procedures designed to address special conditions existing in the basin. Use of water supply banks also provides protection from forfeiture for unused water rights in Idaho and a source of funding for improving water management. Cooperation between Idaho, Utah, and PacifiCorp will be required to establish a storage rental pool for Bear Lake.

Implementation Strategies:
- Initiate further discussion concerning the development of a Bear River storage water rental pool with the Bear River Commission, Utah, and PacifiCorp.
- Develop strategies to improve water supplies and reduce demand through the implementation of a comprehensive aquifer management plan, in coordination with Utah, Wyoming, and PacifiCorp.

Milestones:
- Bear River Basin comprehensive aquifer management planning underway.

- Strategies developed to meet future water needs.
- Local storage rental pool established.
- Development of Idaho's depletion allocation.

5C - INTERSTATE WATER DELIVERY IN THE BEAR RIVER BASIN

Idaho water users in the Lower Division of the Bear River Basin must be protected from inequitable water allocation in the event of a water emergency and the scheduling of interstate water deliveries.

Discussion:
The Bear River Compact authorizes the Bear River Commission to implement a water delivery schedule in the Lower Division without regard to state boundaries if the Bear River Commission finds that a "water emergency" exists. Idaho Code § 42-3402. This provision was intended to apply only to true emergency conditions which must be determined using comprehensive accounting processes. Idaho and Utah have developed separate, but similar water accounting models that incorporate the rights identified in the Commission Approved Lower Division Water Delivery Schedule. Absent a water emergency, Idaho water users are not required to accept delivery based upon interstate accounting allocation. Both states, however, have worked to reconcile their respective accounting models to reduce conflict over water delivery.

The "Bear Lake Settlement Agreement" was signed and voluntarily adopted by Lower Division water users and PacifiCorp in 1995 and amended in 2004. The agreement established, among other things, an "Irrigation Water Allocation and Lake Recovery Proposal" for Bear Lake. The proposal provides for an "Annual Allocation" which represents the total, estimated quantity of water available to be delivered to storage contract holders. This agreement and the state water accounting models have resulted in a process by which Lower Division water users have voluntarily agreed to water delivery by water right priority without regard to state boundaries.

Implementation Strategies:
- Continue work with Utah and Lower Division water users to improve water right accounting models.
- Facilitate and promote improved water delivery and measurement, including gage and diversion automation.

Milestones:
- Continued cooperation in interstate water administration.
- Completion of technical upgrades to water delivery and measurement infrastructure.

5D - BEAR LAKE IN THE BEAR RIVER BASIN

The outstanding recreational, aesthetic, and fish and wildlife resource values of Bear Lake should be preserved, while recognizing the existing storage allocations for irrigation and hydroelectric power generation.

Discussion:
Bear Lake, noted for its unique coloration and endemic fish species, provides an abundance of recreational opportunities. To protect these values, the Idaho Water Resource Board obtained a minimum lake level water right for Bear Lake of 5902 feet.

The 2004 Amended and Restated Bear Lake Settlement Agreement between PacifiCorp and several water users and private interests confirmed that Bear Lake must be operated primarily as a storage reservoir to satisfy contracts for existing irrigation uses and flood control needs in the three states, with the use of water for hydropower generation being incidental to other purposes. Bear Lake storage is allocated based on lake elevation with reduced allocations occurring when Bear Lake falls below the irrigation reserve of 5914.7 feet. The settlement agreement also provides for a portion of the active storage in Bear Lake to be voluntarily retained to enhance recreation and water quality values.

Pursuant to the 2002 Settlement Agreement Resolving the Relicensing of the Bear River Hydroelectric Projects and the Federal Energy Regulatory Commission licenses issued for PacifiCorp's Bear River projects, protection, mitigation, and enhancement measures are being implemented to benefit fish and wildlife and recreational resources in the Bear River Basin. The settlement agreement established a committee to guide implementation of these measures, with a primary focus on protecting and improving habitat for Bonneville Cutthroat Trout. The settlement agreement confirms that PacifiCorp's ability to regulate Bear Lake reservoir levels and provide instream flows at the projects for these purposes is restricted by and subject to historic practices, water rights, and flood control responsibilities that are memorialized in water contracts, water agreements, and judicial decrees and opinions.

The Bear River Compact provides for cooperation with state and federal agencies in matters relating to water pollution of interstate significance. The Idaho Water Resource Board supports the Bear River Commission's efforts to develop opportunities for more integrated watershed management throughout the basin.

Implementation Strategies:

- Cooperate with the Bear River Commission to address interstate issues of concern related to Bear Lake, including water quality, threatened or endangered species and species of special concern, and recreation.

Milestones:

- Bear Lake operations are consistent with 2003 Bear Lake Settlement Agreement.

- Cooperative programs addressing interstate issues of concern related to water quality, recreation, and sensitive species implemented.

SALMON/CLEARWATER RIVER BASINS

6A - CONSERVATION PLANS IN THE SALMON/CLEARWATER RIVER BASINS

Voluntary, community-based conservation plans and strategies for the benefit of ESA-listed species and other species of concern are key components of water planning and management in the Salmon and Clearwater River Basins.

Discussion:
The Salmon and Clearwater River basins support a thriving agricultural industry and significant tourism. Because a number of fish species in the Salmon and Clearwater River basins have been listed as threatened or endangered under the ESA, numerous programs are being implemented to improve fish habitat, while protecting existing water rights. A significant portion of freshwater habitat important to ESA-listed fish is located on private lands. As a consequence, local support is key to implementing conservation measures that advance species' recovery. Federal agencies are encouraged to cooperate with state and local landowners to develop voluntary, incentive-based conservation plans. Any water required for instream uses must be obtained in compliance with state law.

In the Snake River Basin Adjudication, the state entered into two agreements that provide for water management within the basin that supports agricultural-based communities, while encouraging the voluntary implementation of flow-related conservation measures that improve instream conditions for ESA-listed fish. The agreements are based upon improving instream flow conditions pursuant to state law.

- **Snake River Water Rights Agreement of 2004**

The Snake River Water Rights Agreement of 2004 resolved all of the issues related to the Nez Perce Tribe's water right claims in the Snake River Basin Adjudication. In the Salmon and Clearwater basins, the primary goal of the settlement agreement provisions is to conserve and enhance fish habitat in order to address ESA concerns. There are three cornerstones to such efforts: the establishment of state minimum flows, the establishment of a voluntary forestry program with standards to improve fish habitat, and the establishment of voluntary programs by irrigators and other water users to improve instream flow.

The state and local water users are working with the federal agencies, tribes, and other stakeholders to advance the recovery of listed species through the development of conservation agreements under Section 6 of the ESA. In coordination with the Office of Species Conservation, the state has begun early implementation of voluntary conservation measures that provide immediate benefits to ESA-listed fish and provide the foundation for implementation of long-range plans.

As a result of the Snake River Water Rights Agreement, the Idaho Water Resource Board holds minimum stream flow water rights on 205 streams that provide significant protection for steelhead, salmon, and bull trout. Most of the streams flow through federal public lands and have minimal use. Twenty-four streams, however, are in basins with substantial private ownership and significant private water use. The flows for those streams were established after consultation with local communities. Where the minimum stream flow water rights are higher than existing flows, the Idaho Water Resource Board works with water users on a voluntary basis to rent or otherwise acquire water to return to streams, in accordance with state law.

- **Wild and Scenic Rivers Agreement**

The Wild and Scenic Rivers Agreement resolved issues related to federal reserved water right claims filed by the federal government under the Wild and Scenic Rivers Act. The agreement provides for the quantification of the wild and scenic federal reserved water rights and state administration of those rights. To protect existing rights and allow for some future development, the United States agreed to subordinate the federal rights to certain junior priority state and private rights and to a sum certain of future junior rights.

Implementation Strategies

- Ensure that the water right application review process considers basin conservation plans and limiting factors for ESA-listed fish.
- Ensure that the stream channel alteration permit process considers basin conservation plans and limiting factors for ESA-listed fish.
- Develop flow-limited reach GIS maps for use in water administration.
- Continue early implementation of conservation measures.
- Develop and implement conservation projects and plans based on local problem-solving and support.

Milestones

- Conservation measures implemented.
- Conservation plans approved pursuant to Section 6 of the ESA and implemented.
- Approved water right transfers address limiting factors for ESA-listed fish.
- Water right permits address limiting factors for ESA-listed fish.
- Flow-limited reach GIS maps completed and in use.

6B - INSTREAM FLOW PROGRAM IN THE SALMON/CLEARWATER RIVER BASINS

The Idaho Water Resource Board will promote, provide, and where possible, expand opportunities for voluntary, market-based transactions to improve instream flow for the benefit of ESA-listed aquatic species.

Discussion:
The Idaho Water Resource Board administers and participates in a variety of programs to improve instream flows throughout the Salmon and Clearwater River basins. This programmatic approach to addressing the needs of ESA-listed and other sensitive species includes a suite of water supply acquisition tools including short and long-term leases, permanent purchases, partial season leases, diversion reduction agreements, and water use efficiency measures, all of which are market-based and voluntary. The Idaho Water Resource Board works collaboratively with organizations committed to voluntary, market-based conservation strategies, such as conservation easements, to maximize instream flow programs. These partnerships benefit targeted fish species and support local economies.

- **Columbia Basin Water Transaction Program**

The Columbia Basin Water Transactions Program was initiated in 2002 to support innovative, voluntary, grassroots strategies to improve flows in the Columbia River Basin's streams and rivers. The majority of funding is provided by the Bonneville Power Administration in cooperation with the Northwest Power and Conservation Council. It is in the public interest to continue implementation of the Columbia Basin Water Transactions Program in the Salmon and Clearwater basins to keep agriculture productive and improve instream flows for ESA-listed and other sensitive fish species.

- **Section 6 Habitat Conservation Fund**

Section 6 of the ESA directs "that Federal agencies shall cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species." 16 U.S.C.A. § 1531(C)(2). Pursuant to the Snake River Water Rights Agreement of 2004, in addition to the establishment of minimum stream flow water rights, the state agreed to work with local stakeholders and communities to develop work plans for addressing limiting factors for fish on streams with degraded habitat. The state also agreed to develop cooperative agreements under Section 6 of the ESA with the assistance of local land owners, federal agencies, and tribes to establish long-term conservation goals and conservation measures that will contribute to the recovery of anadromous and resident fish in the Upper Salmon River Basin. The Idaho Water Resource Board's instream flow programs are central to the development and implementation of Section 6 Conservation Plans.

- **Pacific Coast Salmon Restoration Fund**

The Pacific Coast Salmon Restoration Fund provides grants to state agencies and treaty Indian tribes for salmon recovery efforts. The Idaho Water Resource Board works with agencies, tribes, and

stakeholders to use Pacific Coast Salmon Restoration Fund monies for early implementation of conservation measures in the basins.

- **2008 Columbia Basin Fish Accords**

The Columbia Basin Fish Accords are designed to supplement biological opinions for listed salmon and steelhead and the Northwest Power and Conservation Council's fish and wildlife program. The agreement between the State of Idaho, the Bonneville Power Administration, the U.S. Army Corps of Engineers, and the U.S. Bureau of Reclamation addresses issues associated with the direct and indirect effects of construction, inundation, operation and maintenance of the Federal Columbia River Power System, and Reclamation's Upper Snake River Project on the fish and wildlife resources in the Columbia River Basin.

Under the agreement, the Bonneville Power Administration committed to funding a suite of habitat quality improvement projects designed to address limiting factors within the basins affecting ESA-listed salmon and steelhead. The Idaho Water Resource Board uses these funds to develop projects that improve instream flow and freshwater survival of ESA-listed salmon and steelhead. The program targets flow-related projects that reconnect tributaries and increase flow in the mainstem Lemhi and Pashimeroi Rivers to improve fish passage conditions and increase the quantity and quality of fish habitat.

Implementation Strategies:

- Continue implementation of programs to improve instream flows in the Salmon and Clearwater River basins.
- Pursue opportunities for partnerships with local water users and other stakeholders to implement programs that improve instream flows and support local economies.

Milestones:

- Number and scope of instream flow improvement projects implemented.
- Number of participants in instream flow improvement projects.
- Degree of habitat improvement resulting from instream flow programs.

PANHANDLE RIVER BASINS

7A - INTERSTATE AQUIFERS IN THE PANHANDLE RIVER BASINS

Completion of comprehensive aquifer management plans and the Northern Idaho Adjudication and implementation of interstate agreements are central to the optimum use of the Panhandle Basin's water resources.

Discussion:
The Panhandle's rivers and lakes are key to continued economic development and provide for multiple uses of water including irrigation, domestic supplies, mining, and commercial uses. These lakes and rivers also provide significant recreation, fish and wildlife, and aesthetic resources important for the region's economy. In average water years, Idaho's Panhandle region has ~~an abundant~~ stable water supply. A growing population and the urbanization of agricultural lands, however, have resulted in increased ground water use which has resulted in conflicts over water quantity and quality within the region and across state boundaries.

- **Spokane Valley-Rathdrum Prairie Aquifer**

The Rathdrum Prairie Aquifer (RPA) extends south from Bonner County through Kootenai County toward the cities of Coeur d'Alene and Post Falls and west to the Idaho-Washington state line. The aquifer extends into Washington and becomes part of the larger Spokane Valley-Rathdrum Prairie (SVRP) Aquifer. The area includes the rapidly growing cities of Spokane, Washington and Coeur d'Alene and Post Falls, Idaho. The SVRP Aquifer was designated a "Sole Source Aquifer" by the U.S. Environmental Protection Agency in 1978 and a sensitive source aquifer by the state of Idaho.

In 2002, the Director of the Idaho Department of Water Resources , pursuant to Idaho Code § 42-233b, designated the Rathdrum Prairie Ground Water Management Area and created the Rathdrum Prairie Ground Water Management Area Advisory Committee, composed of members representing the interests of citizen groups, municipalities, counties, and other irrigation, commercial, and industrial water users within the designated area. On September 15, 2005, the Director issued a final order adopting the Ground Water Management Plan for the Rathdrum Prairie Ground Water Management Area. The plan, based in large part on the recommendations of the advisory committee, sets forth goals, strategies, and actions for managing the ground water resources of the SVRP Aquifer. Goals include obtaining adequate technical data and quantification of water availability and water use, managing the ground water resource efficiently and fairly for all users, and encouraging planning and water conservation efforts.

Although the states of Idaho and Washington have primary responsibility for water allocation and water quality, local governments are increasingly being called upon to consider water supply and water quality implications in land use planning. To address these challenges, a study of the SVRP Aquifer was conducted jointly by the Idaho Department of Water Resources, the Washington State Department of Ecology, and the United States Geological Service. Begun in 2003 with broad community support, the purpose of the project is to provide a scientific foundation to assist the states

in water administration. The SVRP Aquifer study established a collaborative modeling committee of experts from both states. Significant new information from the study refined earlier estimates of hydrologic information. The data, computer model, water budget, and other information are available to the public and provide a detailed, up-to-date basis for assessing all aspects of ground water use, including water development, establishing well head protection zones, and local and regional land use planning. A 2007 agreement between the Idaho Department of Water Resources and the Washington State Department of Ecology establishes a collaborative framework to maintain and enhance the model to inform state management decisions.

Pursuant to Idaho Code § 42-1779, which established the Statewide Comprehensive Aquifer Planning and Management Program, a comprehensive aquifer management plan was adopted on July 29, 2011 for the Rathdrum Prairie Aquifer by the Idaho Water Resource Board. The Idaho Water Resource Board will be responsible for implementing the plan to obtain sustainable water supplies and optimum use of the region's water resources.

- **Palouse Basin Aquifers**

The development of a comprehensive aquifer management plan for the Palouse Basin is also a priority. The Grande Ronde and Wanapum aquifers underlie the Palouse Basin. The Pullman-Moscow area of eastern Washington and northern Idaho relies almost entirely on ground water for its supply of municipal, institutional, and domestic water. The Palouse Basin Aquifer Committee consists of representatives from the cities of Moscow, Pullman, Colfax, Latah, and Whitman counties, the University of Idaho and Washington State University and was formed to address concerns about declining ground water levels and coordinate studies to further inform water management decisions. In 1992, with the assistance of the states and pursuant to several intergovernmental agreements, a Pullman-Moscow Ground Water Management Plan was completed. The plan provides technical information about the general response of the Wanapum and Grande Ronde aquifers to pumping withdrawals and recommendations for future use that limit ground water depletion and protect water quality through conservation practices and other measures. Additional studies are needed to better understand the hydrology of the aquifers.

Managing cross-boundary conflicts requires an accounting of the state's water resources. Adjudication of water rights in the Panhandle region should therefore be completed to fully define and quantify existing water rights. The determination of all existing water rights from the river basins in northern Idaho will provide the basis for administration of water rights in accordance with the prior appropriation doctrine, as established by law, and for interstate cooperation. Pursuant to Idaho Code § 42-1406B, the Director of the Idaho Department of Water Resources filed a petition in the district court to commence an adjudication for northern Idaho. On November 12, 2008, the district court ordered the commencement of adjudication in the Coeur d'Alene Spokane River water system. The estimated date for completion of the adjudication is ~~2012~~Fiscal Year 2018.

Idaho Code § 42-1734(3) authorizes the Idaho Water Resource Board to appear on behalf of the state in negotiations with the federal government. Consistent with state law, the Idaho Water Resource Board should serve as the lead agency for coordinating state participation in the Northern Idaho Adjudication.

Implementation Strategies:

- Implement the comprehensive aquifer management plan for the Rathdrum Prairie.
- Evaluate timing for developing a comprehensive aquifer management plan for the Palouse River basin that establish goals, objectives, and strategies to address the increasing demand on water supplies, reduce cross-boundary conflicts, and provide for effective conjunctive management of hydraulically connected water resources.
- Complete the Northern Idaho Adjudication.
- Implement and maintain the cooperative agreement between Idaho and Washington for maintenance of the SVRP Aquifer ground water model.
- Advise and provide technical support to Palouse Basin Aquifer Committee and other stakeholders to promote the wise use of the region's water supply.
- Provide technical support for the completion of aquifer studies that will assist in water management.

Milestones:

- Cooperative agreements approved and implemented by Idaho and Washington.
- Implementation of Rathdrum Prairie comprehensive aquifer management plan action items.
- Development and implementation of Palouse comprehensive aquifer management. Northern Idaho Adjudication completed.
- Aquifer studies completed.

7B - MINIMUM STREAM FLOWS IN THE PANHANDLE RIVER BASINS

The Idaho Water Resource Board will establish and protect minimum stream flow and lake level water rights to preserve the scenic and recreational water bodies in the Panhandle river basins.

Discussion:
The Panhandle contains some of the most significant scenic and recreational water bodies in the state. The Idaho Water Resource Board holds 19 minimum stream flow water rights on reaches of the Pend Oreille, St. Maries, Pack, Moyie, St. Joe, Coeur d'Alene, and Spokane rivers that protect approximately 17,600 cfs total flow. In 1927, the state established minimum lake levels for Priest, Pend Oreille and Coeur d'Alene lakes. These water rights protect and support many beneficial uses of water such as fish and wildlife habitat, aquatic life, recreation and aesthetic values, and navigation in the Panhandle basins and make a significant contribution to the economy of the region and the state.

Population growth and new water demands may increase the need to obtain additional minimum stream flows in the Panhandle region. The establishment and use of local water supply banks and rental pools should be considered as a strategy for addressing the need for meeting minimum stream flow water rights or new rights in the Panhandle region, including minimum lake levels for the protection of navigation and transportation, fish and aquatic resources, and aesthetic and recreational values.

Implementation Strategies:
- Coordinate with state and federal agencies and stakeholders to identify potential minimum stream flow needs.
- Submit applications for minimum stream flow water rights that are in the public interest.
- Monitor activities that could impair minimum stream flows.
- Evaluate the need for establishment of local water supply banks.

Milestones:
- Minimum stream flow water rights established.

7C - NAVIGATION, FISHERIES, AND RECREATION IN THE PANHANDLE RIVER BASINS

Water management decisions in the Panhandle Region should minimize, where feasible, adverse effects on navigation, fisheries, and recreation.

Discussion:
The Panhandle's lakes and rivers provide for commercial and recreational navigation and important habitat for numerous fish and wildlife species. These resources are also affected by the operation of private and federal hydropower projects. Avista's Clark Fork projects, located in Montana and Idaho, are operated pursuant to a Federal Energy Regulatory Commission license based upon a comprehensive settlement agreement executed by Idaho, Montana, federal agencies and Indian tribes, and other stakeholders. The Post Falls project license is also based, in part, upon a settlement agreement between Avista, the Idaho Department of Fish and Game and the Idaho Department of Parks and Recreation. The Post Falls license requires a summer full-pool elevation and fall draw-down protocol for Lake Couer d'Alene that is protective of fishery needs, while providing adequate lake levels for summer recreation activities and navigation.

On the Pend Oreille River, the U.S. Army Corp of Engineers operates Albeni Falls Dam, which controls the level of Lake Pend Oreille. Lake Pend Oreille has been designated a Special Resource Water, a special body of water recognized by the state as needing intensive protection. Since 1996, consistent with a U.S. Fish and Wildlife Service Biological Opinion on the operation of the Federal Columbia River Power System, winter lake levels have been managed for the protection of the lake's kokanee population, an important forage base for ESA-listed bull trout. Winter lake level management also directly affects the amount of erosion and sedimentation that occurs, waterfowl habitat, water quality, navigation, and shoreline infrastructure. Cooperation between the state and federal government and community stakeholders is essential for making sound management decisions regarding the operation of Albeni Falls Dam.

In 2003, the Idaho legislature created the Lake Pend Oreille, Pend Oreille River, Priest Lake and Priest River Commission (Lakes Commission) to address water quantity and water quality issues affecting the state's and local communities' interests, while recognizing existing authorities. The Idaho Water Resource Board supports the Lakes Commission's participation in regional water management decisions and efforts to minimize adverse effects on navigation, water quality, and fish, wildlife, and recreational resources.

Implementation Strategies:

- Identify proposed actions that may affect navigation, water quality, and fish, wildlife, and recreation resources, in coordination with state and federal agencies and stakeholders.

- Provide technical assistance to assist the Lake Commission's participation in regional water management decisions.

Milestones:

- Collaborative water management decisions made that minimize adverse effects on navigation, water quality, and fish, wildlife, and recreational resources.