

## ANALYSIS

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**Project Name: AGRICULTURAL WATER ENHANCEMENT PROGRAM 2009 AND 2010 PROJECTS**

**Project Sponsor(s)**

ESPA CAMP Implementation Committee

**Project Description**

The Idaho Water Resource Board's 5-year proposal to the Natural Resources Conservation Service's (NRCS) Agricultural Water Enhancement Program (AWEP) was approved in 2009. The federal contribution to AWEP projects is up to 75% of project costs. The producer is required to provide the remaining non-federal portion. In the original IWRB AWEP proposal, the State proposed a contribution of up to 20% of the project costs from ESPA CAMP funds, if available. Because a funding mechanism for the ESPA CAMP has not been established yet, 2009 AWEP projects have not received state funding assistance.

The Implementation Committee strongly supports committing a portion of available CAMP funds to offset part of the non-federal (producer) share of the 2009 and/or 2010 AWEP project costs (40% of the non-federal portion). The basis for this proposal is:

1. Consistency with the original AWEP proposal that identified the use of CAMP funding to offset the non-federal portion.
2. Encourage/incentivize producer participation in the AWEP to promote projects ready for construction that have been identified to promote the CAMP objectives.
3. Offset the project costs associated with IDWR requirements that are not supported by federal funds (e.g. measuring devices).

Projects identified to receive state funding in accordance with the original AWEP proposal include the following:

- 2009 Projects – Ground water to surface water conversion projects across the ESPA. The federal contribution associated with the 2009 AWEP was up to 75% of the project costs.
- 2010 Projects - Projects expected in 2010 include the following:
  - Conversion projects across the ESPA (up to 75% federal match)
  - Re-regulating ponds across the ESPA (up to 60% federal match)
  - Crop mix modification projects in Bingham and Power Counties (up to 75% federal match)
  - Conversion to dryland farming in the Henry's Fork, Wood, Blackfoot and Portneuf (up to 75% federal match)
  - Aquifer demand reduction across the ESPA (up to 75% federal match)

## **Cost Estimates and Funding**

2009:

Total Non-Federal Portion of GW-SW Conversion Project Costs:	\$466,221
Potential Sponsor Funding* Contribution (60% of non-fed):	\$279,733
<b>Proposed ESPA CAMP Contribution (40% of non-fed):</b>	<b>\$186,488</b>

2010:

*Funding available from NRCS unknown at this time. Costs based on the budget requested.*

Total Non-Federal Portion Project Costs:	\$635,833
Potential Sponsor Funding* Contribution (60% of non-fed):	\$381,500
<b>Proposed ESPA CAMP Contribution (40% of non-fed):</b>	<b>\$254,333</b>
<b>2009 + 2010 Total:</b>	<b>\$440,821</b>

\*Identified Sponsor funding sources: Producers filing AWEP applications with the NRCS agree to pay the non-federal portion of the project costs.

## **Benefits & Issues Associated with Specific Programs**

- 1. Conversion Projects:** The goal of the program is to utilize AWEP funds to convert from ground water to surface water irrigation. Once projects are identified, AWEP funds are used for engineering design, purchase and installation of appropriate hardware, including pipes, pumps and other related infrastructure. Conversion projects were introduced in 2009 and are eligible for awards from NRCS in 2010.
  - **Benefits:** Conversion projects promote a reduction in ground water pumping from the ESPA and provide an increase in incidental recharge and an alternative source of water in areas with a depleted ground water table. Reduced pumping costs and energy savings also are anticipated.

The attached hydrologic evaluation documents estimated benefits of the 2009 AWEP conversion projects assuming all fifteen projects, approximately 4300 acres, are operational. The modeled steady state response analysis indicates 25% and 21% of the reduction in consumptive use from reduced ground water pumping will return to the Nr Blackfoot to Neeley and the Devils Washbowl to Buhl reaches respectively. Evaluation of the transient response over twenty years of operation indicates flows may increase up to 2.3 cfs and average about 1100 acre-feet per year in the Nr Blackfoot to Neeley reach, and flows may increase up to 2.4 cfs and average about 1180 acre-feet per year in the Devils Washbowl to Buhl reach. Modeled hydrographs of four monitoring wells surrounding the more concentrated conversion projects demonstrate a water level rise of between approximately 0.2 to 0.7 feet over a twenty year period (see Hydrologic Analysis below).

Results indicate that active use of the conversion projects will result in a small but consistent benefit to the aquifer.

- **Issues:** Producers are required to locate a surface water supply, negotiate delivery agreements and conveyance fees with canal companies, and there are varying levels of ongoing operation and maintenance costs associated with the projects.

In order to promote a reduction in ground water pumping and to ensure AWEP projects comply with existing water rights and Water District standards, producers are required to coordinate with IDWR to verify whether there are valid ground water rights associated with the property, and to identify a method of measuring and reporting water use.

**2. Thousand Springs Water Savings Projects:** AWEP funds are intended to be used for projects within the Thousand Springs Water Users Association service area to replace leaky canals and diversion structures with pipe or concrete, and to convert some producers to pressurized sprinkler systems in order to improve water deliveries to spring users. Funds also will be used for engineering design, materials and installation expenses. Thousand Springs projects were introduced in 2009 and are eligible for awards in 2010.

- **Benefits:** The designs for the eighteen 2009 projects are not complete, but initial estimates are that at least 5,000 af of water savings will be realized for use on projects below the canyon rim along the Snake River.
- **Issues:** IDWR and NRCS staff are coordinating to ensure new AWEP projects comply with existing water rights and Water District standards.

**3. Re-regulating Ponds:** AWEP funds are intended to be used to develop re-regulating ponds within irrigation districts or canal companies. This program will be introduced in the 2010 AWEP.

- **Benefits:** Re-regulating ponds can be used to supplement or extend surface water supply, allow for re-use and more efficient regulation of water deliveries within a system.
- **Issues:** Allow time for coordination and development of agreements between canal companies and owners of property converted to the pond.

**4. Crop Mix Modification:** The goal of this project is to utilize AWEP funds to pay producers to transition from crops with high plant-water requirements to crops with lower plant-water requirements. AWEP funds could be used to pay producers for foregone income. This program will be introduced in the 2010 AWEP.

**5. Conversion to Dryland Farming:** AWEP funds are intended to be used to facilitate the conversion from surface irrigated to dryland farming or rangeland use in areas upstream of the ESPA. AWEP funds could be used to create a conservation plan or activity plan, conservation crop rotation, etc. This program will be introduced in the 2010 AWEP.

**6. Aquifer Demand Reduction:** AWEP funds will be used to fund technical assistance and certain practices for producers who reduce their aquifer withdrawals through verifiable measuring included in an activity plan. AWEP funds could be used to generate an activity plan and fund practices that are responsive to producer interest and may include:

conservation cropping rotation, residue management, pasture planting, fencing, and upland wildlife management. This program will be introduced in the 2010 AWEF.

- **Benefits for 4-6:** Projects promote voluntary demand reduction across the ESPA and Upper Snake River Basin.
- **Issues 4-6:** Development of appropriate economic incentives and identification of the level of the interest to maintain each program is an ongoing process.

### **Consistent with ESPA CAMP**

The proposed AWEF programs were originally designed to promote the goals of the ESPA CAMP which include improving aquifer levels, increasing gains in some river reaches, and increasing water supply certainty for all water users. In coordination with the NRCS and CAMP working groups, criteria are being developed to identify and fund projects consistent with the CAMP goals.

### **Long-term O&M**

There will be long term operation and maintenance requirements on conversion projects and the re-regulating ponds. At this time, producers are obligated to assume all operation and maintenance obligations.

### **Recommendation**

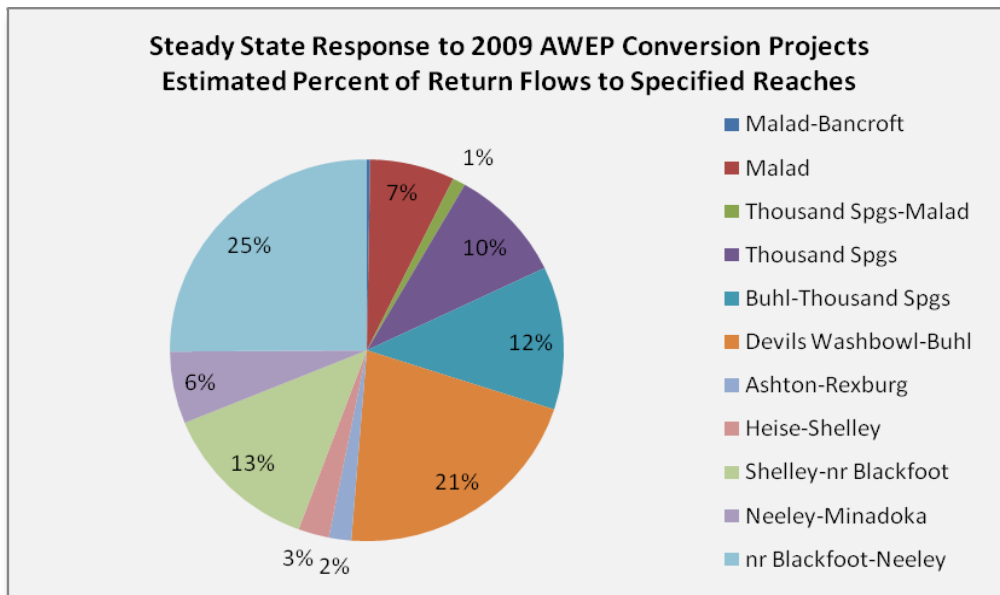
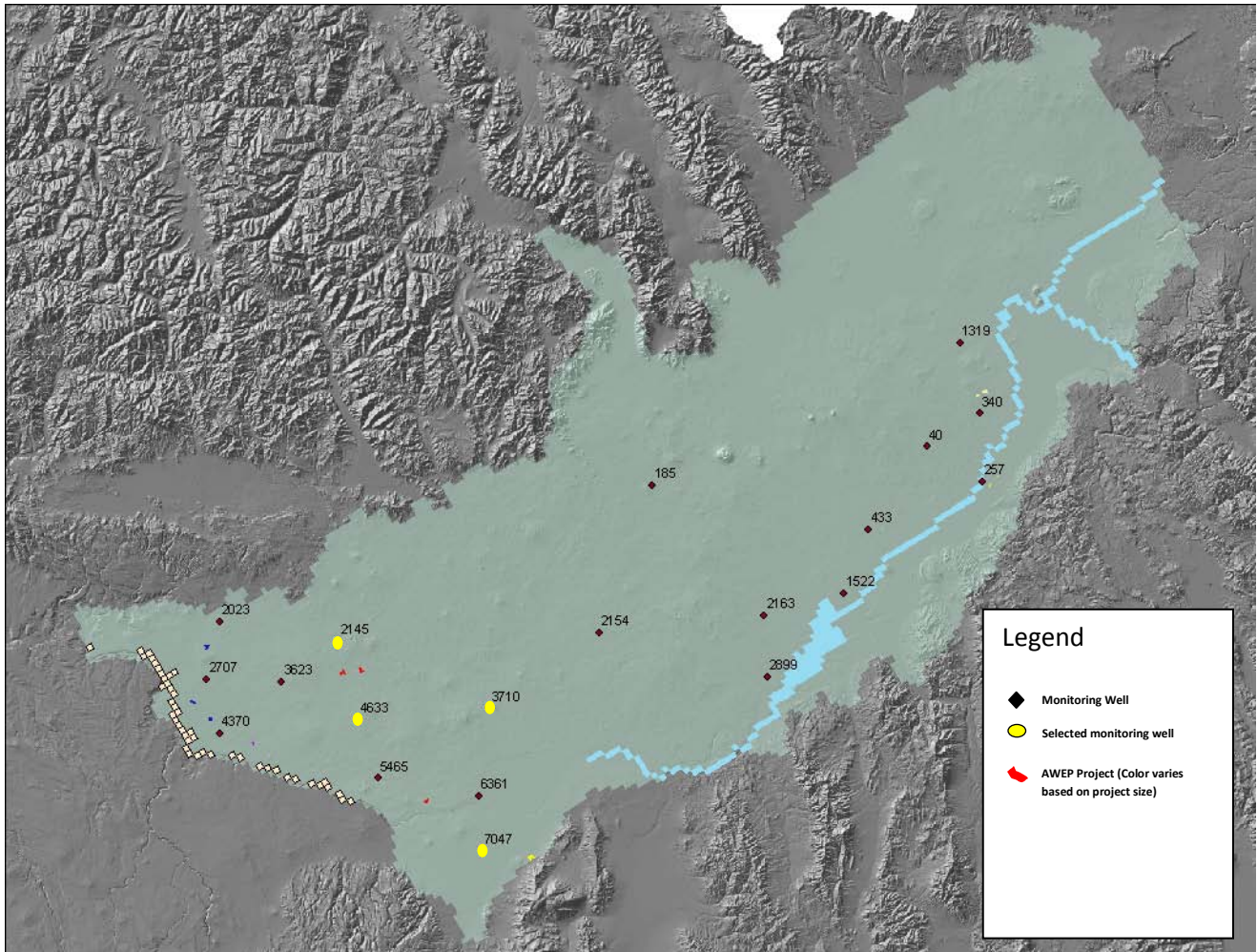
The IWRB's AWEF is a five year proposal subject to federal budget appropriations. Each year provides an opportunity to refine the programmatic requirements, the administrative process, and inform water users of potential project opportunities. Successful projects will promote more interest in the program. Though the federal cost share is significant for most of the programs, it is based on a set price schedule. Therefore, actual material and labor costs may vary throughout the project development period (e.g. the cost of pipe at the time of purchase may be greater than the prices established in the NRCS annual price schedule). Therefore, the non-federal portion of total project costs may be greater than anticipated. Additionally, there may be costs that are not supported by the NRCS such as measuring devices and associated infrastructure for wells required by IDWR to monitor water use through the new project.

The Implementation Committee recommends one-time CAMP funding that can be used to offset some of these additional costs and promote interest in the program. For 2009, the Implementation Committee is recommending that state funds be used to off-set the costs for sponsors of ground water to surface water conversion projects only. For 2010, the Implementation Committee is recommending that state funds be used to off-set the costs for sponsors of all potential AWEF project types.

\*Alternative Recommendation: The Implementation Committee recommends that state funds be allocated to AWEF project sponsors for measuring devices, as they are not supported by NRCS but required by IDWR staff for water measurement purposes.

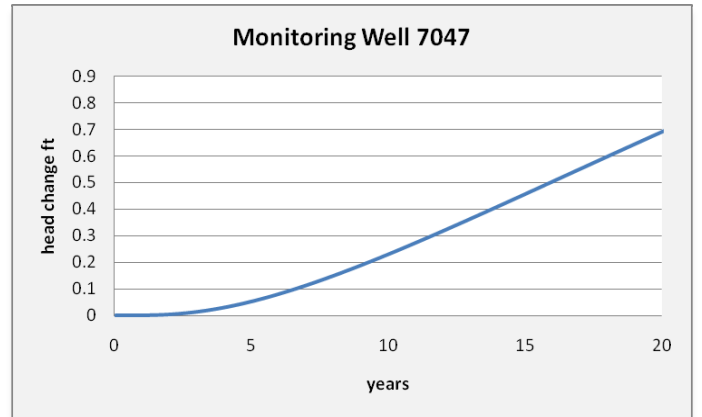
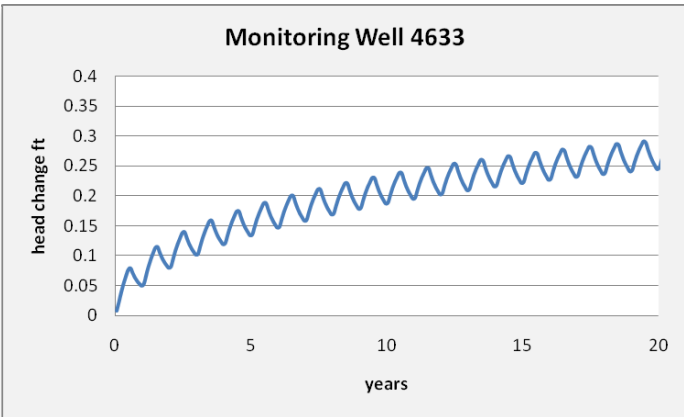
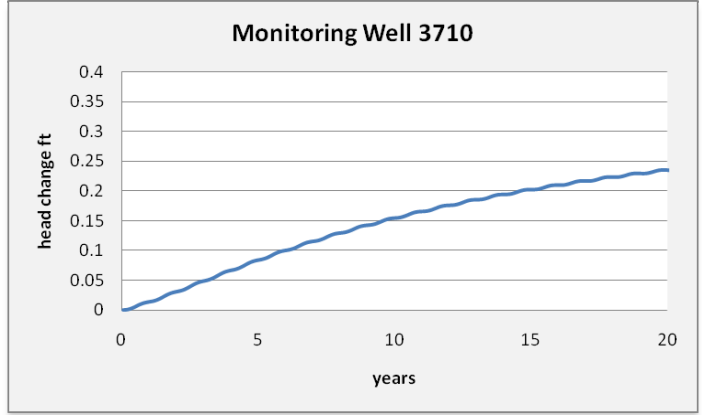
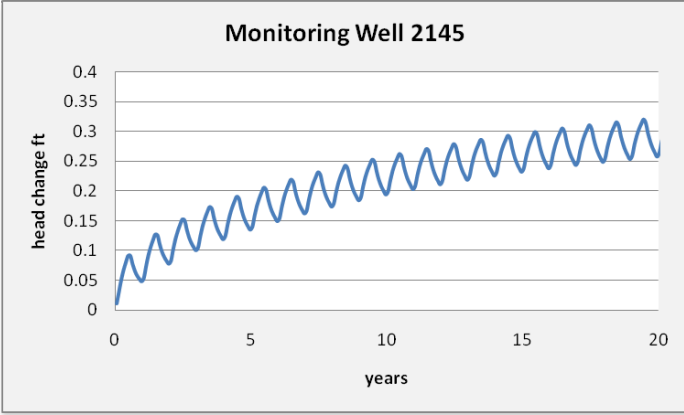
# HYDROLOGIC ANALYSIS

## 2009 AWEF Conversion Projects



# Hydrographs

Ground water level response in selected monitoring wells resulting from reduced ground water pumping and irrigation with surface water every year for 20 years.



Transient response over twenty year period of project operation in reaches with the greatest steady state response.

