Eastern Snake River Plain Aquifer (ESPA)

DRAFT

Comprehensive Aquifer Management Plan

Presented For Public Comment

by the

Idaho Water Resource Board

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ACRONYMS

CAMP	Comprehensive Aquifer Management Plan
cfs	Cubic feet per second
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
ESPA	Eastern Snake River Plain Aquifer or Eastern Snake Plain Aquifer
IDWR	Idaho Department of Water Resources
IWRB	Idaho Water Resource Board (also abbreviated as "Board")
kaf	Thousand acre-feet
M&E	Monitoring and Evaluation
TEMP	Temperature Enhancement Management Program
EQIP	Environmental Quality Incentive Program

INTRODUCTION

This document presents a Comprehensive Aquifer Management Plan (CAMP) for the Eastern Snake Plain Aquifer (ESPA), as directed and funded by the Idaho Legislature. At the direction of the Governor and the Idaho Water Resource Board, the CAMP was developed collaboratively by the ESPA Advisory Committee (Committee).

1.0 EXECUTIVE SUMMARY

The CAMP sets forth a long-term plan for managing water supply and demand in the ESPA and a phased approach to implementation. The CAMP hydrologic vision is to achieve, in increments, a net ESPA water budget change of 600 thousand acre-feet (kaf) annually. It is expected that this hydrologic goal can be achieved by the year 2030 through implementation of a mix of management measures including, but not limited to, aquifer recharge, ground-to-surface water conversions, and demand reduction strategies. The intent of the CAMP is to guide actions which stabilize and improve spring flows, aquifer levels, and river reaches across the Eastern Snake Plain. Without immediate CAMP implementation, the State of Idaho will delay management of the resource and accomplishment of the goal and objectives agreed upon in the ESPA CAMP Framework adopted during the 2007 legislative session. Delaying the CAMP implementation will result in the further decline of the resource, requiring more time, cost and effort to improve conditions.

The Committee proposes approaching the 600 kaf target in phases. The CAMP Phase I (1–10 years) hydrologic target is a water budget change between 200 kaf and 300 kaf. Committee recommendations for Phase I include site-specific implementation actions based on the expected hydrologic effect of those actions, as outlined in Section 3.2.1. The recommended water budget adjustment actions include:

A. Ground water to surface water conversions

B. Managed aquifer recharge

C. Demand reduction

1. Buyouts, buy-downs and/or subordination agreements
2. Rotating fallowing, dry-year lease agreements and CREP enhancements
3. Crop mix modification in the Aberdeen/Bingham groundwater district
4. Surface water conversion measures

D. Pilot weather modification program

E. Minimizing loss of incidental recharge

To ensure that all stakeholders participate in the implementation of Phase I as outlined in Section 3.2.1. and the design of subsequent phases, the Committee recommends the establishment of a CAMP Implementation Committee. This committee will provide recommendations to the Board concerning Phase I implementation, definition of subsequent phases, and coordination of activities necessary for implementation. This committee will also evaluate the effectiveness and viability of continuing CAMP implementation during Phase I. The Implementation Committee will include representation, at a minimum, from all interest groups currently represented on the ESPA Advisory Committee.

Although the CAMP is built upon a substantial base of technical information and knowledge, it is recognized that present-day solutions may be refined and improved as new information and technologies are developed. Accordingly, the CAMP includes an adaptive management component discussed in Section 4.0 which requires ongoing coordination between the Board staff and the proposed CAMP Implementation Committee. The Committee recommends continued effort to identify and address all water use needs affected by this plan, including integration of environmental considerations in decision making (see **Environmental Sub-Committee Report at www.espaplan.idaho.gov).**

Full implementation of Phase I (10 years) is estimated to cost between $70 million - $100 million, or an estimated cost of $7 - 10 million annually. Subsequent phases and funding needs, will be recommended by the Implementation Committee to the Board. The Committee recommends that implementation funding come from ESPA water users, state and federal sources, as well as private

sources. This plan is not designed to provide mitigation credit for any individual group, although it is expected that CAMP implementation will reduce the demand for administrative solutions.

2.0 BACKGROUND

In response to declining aquifer and Snake River levels that resulted in insufficient water supplies to satisfy existing beneficial uses, the Idaho Legislature passed Idaho Senate Concurrent Resolution No.136 in April 2006, and requested that the Board prepare and submit a Comprehensive Aquifer Management Plan for the ESPA. From the beginning, CAMP development took place in a public forum. After a series of public meetings with stakeholders, the Board presented the ESPA CAMP Framework (Framework) to the Legislature on February 14, 2007.

The Framework recognizes that supply of and demands for water are out of balance in the Eastern Snake River Plain and the connected Snake River, making more deliberate and coordinated management of surface waters of the Snake River and the underground waters of the ESPA a necessity. The Framework sets forth the overarching goal and objectives adopted by the Board for the management of the ESPA.

As stated in the Framework, the goal of the CAMP is to:

> "*Sustain the economic viability and social and environmental health of the Eastern Snake Plain by adaptively managing a balance between water use and supplies.*"

The objectives of the CAMP are to:

1) Increase predictability for water users by managing for reliable supply
2) Create alternatives to administrative curtailment

3) Manage overall demand for water within the Eastern Snake Plain
4) Increase recharge to the aquifer
5) Reduce withdrawals from the aquifer

The Framework outlined a process for development of the CAMP that called for an advisory committee to prepare and recommend a plan to the Board. To that end, and pursuant to House Bill 320, the Board and Governor Otter appointed stakeholder representatives to the ESPA Advisory Committee (see **Appendix A**). Beginning in May 2007, the Committee held monthly meetings. To ensure the process was transparent and inclusive, all meetings were open to the public and all related materials were posted on the ESPA website (www.espaplan.idaho.gov). In February 2008, the Board, with Committee recommendations, provided a Progress Report to the Natural Resources Interim Legislative Committee to share progress and outline recommendations for initial water management measures (see **ESPA CAMP technical documents at www.espaplan.idaho.gov**). Since that time, the Board and Committee have worked to complete this CAMP for submission to the 2009 Legislature.

2.1 Management Alternative Analysis

Guided by the goal and objectives in the Framework, the Committee identified ways to manage available water supply and demand to address current and future water use needs including but not limited to those for irrigated agriculture, aquaculture, industry, hydropower, municipalities, real estate development, domestic users and to protect environmental values. The Committee conducted a comparative analysis to assess the potential effects of a range of management options, including:

- Managed and incidental recharge
- Groundwater to surface water conversions
- Demand reduction strategies
    - Conservation Reserve Enhancement Program (CREP)
    - Dry-year leasing

  - Crop mix changes
  - Buy-outs and subordination agreements
  - Water conservation measures
- Additional surface water storage[1]
- Weather modification
- Acquisition of water supplies below Milner Dam to meet Upper Snake River salmon flow augmentation obligations

Working with the Committee, the Idaho Department of Water Resources (Department) developed alternative packages comprising a mix of these management options and analyzed each to ascertain the effects on reach gains and aquifer levels. The Department studied a range of potential water budget changes between 300 kaf and 900 kaf (see **ESPA CAMP technical documents at www.espaplan.idaho.gov**). In addition, six packages of management strategies were examined to provide a comparison of the hydrologic benefit, economic consequences, and potential environmental impact of pursuing such actions.

2.2 CAMP Implementation Benefits

Water is a unifying and critical feature of the region. About one-third of Idaho's population resides on the Eastern Snake Plain. The aquifer is almost the sole source of drinking water for both cities and rural residents. Agriculture is the largest segment of the local economy and the largest consumptive user of water. There are roughly 2.1 million irrigated acres on the ESPA (about 60% of Idaho's total). Of the 2.1 million irrigated acres, 871,000 acres are irrigated from surface water, 889,000 acres are irrigated from ground water, and 348,000 acres are irrigated from both sources. Beyond irrigated agriculture, food processing and aquaculture facilities (both public and private) depend on an ample supply of ground water. Springs discharging from the ESPA also sustain fish and wildlife habitat and provide water quality benefits. Hydroelectric power generation, recreation, and fisheries are also dependent on river flows. Though small relative to agricultural uses, DCMI (domestic, commercial, municipal, industrial) water use is also increasing.

[1] The Idaho legislature and Board are evaluating the feasibility of additional surface water storage across the state in order to increase available water supply. Ongoing studies will outline the benefits, costs, alternatives and impacts of such projects.

Providing for these DCMI uses is vital to the future growth of state and local economies. Insert ESPA economic data from Idaho Dept of Commerce

Implementation of CAMP will work toward meeting the goal and objectives outlined in the Framework by:

- Improving aquifer levels (stabilization and potential enhancement)
- Increasing gains in some river reaches
- Increasing water supply certainty for all users
- Decreasing demand for litigation and administrative remedies
- Allowing for municipal and industrial growth
- Providing an ongoing public process for assessing the hydrologic, economic, and environmental issues related to the implementation of aquifer management strategies.

Implementation of the ESPA CAMP will also provide a template of a collaborative planning process that can be used in other regions in Idaho. In addition, proactive management of water supplies will help address variability in climatic conditions, including drought. The expected change in the water budget, resulting from implementation of the management plan, will address regional water supply needs and environmental concerns.

2.3 CAMP Consequences of Inaction

The continued viability of irrigated agriculture, aquaculture, industry, hydropower, municipalities, future development, domestic uses and environmental resources will be adversely impacted if the current water supply trends continue on the ESPA. Proactive measures, such as those identified and recommended for implementation, are expected to change these trends and help protect the economic viability of families, farms, and industries on the Eastern Snake Plain.

The Committee believes that without increased precipitation and an adaptive plan to manage a balance between water use and supply in the ESPA, the following scenarios are expected:

- An escalation of conflict between water users

- Increased litigation
- Increased likelihood of ground water curtailment
- Limited opportunities for community growth
- More expensive water for industries and increased power costs
- Adverse impact to the health of the state economy

Inaction will result in lost opportunities to create stability for water users. Without the additional infrastructure recommended by the CAMP, the region will not have the ability to take advantage of wet years and high flow. This could mean lost opportunities for municipal, industrial, and commercial growth. It could also mean increased vulnerability to changes in yearly supply, especially a problem as available water is stretched to cover more needs.

Finally, the State of Idaho stepped ahead of other states struggling with similar water issues by choosing to employ a collaborative approach to water management. The State has demonstrated leadership in convening the ESPA Advisory Committee. Now, it must continue to provide direction and financial support for CAMP implementation. All participants involved in the CAMP process put significant time and energy into educating each other about their concerns and learning how those with different interests are affected by water management decisions. They did so in the hope that their efforts would improve the ESPA.

3.0 CAMP RECOMMENDATIONS

3.1 *Long-Term Hydrologic Goal*

The Committee recommends working toward a 600 kaf average annual change to the aquifer water budget over the next twenty (20) years. A 600 kaf water budget change is considered an appropriate long-term goal considering present and future water needs, hydrologic impacts, and cost. It is estimated that full implementation of the 600 kaf package will cost more than $600 million over a twenty (20) year period. The recommended 600 kaf package represents a balanced approach to modifying the water budget as it adopts a mix of strategies. Specifically, the package includes aquifer recharge, groundwater to surface water conversions, and demand reduction

efforts. Careful consideration was given to the following factors in the development of this goal:

- Ability to target actions to accomplish specific hydrologic goals in specific locations;
- Timeframe and ease of implementation;
- Environmental and economic impacts; and
- Practicality, including financing and public and political acceptance.

The Committee recommends that the following management strategies be implemented over a twenty (20) year time period to effect a 600 kaf change in the annual water budget of the ESPA:

Ground Water to Surface Water Conversions	Approximately 100 kaf/year annual average (water supply provided by acquiring water supplies below Milner Dam to replace water required from the Upper Snake river for salmon flow augmentation) .
Aquifer Recharge	Approximately 150-250 kaf/year (using the IWRB natural flow water permit and storage water when available).
Demand Reduction	Approximately 250-350 kaf/year (voluntary mechanisms based on the principle of willing seller/willing buyer to reduce aquifer and spring flow demands, including CREP, purchases, subordination agreements, fallowing and crop mix changes, and other mechanisms).
Pilot Weather Modification Program	Implement a five-year pilot weather modification project in the Upper Snake River Basin and potentially the Wood River system, with state, local and other agency support. Include a detailed monitoring program for the weather modification program.

3.2 Phase I Hydrologic Targets

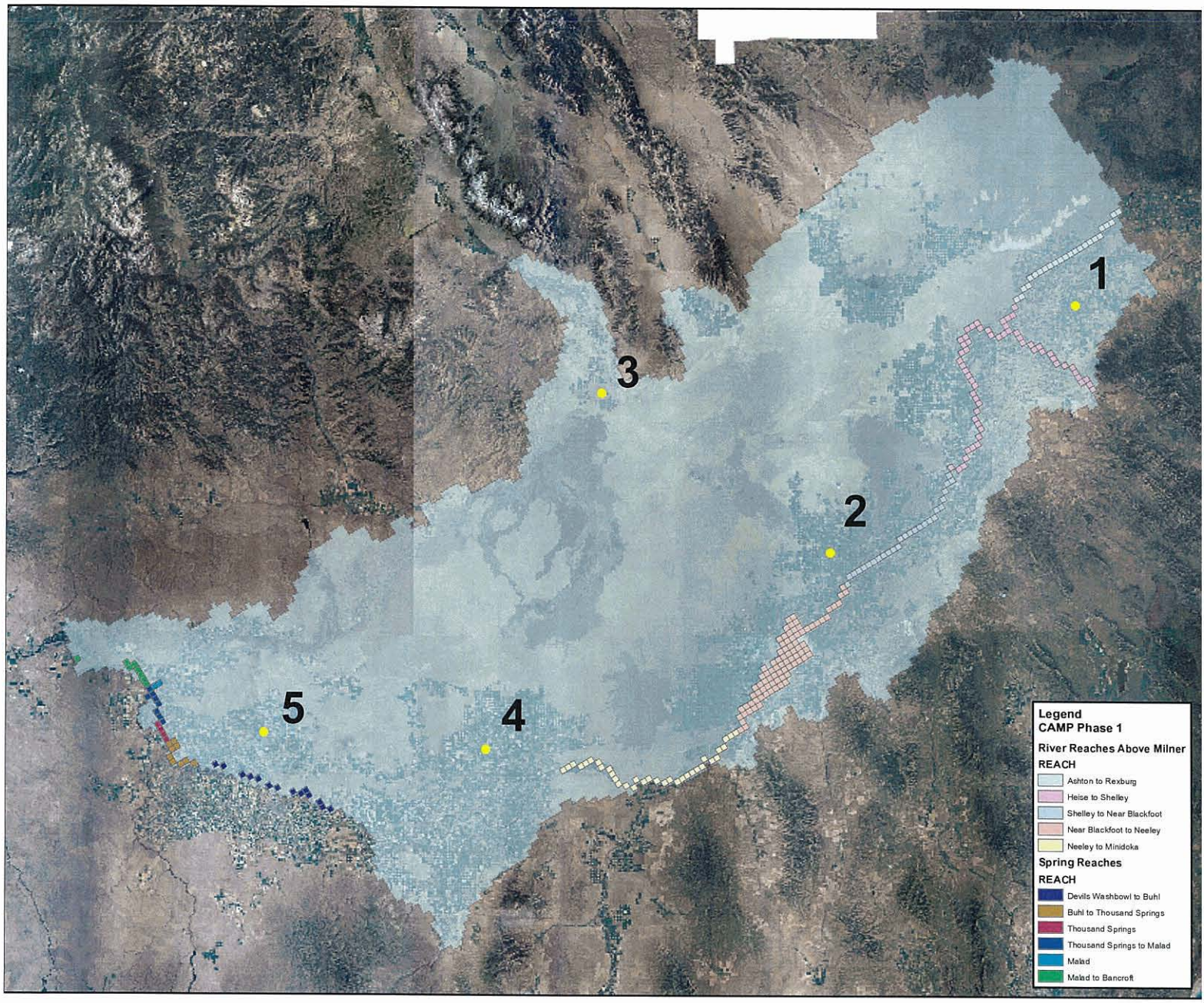
The Committee believes that the state should implement management measures that address aquifer, spring and river levels and contribute to long-term stakeholder cooperation. The Committee recommends that the measures outlined in Section 3.2.1 (Tables A-F) below be implemented over the next ten years, and provides suggestions for ensuring efficient implementation. Information on additional Committee recommendations to improve aquifer management, coordination and decision-making are included in Section 3.2.2.

The recommended CAMP Phase I (1 – 10 years) hydrologic target is an average annual water budget change between 200 kaf and 300 kaf. Hydrologic analysis of Phase I implementation demonstrates significant hydrologic benefit across the ESPA. Committee recommendations for Phase I include site-specific implementation actions and the expected hydrologic effect of those actions. While implementing Phase I it will be important to identify unintended adverse consequences of such actions.

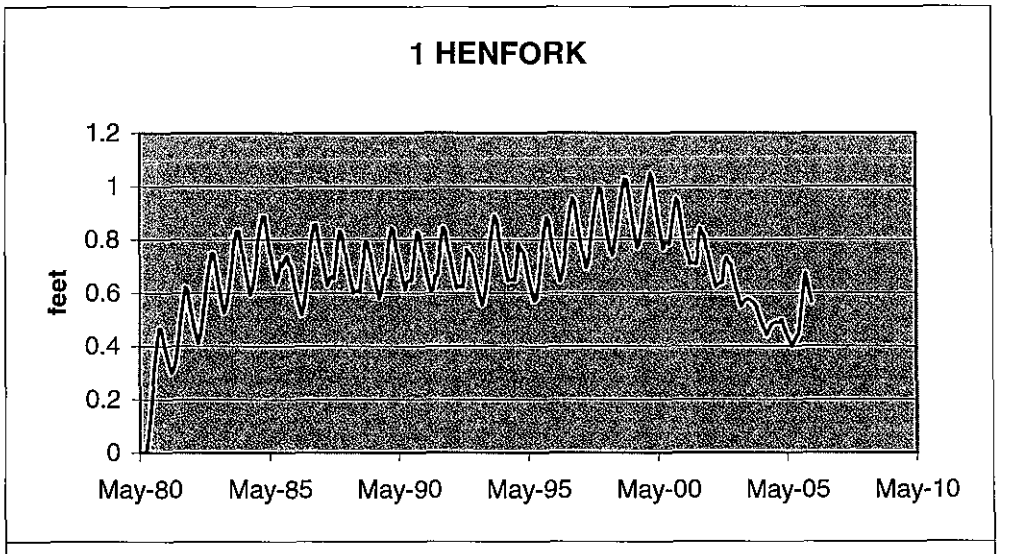
The following hydrographs provide an example of the benefits of immediate implementation of all Phase I measures. However, actual changes in the water budget will occur at a different rate as these measures are implemented over a 10 year period, as funding becomes available and as recommended by the CAMP Implementation Committee.[2]

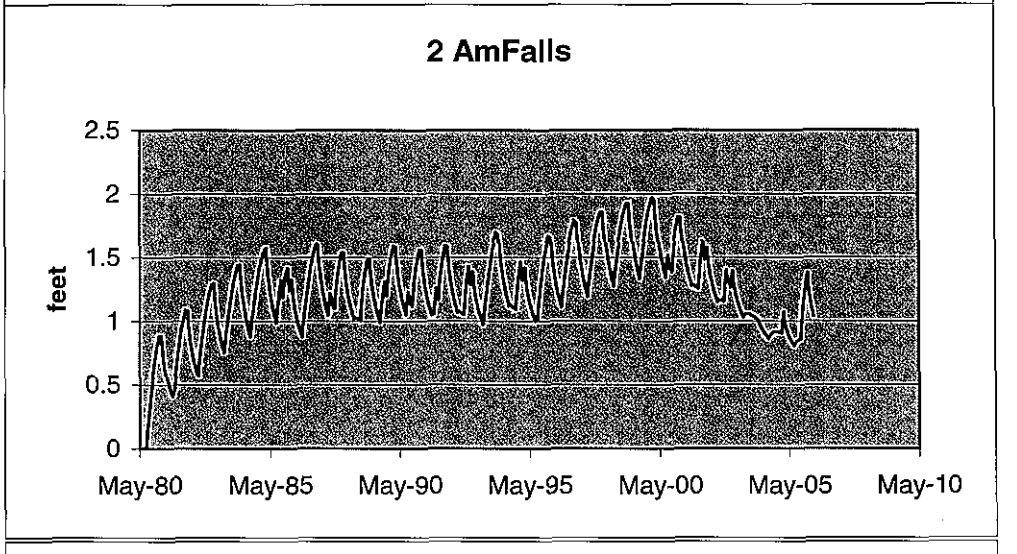
[2] Based on technical report outlined in Summary of CAMP Modeling Results in technical documents www.espaplan.idaho.gov)

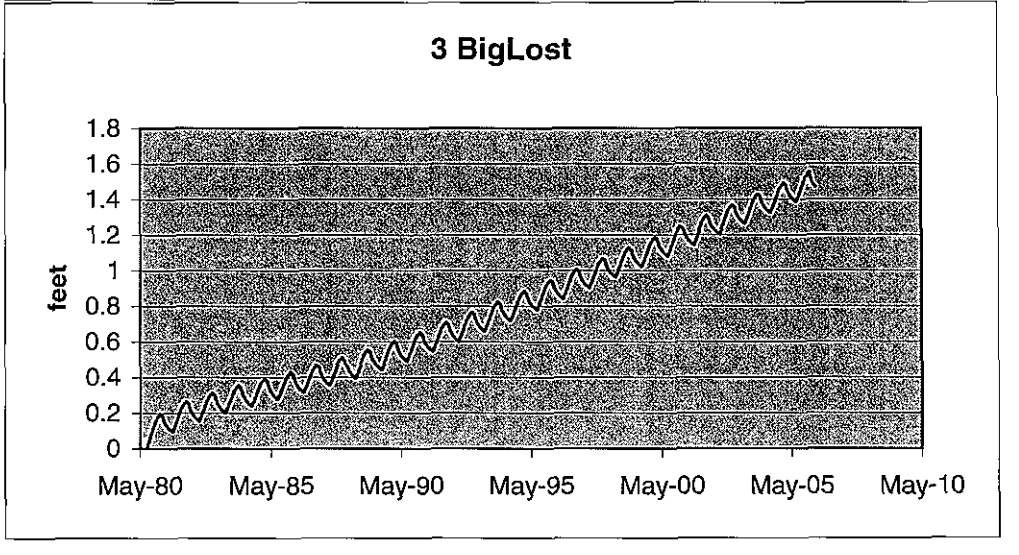
Simulated Ground Water Level Changes Due to Phase 1 of the ESPA Comprehensive Aquifer Management Plan



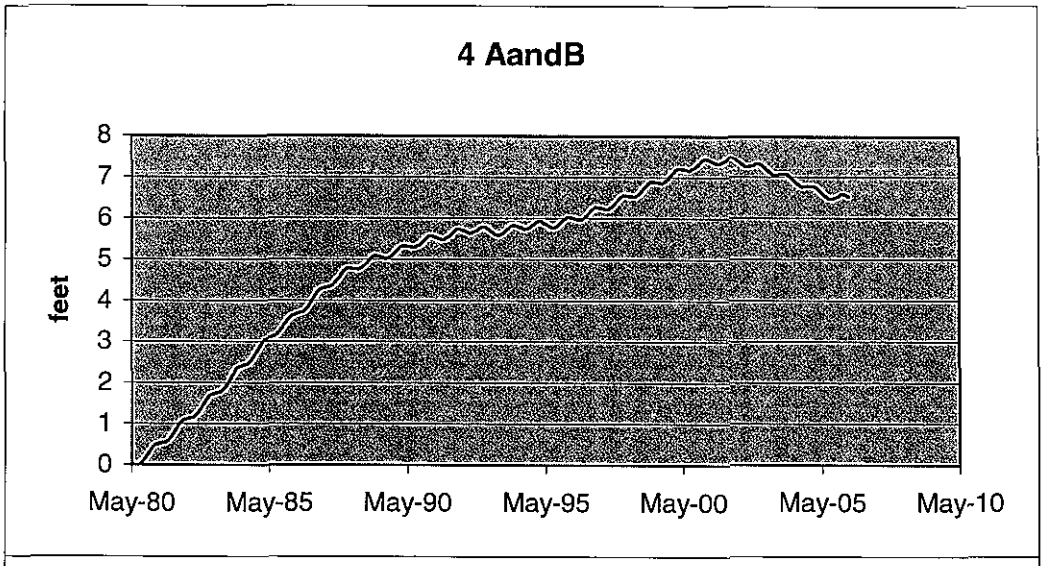
Ground Water Level Hydrographs

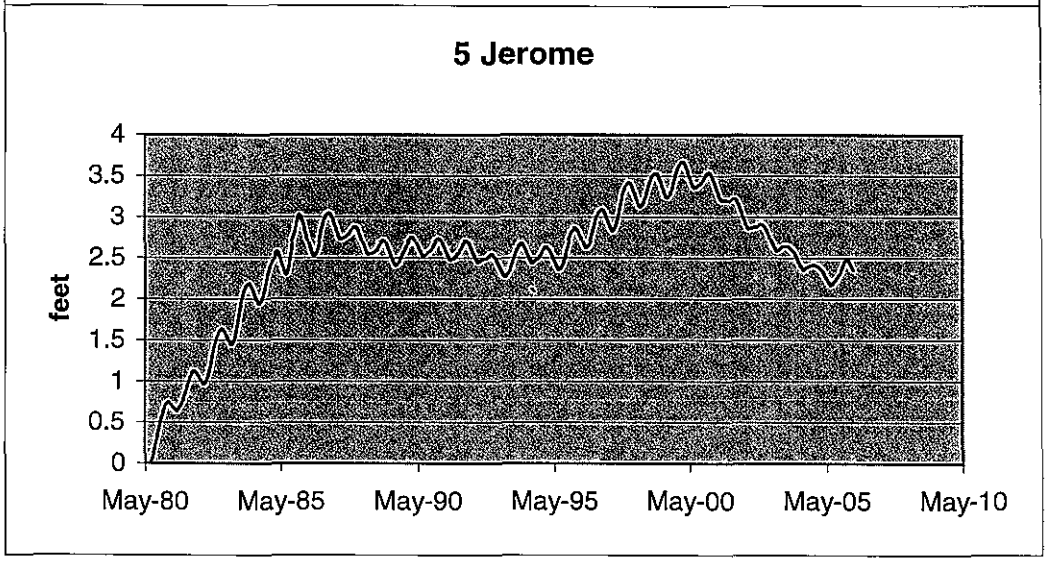




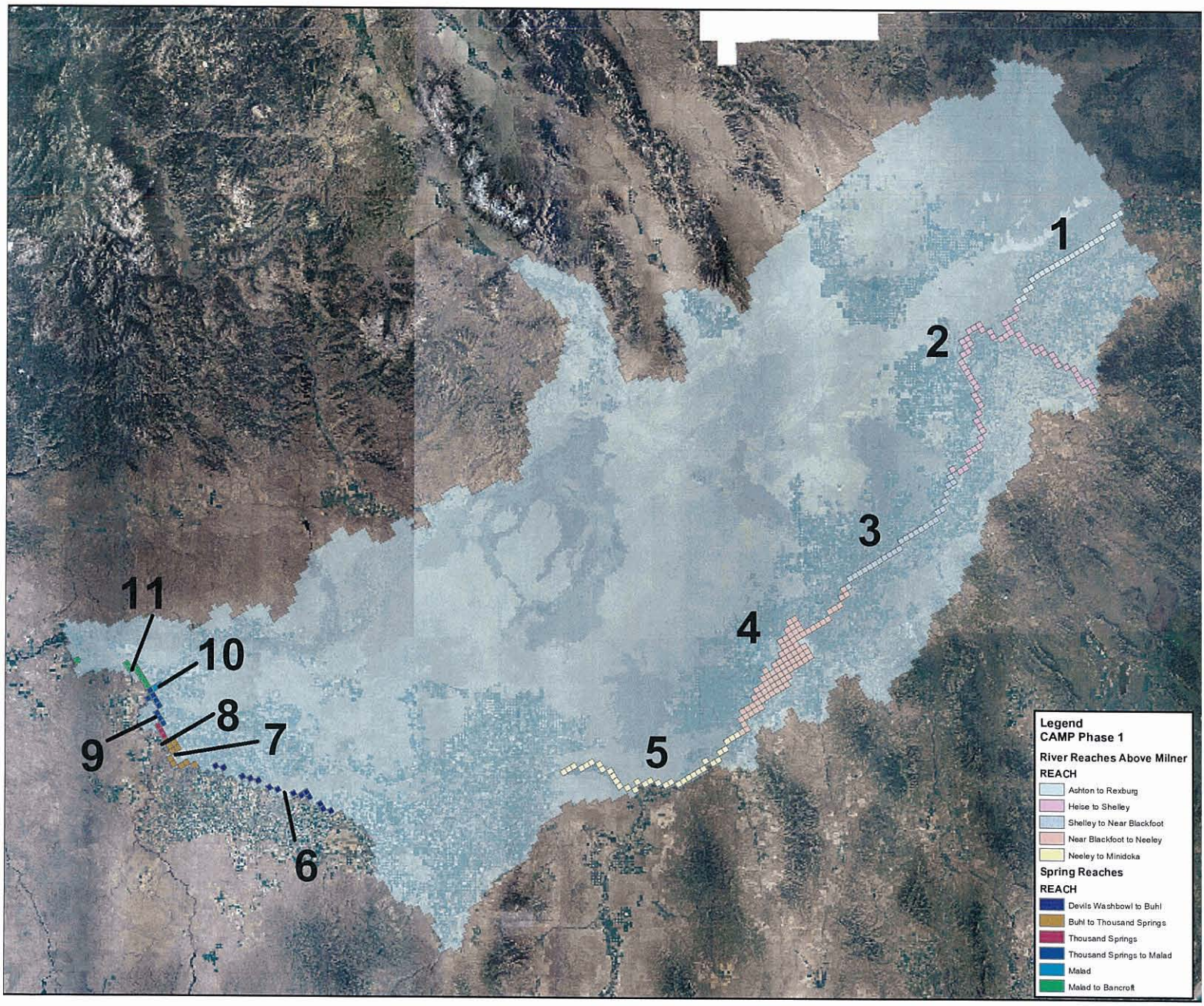


Ground Water Level Hydrographs

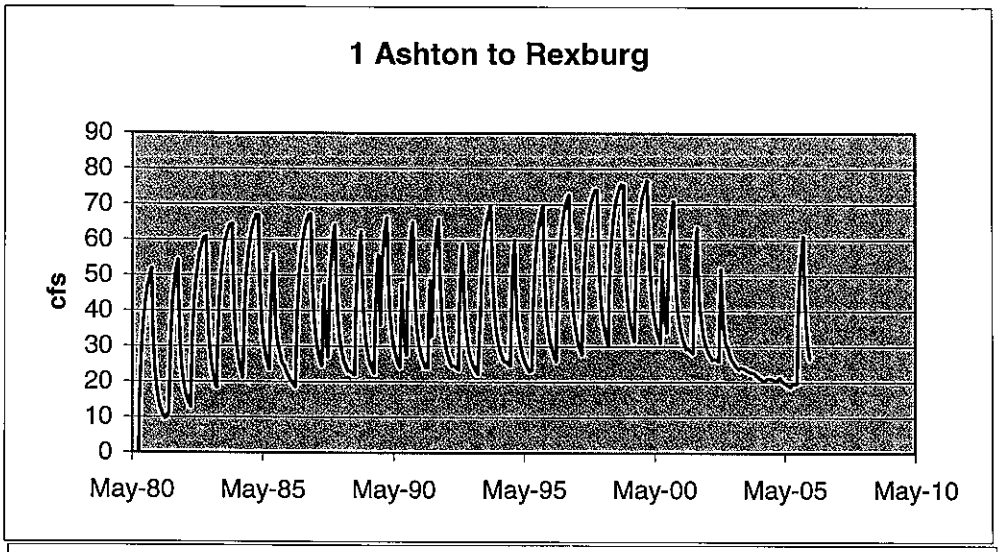


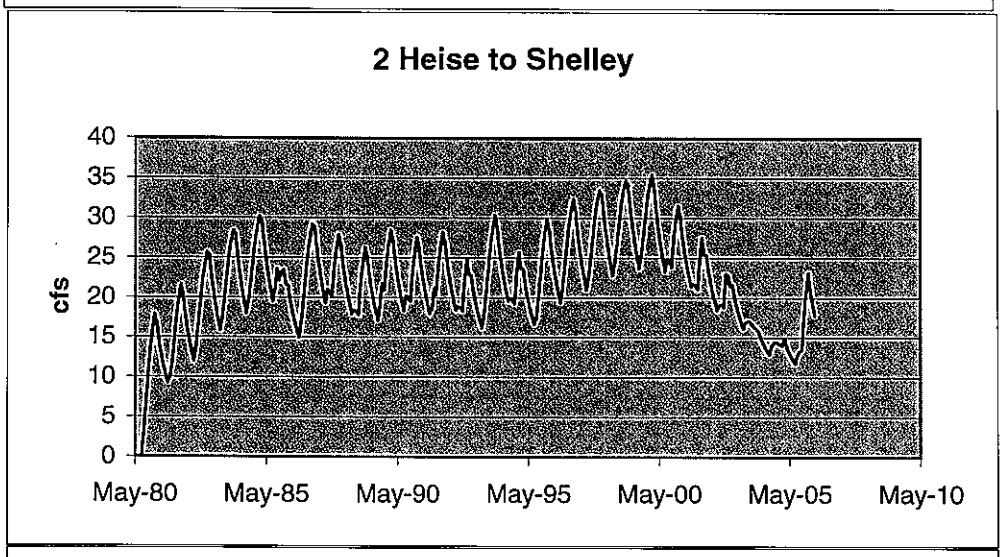


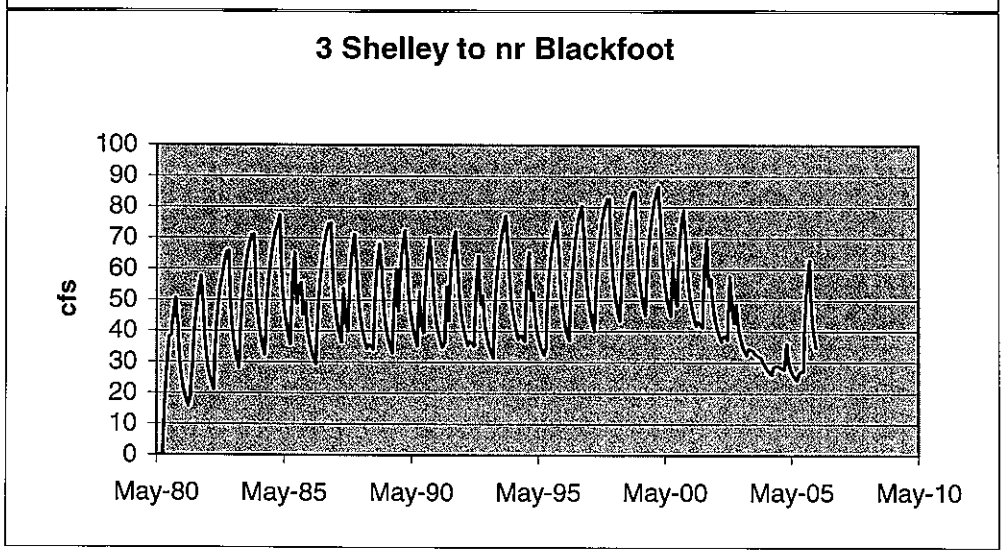
Simulated River Reach Gains Due to Phase 1 of the ESPA Comprehensive Aquifer Management Plan



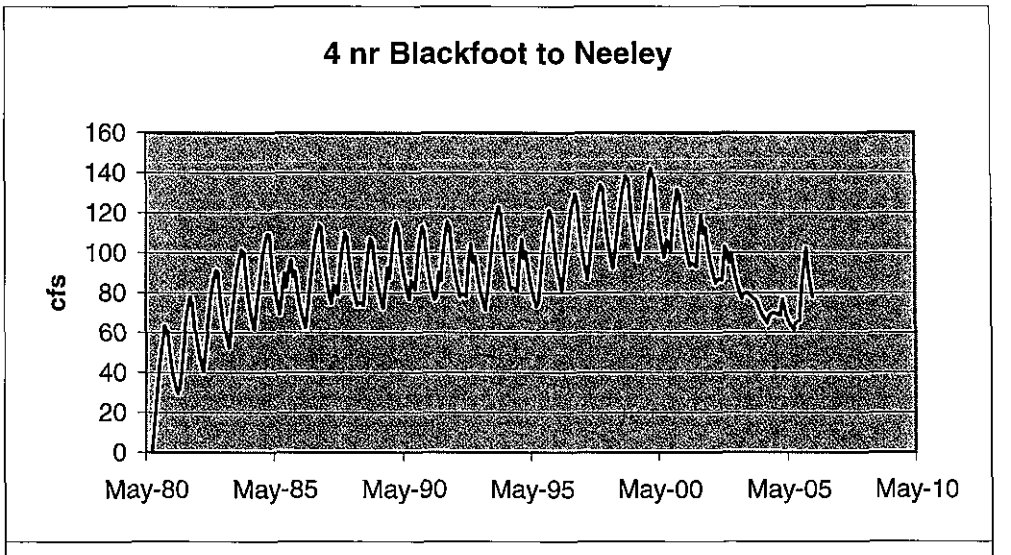
River Reach Hydrographs

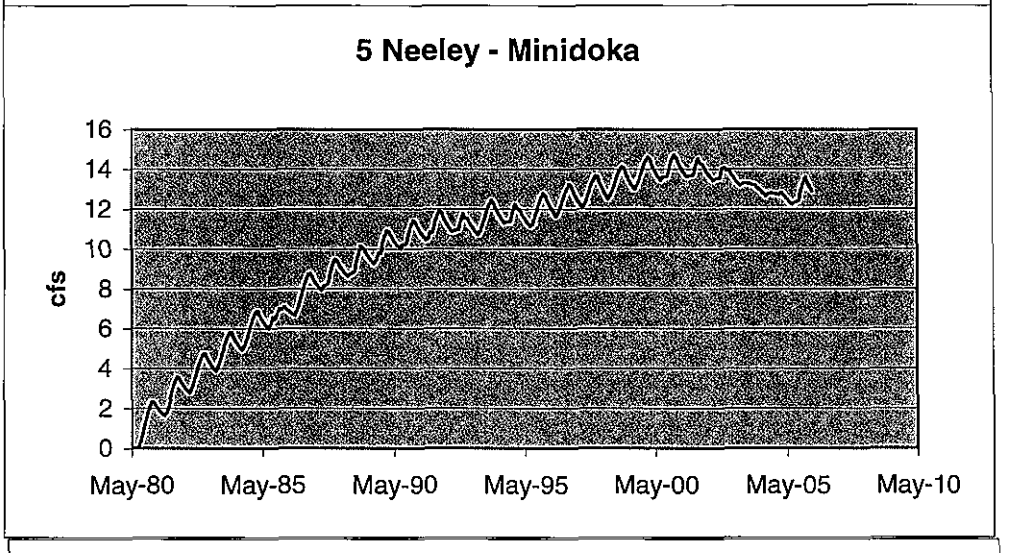


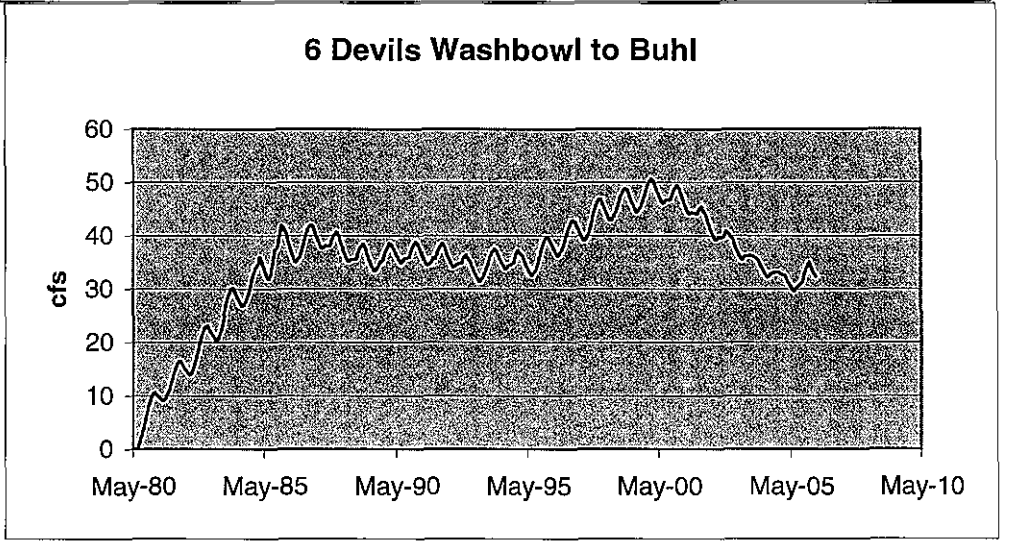




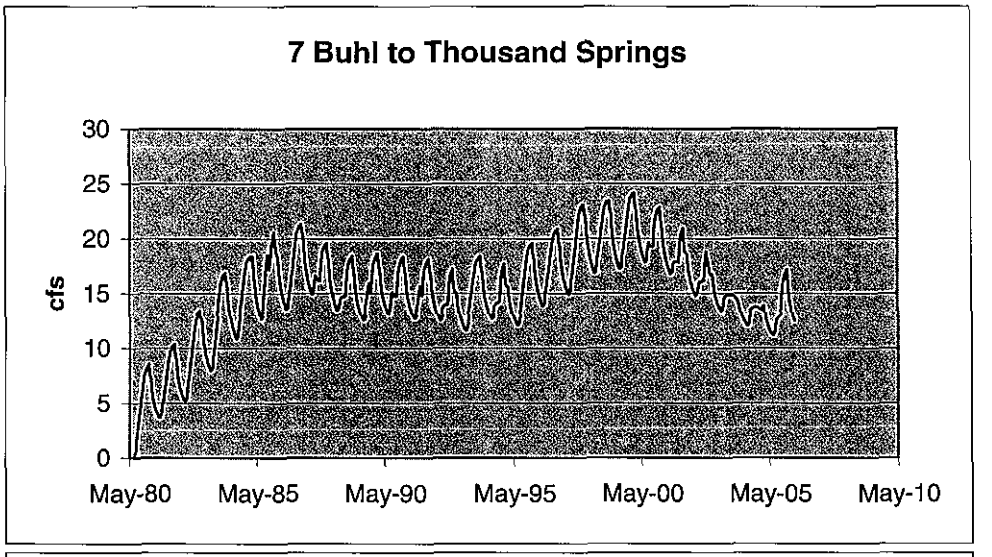
River Reach Hydrographs

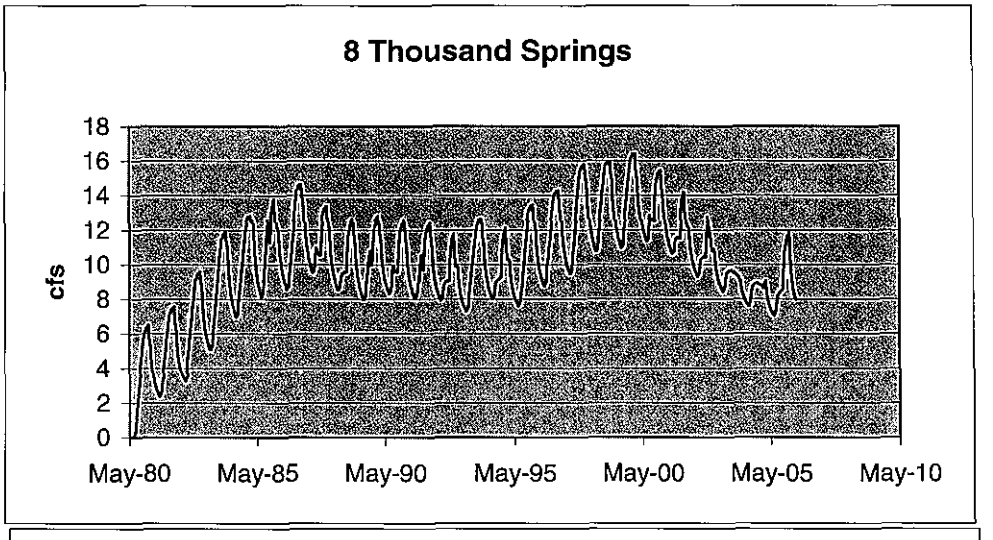


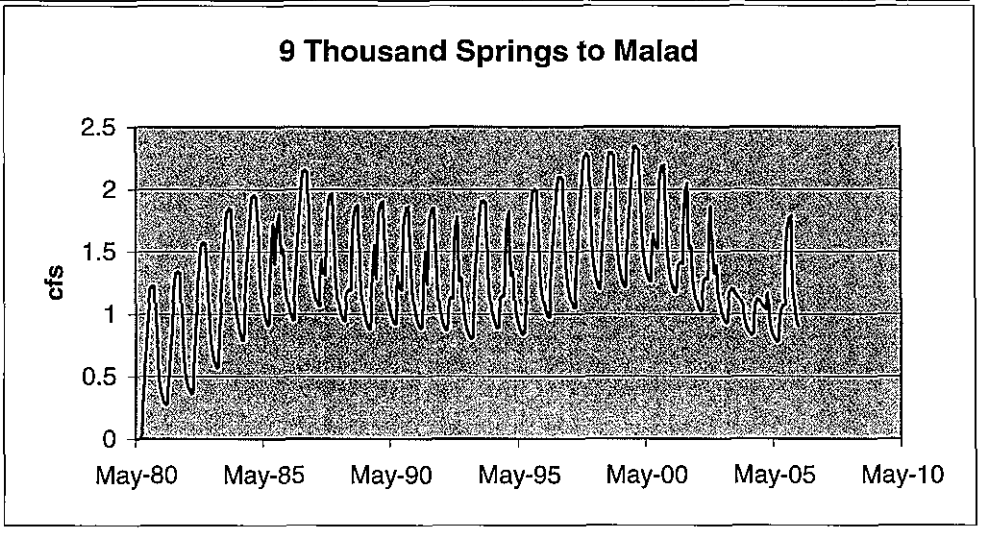




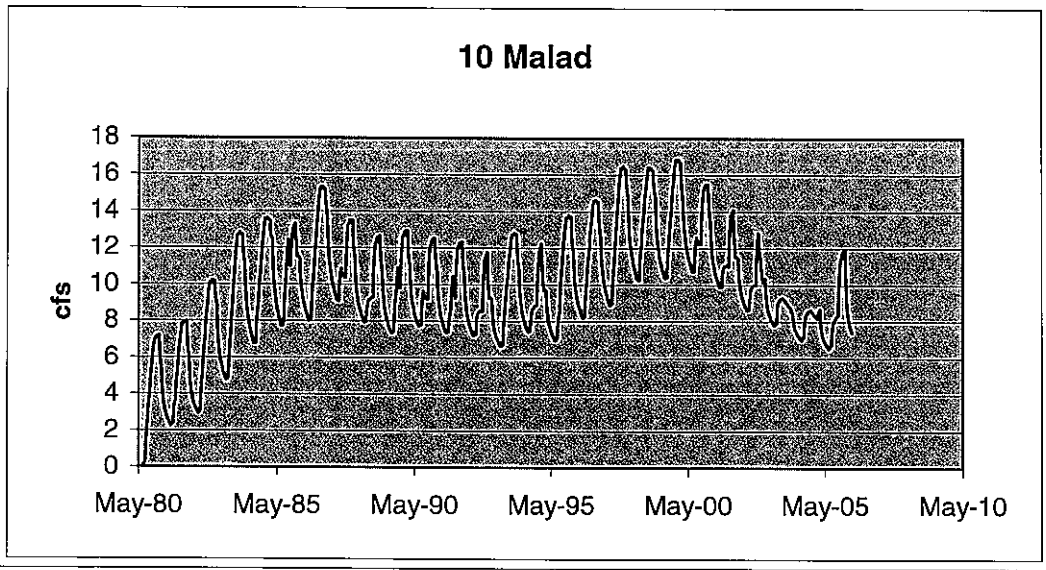
River Reach Hydrographs

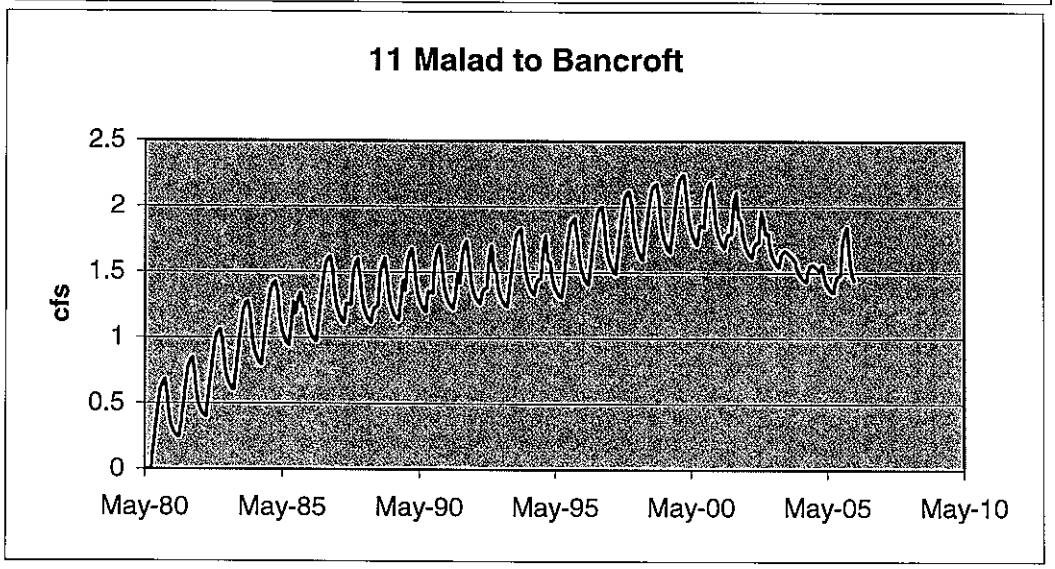






River Reach Hydrographs





3.2.1 Phase I Actions

A. Ground Water to Surface Water Conversions

Goal: **Implement 100 kaf Annual Average over 5 years**

Actions:

- Opportunistically pursue conversions equally above and below American Falls.
- Conversion opportunities include Hazelton Butte (estimated 9,000 acres); A&B service area through Milner Gooding canal and Minidoka Irrigation District; Aberdeen Springfield (lower end of system); South side of Minidoka (WD 140); Southwest Irrigation District, and others.

Issues:

- Examine capacity above American Falls for conversions (new wells in the last 40 years) on land previously using surface water).
- Opportunistically acquire water below Milner Dam to be exchanged for Upper Snake flow augmentation to provide a firm supply. Pursue other out-of-basin exchanges to provide a firm supply, with consideration of potential third party impacts.
- Opportunistically acquire upsteam surface water rights on flow-limited streams and transfer them downstream to achieve both conversions and stream flow restoration.
- Execute conversions during the spring and fall shoulders as well as during irrigation season as capacity allows.
- Coordinate with Bureau of Reclamation operations and other interested parties to plan for conversions and optimize outcomes for fish and wildlife, surface water quality, and recreation.

- Identify sites and conduct engineering during winter 2009, focusing on high-lift pump areas.
- Implement initial conversions by 2010 crop year.
- Assume that a portion of costs may be born by irrigators who benefit from conversion (ex., reduced power costs and value of water "on the land").
- Potentially the least expensive available option, although incentives are likely needed to implement conversions.
- Evaluate impact on surface water availability and the reservoir system operations.

B. Managed Aquifer Recharge

Goal: **Implement 80 kaf Annual Average over 5 years**

Actions:

- 20 kaf of recharge above Blackfoot on the Egin Bench including both fall and spring recharge efforts. Implement a fall 2008 recharge pilot project using storage water based on Committee of Nine approval and with consideration of Henry's Fork winter flows.
- 30 kaf recharge above American Falls on Jensen Grove, Aberdeen Springfield Canal, and New Sweden systems, and with consideration of South Fork River springtime flows.
- 30 kaf recharge that impacts the Thousand Springs Reach on the North Side Canal Company, Milner Gooding Canal. Explore opportunities for small scale targeted recharge in the Thousand Spring reach.
- Explore recharge options on north side of Lake Walcott
- Maximize use of the IWRB's recharge right, Wood River Legacy transactions, and/or flood control releases on the Wood River system.

Issues:

- Attempt to maximize recharge efforts on an annual basis except if recharge impacts available supply for conversions or adversely effects ground water quality.
- High priority on continued study of a recharge site at Lake Walcott as it is expected to have a positive impacts on both the springs above American Falls and at Thousand Springs. Determine how to demonstrate reach gain benefit above Milner Dam.
- Coordinate with Bureau of Reclamation operations and other interested parties to plan for recharge efforts and

optimize outcomes for fish and wildlife, surface and ground water quality, and recreation.

- Develop long-term contracts with canal companies to deliver IWRB recharge water when in priority.
- Opportunistically acquire up-steam surface water rights on flow limited tributary streams and transfer them downstream to achieve both ground water recharge and stream flow restoration.

C. Demand Reduction

1. Demand Reduction: Buyouts, Buy-downs and/or Subordination Agreements

Goal: **Part of annual Demand Reduction of 100 kaf**

Actions:

- Opportunistically pursue buyouts, buy-downs and/or subordination agreements across the ESPA, including in the Thousand Springs reach.
- Set aside financial resources to enable transactions.
- Pursue opportunities for environmental enhancements as a component of such agreements.
- Utilize the State Water Fund or other sources as available to provide seed money for demand reduction projects

2. Demand Reduction: Rotating Fallowing, Dry-Year Lease Agreements and CREP Enhancements

Goal: **Part of annual Demand Reduction of 100 kaf**

Actions:

- Implement fallowing and dry-year lease options equally above and below American Falls.
- Implement rotating fallowing program where groundwater users bid into a predictable and defined system to reduce demand.

- Employ Dry-year Lease Options that use storage water to provide water supply and incentives for conversions.
- Pursue opportunities to leverage federal resources by providing additional incentives to increase CREP participation. Pursue other opportunities to increase CREP enrollment.
- Utilize the State Water Fund or other sources as available to provide seed money for demand reduction projects

Issues:

- Develop specific demand reduction program to implement and generate funds by the end of 2009.
- Explore programs that may reduce ground water demands during dry years and programs that would have an impact on river flows during the growing season.

3. Demand Reduction: Crop Mix Modification in the Aberdeen/Bingham Groundwater District

Goal: **5,000 af per year and part of annual Demand Reduction of 100 kaf.**

Actions:

- Implement a pilot project, administered through Aberdeen/Bingham Groundwater District, that targets a reduction of groundwater use through alternate cropping patterns (ex., changing hay for grain).
- The program targets a reduction in groundwater use of an average of 5 kaf annually by year 5. Year 1 includes a 1,000 af target and the target increases 1,000 af per year until year 5.
- Aberdeen/Bingham Groundwater District will determine most effective methods to accomplish targets.

4. Demand Reduction: Surface Water Conservation

Goal: **Most efficient use of available surface water supply (undetermined quantity).**

Actions:

- Evaluate opportunities for surface water conservation measures.
- Construct check structures and automated gates, equalizing reservoirs, pump backs and investigate reducing transmission loss at specific areas where transmission loss does not benefit a ground water user or spring water user without impacting incidental recharge, thereby reducing return flows and saving water to be used for additional conversions.
- Explore federal grants to leverage state monies and reduce cost to canal companies.

Issues:

- All conservation efforts are site specific and need to be examined on a case-by-case basis to ensure desired impact.
- Hydrologic effects of conservation actions could include an increase in natural flow and storage, and may provide supply for conversions.
- Pursue incentives for conservation activities and quantify hydrologic benefits, including water quality benefits from reduced return flows.

D. Pilot Weather Modification Program

Goal: **Surface Water Supply enhancement, undetermined quantity**

Actions: Implement a five-year pilot weather modification project in the Upper Snake River Basin and potentially the Wood River system, with state, local, university, and other agency support for the program.

Issues:

- Develop plan in 2009 and implement during winter 2010.
- Include a detailed monitoring program.
- Strategy will target an increase in winter snowpack.
- Idaho Power Company has agreed to work with the State and interested counties to implement the experimental project.
- Coordinate with the State of Wyoming regarding potential partnership.
- Develop procedures to suspend weather modification activities during heavy precipitation periods when additional rain or snow may have adverse consequences on wintering game, public safety, flooding, or other factors.

E. Incidental Recharge

Goal: **No reduction in incidental recharge over the ESPA during the10 year Phase I plan**

Action:

- Recognize the role of incidental recharge.
- Work with canals and funding agencies that are implementing water conservation measures to offset the effects of conservation to the aquifer.

F. CAMP Implementation and Growth

Goal: **Identify and address impediments to municipal, industrial, and commercial growth.**

Actions:

- Review administrative rules and processes that may be an impediment to growth and implementing CAMP management actions; take administrative steps to assure that water is available to sustain future economic growth.

3.2.2 Additional CAMP Recommendations

In addition to the overall hydrologic vision and Phase I implementation steps, the Committee recommends the following actions to enhance coordination, decision making, and aquifer management.

1. ***CAMP Implementation Committee*** — This Committee will refocus and restructure the CAMP Advisory Committee to concentrate on aquifer management (including recommending additional research needed to better understand the hydrogeology of the ESPA), prioritization and implementation of actions, and agency coordination. The Implementation Committee will recommend objectives to stabilize and improve spring flows, aquifer levels, and river reaches. The Committee will include, but will not be limited to, interest groups currently represented on the ESPA Advisory Committee. The Committee will establish a coordination process that shares timely information on river and aquifer management actions, makes recommendations and provides opportunity for public involvement.

2. ***Environmental Considerations*** — Continue to integrate environmental and other considerations into the CAMP decision-making and implementation process. With the advice of the Implementation Committee, the CAMP will seek to optimize outcomes for fish and wildlife, recreation, hydropower, municipalities, irrigation, aquaculture, and other uses.

3. ***Clearinghouse*** — Evaluate options to implement a flexible mechanism that connects willing participants in the implementation of ESPA water management projects. Develop a strategic approach to implement recharge, conversion, and demand reduction strategies using a clearinghouse structure.

4. ***Outreach and Education*** — Develop and fund a broad water education and outreach effort, building on existing water-user outreach efforts and programs, with an initial

emphasis on local governments, domestic well owners, and consumptive water users.

5. ***Management Flexibility and Innovation*** — Pursue and incorporate the most cost effective water management tools that achieve the overall goals and objectives for improving the ESPA. Explore innovative approaches that can improve water supplies available for conversion, recharge, and/or enhancement of surface supplies.

6. ***Downstream Transfer Policy*** — Encourage providing water for recharge and conversion projects through downstream transfers of surface water rights to the ESPA in a manner that enhances flows in flow-limited tributaries. Such transfers should be consistent with state law, policy and programs and utilize the water supply bank wherever appropriate.

3.3 Funding Recommendations

The Committee has identified a multi-pronged approach to funding the recommended Phase I ten- year actions. It is estimated that $70 million - $100 million dollars will be needed to implement a 200-300 kaf annual change in the ESPA water budget during the first 10 years.[3] The Committee recommends that ESPA water users[4] join together to contribute 60% of the required funds and that the State of Idaho compliment that contribution and cover 40% of the funding needs through the creation of a state water fund.

In addition, other sources of funding, including federal and private sources, have been identified and should be secured to advance implementation of the CAMP. Funding strategies for implementing subsequent increments will be outlined during Phase I through the CAMP Implementation Committee.

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[3] Not including operations and maintenance costs.

[4] Including domestic users, consumptive and non-consumptive industries, and municipalities

3.3.1 Phase I Funding

The following table outlines a recommended funding approach for CAMP Phase I implementation with contribution targets. As noted above, the estimated funding need for Phase I implementation is $70 million - $100 million ($7 – $10 million per year for 10 years).

Water User Category	Phase I Funding Contribution Targets
Irrigated Agriculture (groundwater and surface water)	$ 3 million annually
Idaho Power/Co-Ops	$ 1 million – $1.5 million annually (for projects that qualify for TEMP)[5]
Municipalities	$ 700,000 annually (includes commitment to address rules and statutes that may inhibit municipal growth)
Spring Users	$ 200,000 annually(based on cfs)
Industrial/Commercial Users (not in municipalities or groundwater districts)	$150,000 annually (based on estimated 15 kaf annually)
State of Idaho	$ 3 million annually
Federal	Pursue EQIP/Water for America Initiative/CREP and other funding opportunities
Recreation/Conservation	Pursue grants and other funding opportunities

[5] In connection with the relicensing of Hells Canyon hydroelectric project, Idaho Power Company has proposed to implement a Temperature Enhancement Management Program (TEMP) as part of the Clean Water Act Section 401 water quality certification process. Through the TEMP, Idaho Power Company intends to develop, fund and implement watershed management and enhancement projects that will assist in ameliorating Snake River water temperature conditions. Idaho Power will work with the proposed Implementation Committee and Board to identify CAMP measures that qualify for inclusion in the TEMP.

The proposed funding approach seeks to raise the needed funds through a flexible strategy that is broad-based, covers all water users, provides for equitable benefits and efficient revenue collection, and minimizes interest expenses. The funding strategies outlined below are for legislative consideration.

A. ESPA Water Users Component:

1. ***Pay-As-You-Go.*** A financial policy that pays for capital outlays from current revenues rather than borrowing. An approach that pays for some improvements from current revenues and others by borrowing is said to be on a partial or modified pay-as-you-go basis.
2. ***Idaho Water Resource Board Contract.*** Using the existing Board Authority to issue revenue bonds, in which principal and interest are payable entirely from the revenue received (ultimately by the people and businesses that use the facility). This approach would be potentially taxable.
3. ***Water Management Improvement District.*** Assesses a fee to defray part or all of the costs of a specific improvement or service. A Water Management Improvement District would require legislative action to grant the Board authority to establish the districts.

B. State Component:

1. ***State Water Management Project.*** General Fund Appropriations from kilowatt per hour (kwh) power franchise fee, a states sales or property tax, special product or service tax, etc.) to pay for the state portion of the management plan.
2. ***State Water Fund.*** Develop a state-wide water fund, funded through a state water management project, to authorize and fund such projects. The Board would request annual appropriation based upon proposed projects.

Based on an analysis of the alternatives developed, the Committee suggests a combination of funding strategies for legislative consideration, including a pay-as-you-go strategy, the Water Board's existing loan and grant program and a Water Management Improvement District.

Together, these strategies could finance the water user component of CAMP implementation costs. The inclusion of the pay-as-you-go strategy would eliminate interest rate exposure. The new legal authority for a WMID would:

1) Make it easier to administer water-user contributions;
2) Reduce the interest rate expense
3) Augment the ability to raise funds from specific geographic areas within the ESPA; and
4) Increase likelihood of public acceptance of CAMP fees.

The Committee further suggests consideration of the establishment of a state water project fund. Power franchise fees, sales tax, product tax, or other sources could be collected into the state water project fund and matched with water user and implementation partner contributions. As water users and implementation partners secure their 60% for a project or group of projects, a request could be made through the Board to the legislature to authorize the matching funds for the proposed projects. A collection method for irrigated agriculture, municipalities, spring-users, and industrial/commercial users might include an assessment through water districts.

3.3.2 Phase I – Implementation Plan

Board staff, in consultation with the Implementation Committee, will implement the Phase I recommendations as funding becomes available. Many measures require additional analysis, outlining of implementation steps, developing a detailed implementation plan, and consultation with agencies and stakeholders. Board staff will develop an implementation plan that will be reviewed by the Implementation Committee and Board. One of the first tasks of the Implementation Committee will be to review and approve the implementation plan.

3.3.3 Legislative Modifications Needed to Accomplish CAMP

The Committee recommends further investigation of potential legislative action required to implement the CAMP, including, but not limited to:

- Authorization for the Board to establish local water improvement districts and assess fees to pay for projects.
- Establishment of a mechanism for collection of fees for allocation to a water project fund for state contributions to water management projects.

4.0 ADAPTIVE MANAGEMENT

This section sets forth an adaptive management strategy for implementation of the CAMP. The goal of adaptive management is to support improved decision-making and performance of water management measures over time.

Key principles fundamental to this approach include:

1. Anticipating possible future uncertainties and contingencies during planning
2. Employing science-based approaches 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 – even in the face of uncertainty – in a complex system with many variables and constant change. Developing perfect knowledge concerning any system, including the ESPA, is impossible, and therefore an adaptive management approach is critical to the successful attainment of the qualitative and quantitative goals set forth in the CAMP. Successful adaptive management requires patience and long-term commitment, as acquiring enough data to make decisions about program changes takes time.

The CAMP adaptive management strategy will allow the State of Idaho to:

- Develop protocols for revising management actions and/or quantitative targets as necessary;
- Compare costs and impacts of different actions to manage and improve the water budget in the ESPA;
- Adjust funding allocation between projects to get the most "bang for the buck;"
- Concentrate funding on management actions that show results; and
- Allow adjustments and revisions to the CAMP as new information becomes available or in response to changing water supply and demand needs.
- Provide flexibility depending on results and analysis of monitoring and measurement data.

4.1 Coordination & Implementation

Management of the ESPA affects numerous stakeholders and the State of Idaho. Effective implementation of the CAMP will require the participation and cooperation of stakeholders and governmental entities with jurisdictional authorities and responsibilities. The Committee therefore recommends establishing a CAMP Implementation Committee charged with providing guidance and recommendations concerning the implementation of management strategies and review of goals and objectives. The Implementation Committee would provide a forum for discussing Phase I implementation, establishing benchmarks for evaluating the effectiveness of measures, coordinating with water users and managers, evaluating and addressing environmental issues and advocate and pursue funding opportunities.

The Implementation Committee will include interest groups currently represented on the ESPA Advisory Committee, along with a Board liaison. The Implementation Committee will serve at the pleasure of the Idaho Water Resource Board and provide a forum for public participation. Board staff will facilitate the work of the Implementation Committee and provide the technical information needed for its deliberations. The Board would continue to make the final decisions concerning CAMP project priorities, implementation, and funding.

4.2 Monitoring & Evaluation

A monitoring plan has been funded and developed for the ESPA, but additional monitoring and evaluation may be required beyond the existing program. Updating the ground water model (and other modeling tools) on a periodic basis and technical review by the Eastern Snake Hydrologic Modeling Committee is currently ongoing. Improvement in the models used to evaluate the effectiveness of management measures is on-going through a collaborative effort. As various water budget adjustment programs are implemented there may be a need for additional monitoring or modifications to the existing program, e.g., specific projects may require site specific measurement, hydrogeology measurement and analysis not currently provided for. Additional modeling scenario analysis may be required to assist the Board and the CAMP Implementation Committee in the implementation process. Additionally, increased measurement of water use across the ESPA and an increased understanding of the hydrogeologic complexity are recommended to inform and raise awareness during the planning and management process.

With data gathered through the monitoring process, the Implementation Committee and Board staff should be able to assess the impacts of each management activity. 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 CAMP depends on state-of-the-art monitoring and evaluation tools that provide the information necessary to made sound planning decisions for the future.

5. CAMP TECHNICAL DOCUMENTS and COMMITTEE MEMBERSHIP LIST

Technical documents were used to design Phase I actions and these and other technical information will guide the ESPA CAMP Implementation Committee. These and all ESPA CAMP related materials can be found at www.espaplan.idaho.gov in the Technical Document folder. The technical documents include the following:

A. Sub-Committee Report - Environmental Observations
B. Sub-Committee Report - Economic Analysis – Demand Reduction Options
C. Draft Management Alternatives Analysis and Packaging
D. Draft Funding Principles and Strategies
E. Summary of CAMP Modeling Results
F. Summary of Cloud Seeding Feasibility/Design Study

Advisory Committee Membership List

Municipalities/Counties	
Representative	**Alternate**
Mayor Lance Clow, City of Twin Falls	**Mayor Correll**, City of Jerome
Mayor Fuhriman, City of Idaho Falls	**Mayor Roger Chase,** City of Pocatello

Business	
Representative	**Alternate**
Alex S. LaBeau, IACI President	

Land developers	
Representative	**Alternate**
Rebecca Casper, Ball Ventures LLC	**Bob Muffley,** Board of Realtors/Mid-Snake Commission

Surface water users	
Representative	**Alternate**
Jeff Raybould, Fremont-Madison Irrigation District	**Lloyd Hicks,** Rigby
Randy Bingham, Burley Irrigation District	**Steve Howser,** Aberdeen-Springfield Canal Company
Vince Alberdi, Twin Falls Canal Company	**Albert Lockwood,** Northside Canal Company

Groundwater users	
Representative	**Alternate**
Don Parker, water district 110-100	**Scott Clawson,** water district 110-100,
Tim Deeg, water district 120	**Craig Evans,** water district 120,
Dean Stevenson, water district 130-140	**Lynn Carlquist,** water district 130

Spring water users	
Representative	**Alternate**
Randy MacMillan, Clear Springs Foods, Inc.	**Linda Lemmon,** Thousand Springs Water Users Association

Hydropower	
Representative	**Alternate**
James Tucker, Idaho Power	**Dee Reynolds,** Fall River Electric

Domestic well owners	
Representative	**Alternate**
George Katseanes, Blackfoot	

Environmental and Conservation Interests	
Representative	**Alternate**
Kim Goodman, Trout Unlimited	**Will Whelan,** The Nature Conservancy

Mixed-Use Interest	
Representative	**Alternate**
Dan Schaeffer, A&B Irrigation District	**Stan Standal,** Spring Water User

County Assessor	
Representative	**Alternate**
Max Vaughn, Minidoka County	**Steven Seer**, Bonneville County

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US Fish and Wildlife Service
Damien Miller

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John Chatburn