ESPA Pumpback Conversion Project

Prepared for:
North Snake Groundwater District
Magic Valley Groundwater District
Clear Springs Foods Inc
Northside Canal Company

For submittal to
ESPA Comprehensive Aquifer Management Plan Implementation Committee &
Governor Butch Otter

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Executive Summary

The ESPA Pumpback Conversion Project proposes to reuse available return flows from the North Side Canal Company (NSCC) system and tailrace return water from Clear Springs Foods, Inc.'s aquaculture facilities (Alternative 1: Crystal Springs, Alternative 2: Snake River Farm). This "new" surface water supply would be pumped to strategic locations on the Snake River Plain to replace groundwater on irrigated lands close to the canyon rim. In addition, some of this water would also be delivered to existing NSCC lands to facilitate the transfer of surface water rights upstream in the NSCC project to replace groundwater on additional lands in the Hazelton Butte area.

In concept, the project would entail the construction and operation of small pumping facilities at existing NSCC sediments ponds and return flows sites, as well as a larger pumping plant at Crystal Springs or Snake River Farm. NSCC return flow and Crystal Springs tailrace return water would be "pumped back" and delivered to up to 10,000 acres located near the canyon rim between Crystal Springs and Box Canyon in Jerome and Gooding Counties. Alternatively, NSCC return flow and Snake River Farms tailrace return water would be used on approximately 3,750 acres within the same area. Unlike prior conversion projects, no storage water would be needed to implement this project, which would in turn increase storage water availability for other uses and projects throughout the ESPA.

The project would improve local and regional ground water levels in the ESPA as well as area spring flows through the conversion of groundwater lands to a reliable surface water supply. In total, the ESPA stands to realize a net benefit of 45,000 acre-feet per year without a reduction in irrigated acreage. Moreover, the Upper Snake reservoir system above Milner Dam realizes a benefit as well in terms of increased storage availability of up to 30,000 acre-feet. Improved aquifer levels will benefit existing irrigation, commercial, municipal, and domestic water supplies. Stabilized and enhanced spring flows in the Thousand Springs reach will benefit aquaculture facilities, water quality, fish and wildlife, as well as aesthetic and recreation values at area state parks (Niagara Springs, Box Canyon).

The project would be constructed in phases over several years with an estimated total cost between $8-18 million dollars (depending upon the alternative pursued). It is anticipated that the North Snake and Magic Valley Ground Water Districts, Clear Springs Foods, North Side Canal Company, and other benefited parties will contribute to the project. The parties also seek to obtain long-term funding through CAMP as well as available federal and state grant programs.

Phase I (2010) for both alternatives entails identifying existing NSCC sediment ponds and return flow sites in the project area where pumping facilities would then be constructed to pump water back to area groundwater irrigated lands. The new facilities and return flow water supply would be incorporated into the larger project as additional phases are completed. Phase II (2010-12) would involve the construction of either the

Crystal Springs or Snake River Farms pumping plant and installation of initial pipeline to deliver tailrace return water for a portion of the project (or the entire project for Alternative #2). Phase III (2010-12) for Alternative #1would complete installation of the full capacity at the Crystal Springs pumping plant to deliver water to the remaining 6,600 acres. Phase IV (2011-13) for Alternative #1 would involve the transfer of existing surface water rights within the NSCC canal system to facilitate additional groundwater conversions (could be overlapped with prior phases too).

The parties submit this initial proposal under the deadline identified by the Governor's office for consideration by the Implementation Committee and the Idaho Water Resource Board for purposes of funding and initiating the project in 2010. The project design and estimates are preliminary and may be amended or modified as needed.

I. Overview and Scope

The Eastern Snake Plain Aquifer (ESPA) has experienced significant declines in water levels over the past 50 years. These declines have in turn resulted in declines in spring discharges issuing from the aquifer. Numerous water calls on water rights associated with aquaculture facilities have led to orders for curtailment of junior ground water rights and mitigation plans to forestall or eliminate the need for curtailment. These mitigation plans have included managed recharge, conversion of ground water irrigated acres to surface or canal water, CREP, and demand buy-down at selected springs. The water user community and the State realize that water conflicts will not effectively lead to the sustainability of the resource.

The State of Idaho, through the Idaho Water Resource Board's Comprehensive Aquifer Management Plan (CAMP), has embarked on a long-term project to restore the ESPA utilizing the above components for changing the aquifer water budget. To date, the primary thrust of proposed CAMP aquifer improvement projects has centered on widespread managed recharge and conversions to surface water supplies requiring financial inducement. The State has also funded a study of raising Minidoka Dam to increase storage capacity in the Upper Snake River Basin. Each of these concepts has had limited application and success due in part to limited water supplies, canal capacities, environmental concerns, difficulty in evaluating impacts, and other institutional issues.

One concept which has not been adequately explored is pumpback systems utilizing existing aquaculture facility tailrace water and irrigation return flows for conversion of ground water irrigated acres above the Snake River canyon rim. This concept, coupled with on-project storage and/or irrigation return flow pumpback for regulation and management of canal systems on the North Side Canal project, offers significant potential for restoration of water levels in the ESPA and stabilization and enhancement of hydraulically connected springs throughout the Thousand Springs reach. The proposed project will provide a net increase in the water supply to lands on the ESPA of about 45,000 acre-feet and will use a reliable source of water that is "new".

Additionally, the concept offers the ability to preserve storage in the Upper Snake reservoirs above Milner Dam. This volume of water is a significant part of the planned aquifer enhancement under the CAMP process. These actions will improve ground water levels, ensure water resource sustainability and delivery, enhance Snake River and tributary water flows and water quality, and benefit fish and wildlife including endangered species. Additionally, from an administrative perspective, additional discharge in certain springs might prevent future delivery calls and aid in water right administration.

II. Project Benefits

Specific potential benefits are as follows:

- Complement or be incorporated into the long-term CAMP actions.
- To provide for the development and use of a "new" source of irrigation water to the ESPA available below Milner that otherwise would not be utilized and lost and which does not impact current irrigation water supplies or water rights in the Upper Snake Basin.
- Reduce the demand for groundwater from the ESPA.
- Improve local and regional ground water levels with resulting benefits for area irrigation, commercial, domestic, and municipal wells.
- Provide potential for beneficially improving the water quality in the Snake River and complementing efforts to meet requirements of the Total Maximum Daily Load (TMDL) targets and improve temperature in the middle Snake River.
- Provide for increased reach gains to springs in the Thousand Springs reach.
- Provide efficient spring flow enhancement through targeted aquifer depletion reduction.
- Enhance spring flows and/or wetland areas in the reach where flows had significantly declined or disappeared.
- Enhance spring flows at facilities where current or likely future water right delivery calls will occur.
- Alleviate the need and expense for acquisition and transport of Snake River storage water for conversions.

- Provide additional discharge to allow flexibility in water deliveries at the ends of Northside Canal Company laterals, corresponding water savings.

- Provide flexibility in distribution of NSCC canal shares throughout the system and increase the capacity of NSCC to supply high lift pump land up-stream in the NSCC system, thereby conserving groundwater supplies by decreasing depletions from groundwater pumping even more.

- Provide significant cost savings to ground water pumpers now experiencing high pumping lifts by converting to canal shares.

- To reduce demand for storage water rentals from the Upper Snake Reservoir system thus enhancing the available supply for other beneficial uses including agricultural and mitigation demands in Water District 120.

- To eliminate and/or minimize conflicts between spring users and groundwater users in Water District 130.

- To provide opportunities to take advantage of 75% cost-share funds available through the Federal programs such as EQUIP, AWEP, USBR grant programs, or other federal program sources of funding.

- Promote maximum beneficial use of available water resources and help achieve aquifer stabilization and rehabilitation.

- Protect and perpetuate present and future economic development of the region.

- Foster in a new era of management and conservation and use of available water resources to solve problems through collaboration and cooperation of multi-party beneficiaries, rather than through litigation.

- To engage water managers in creating new water administration solutions.

- To replace legal and consulting costs with water project engineering, construction and operation.

- To undertake a "shovel ready" project in 2010 providing an expansive array of benefits to multiple stakeholders including aquaculture, groundwater users, surface water users, storage right holders, Idaho Power and the Bureau of Reclamation.

- Benefit resident fish and wildlife species by enhancing spring flows and associated habitats, including Endangered Species (mollusks) through enhanced spring flows throughout the Thousand Springs reach.

III. Process / Concept

A pumping project using existing tailrace water or irrigation return flow will involve significant costs for evaluation, design and implementation, as well as significant cooperation and negotiation among landowners, ground water users, fish producers, Northside Canal Company, and various State agencies. It is therefore prudent to embark on this venture utilizing a pilot project to determine design and operating procedures and evaluate additional concepts that might be applied to other potential sites on the aquifer. The Northside Canal Company and Northside and Magic Valley Ground Water Districts have cooperated in implementing various mitigation plans in response to IDWR Orders to alleviate injury to water rights of Clear Springs Foods, Inc. at its Snake River Farm. The Crystal Springs facility and the Snake River Farm facility, owned and operated by Clear Springs Foods, are located in a reach of the Snake River adjacent to primarily ground water irrigated lands. The location, topography, and access to these facilities tailrace water make the sites suitable for a pumpback project.

The presence of up to 10,000 acres of potentially convertible ground water irrigated lands immediately above the rim and close proximity to active laterals of the Northside Canal Company make the potential for a successful pump back high. At project utilizing the Crystal Springs or Snake River Farm facility for a water supply is recommended for evaluation. In addition, an irrigation return flow pump back system utilizing the existing J8 ponds should be considered for Phase 1 of the project (in both Alternatives #1 and #2).

This project will provide a new water supply near the end of the NSCC system and provide flexibility for use of regulating reservoirs by NSCC. The "new" water source (aquaculture tailrace water) utilized for ground water irrigation conversions will reduce the pressure and demand on Water District 1 storage supplies which have been the sole source of conversion water for previous projects implemented in Water District 130. This then makes storage water more available for other competing uses such as Water District 120 mitigation, USBR flow augmentation, and other private leases for uses above Milner Dam. Augmenting the ESPA with "once used" spring water further helps reduce the conflict between irrigation users and users of potable water from the aquifer (cities, aquaculture, industry, and domestic).

At both the Crystal Springs and Snake River Farm aquaculture facilities IDWR has estimated that junior ground water pumping has decreased the available spring flow and improvement of the diversion system (extension of the diversion canal to a neighboring fish farm to take their water) or groundwater pumping curtailment is warranted. A pumpback project at either of these sites, utilizing convertible land near the rim can provide significant enhancement to the ESPA and provide more effective, targeted aquifer and spring flow restoration, demonstrate the efficacy of the technical and hydraulic components of the concept and evaluate the economic feasibility of this and similar future projects.

IV. Water Quality and Environmental Benefits

Utilization of aquaculture tailrace water for irrigation adds "new" water back into the ESPA in a timely, spatially beneficial, and adequately controlled manner. Unlike storage supplies, the spring water supply for this project is available every year upon demand. There are also defined benefits to water quality in the Mid-Snake River and water quality issues have been implicated to have an impact on area endangered species viability. Endangered species issues threaten historical diversions and operations of water users in the region. U.S. Fish and Wildlife decisions as indicated in their review of the petition to delist the Bliss Rapids snail indicate that the snail is dependent upon the cold water spring outflows and is vulnerable to changes in water quality and ground water levels which are declining and expected to continue to decline. Therefore, FWS recently concluded that delisting the Bliss Rapids snail was not warranted for these reasons.

Return flows from irrigation deliveries and aquaculture uses continue to impact the mid-Snake to some degree. Minimizing these impacts and/or replacing these flows with pristine spring discharges at 58 degrees would provide quantifiable benefits for the Snake River, as well as numerous parties. There are other ESA threatened species in the mid-Snake as well as resident fish and wildlife, State Parks and water for potable uses which can benefit from improved habitat and water quality resulting from this project. Compliance with discharge permits and TMDL requirements by aquaculture and irrigation users is costly and improvements in inflow water quality by this project will help to decrease operational costs associated with permit compliance.

Since both the Crystal Springs and Snake River Farm facilities are amenable to a pumpback project utilizing tailrace water, two alternatives for the project are presented. Alternative #1 includes an irrigation return flow pumping facility to pumpback irriation return flow before it flows over the Snake River Canyon rim and a pumpback system at the Crystal Springs facility. Alternative #1 includes up to around 10,000 potentially convertible acres. Alternative #2 includes the irrigation return flow system and a pumpback system at the Snake River Farm facility. Alternative #2 includes up to around 3,700 acres of convertible land encompassing the designated acres included in the second phase of Alternative #1.

Alternative #1 (Crystal Springs)

A.1. Proposed System Description

The proposed service area of Alternative #1 of the project is shown on the aerial photo of Figure 1 attached to this report. Phase 1 of the project is the irrigation return flow pumping project at the NSCC J8 pond system. The area to be served is based approximately on a map of areas which are identified by IDWR as having ground water irrigation rights and/or by canal shares from the Northside Canal Company. The proposed service area includes up to around 9,879 acres as capable of conversion, including lands that have already received conversion water in the past. Figure 1 also shows the proposed pumping plant location, pipeline layout and distribution system. Also shown in Figure 1 is the proposed supplementary pumping plant at the NSCC, J8 ponds which would be built in Phase 1 of the project and will pump irrigation return flow back into the NSCC system for conversion supplies.

A.2. Concept for Pumping Plant

The water supply for the pumpback project is proposed to be secured from the NSCC return flows and the tailrace return water of the Crystal Springs production raceways. The pumping plant at the Crystal Springs facility would be located at the tailrace as shown on Figure 1. It is not likely that the pumping plant can be placed in Crystal Lake. We propose that the main pumping plant be a multiple pump installation utilizing a number of constant speed pumps and one or two variable speed jockey pumps. The intake structure would be a modification of the tailrace facility.

A.3. Concept for Pipeline

The proposed pipeline for the project would convey the full designed discharge from the pumping plant up the canyon wall and as far north as the confluence with NSCC's J Lateral. In addition to the J Lateral, this main pipeline could also provide water into the N and other Coulees for conveyance by NSCC through these laterals to cooperating converted acres downstream. The pipeline would convey pumped water to the north as far as the J Lateral. The service area of the pipeline would encompass lands that have been included in prior conversion projects. The estimated maximum area served by the project is 9,879 acres, most of which have been identified by IDWR as having ground water rights. Extending the project to the west would provide the most benefit from conversion to adjacent springs. The conversion of lands in the proposed service area west of Crystal Springs provides a high benefit to major springs utilized for aquaculture (Snake River Farm, Clear Lakes Trout, Clear Springs, Rim View Trout, Idaho Power Company, Briggs Spring and Box Canyon).

In order to maintain friction head loss in the pipeline to reasonable values, pipeline sizes were adjusted to provide velocities between 4 and 5 feet per second and multiple pipes were utilized where necessary. No detailed evaluation of hydraulic grade

lines, transient analysis, or locations of vacuum/pressure relief valves was performed for this reconnaissance evaluation. The potential pipeline location and potential locations for hookups to existing ground water irrigation systems is tentative since the actual on-farm distribution systems are unknown. New pipelines are proposed to be steel pipe; however, where pressure levels warrant, buried PVC, HDP, or equivalent could be utilized. The project would provide no sprinkler pressure to individual cooperators and no upgrades to on-farm systems.

At this time no ESPA ground water model analysis or other hydrologic analysis to quantify the benefit of this pilot project to specific springs (Clear Springs, Clear Lakes Trout, Niagara Springs, or others) has been performed. That analysis is pending.

A.4. Topography and Elevation Head

Approximate elevations for pipeline design were obtained from DEM data and pipe line lengths from GIS analyses. The route of the proposed main pipeline is from the pumping plant at the Crystal Springs tailrace northeast up to the top of the rim and north to a confluence with the J Lateral. Some significant elevations (Figure 1) are:

Crystal Springs Tailrace	3003
Top of rim	3421
N3 Lateral	3444
Section 36	3444
J4 Lateral	3430

The elevation head difference from the tailrace to the top of the rim is 433 feet

A.5. Irrigation Water Requirements

Annual water requirement is based on an annual precipitation deficit of 3.25 acre feet per year (Allen and Robison, 2009), application efficiency of 70% and the peak discharge is based on a daily demand of 0.31 inches/day. The estimated annual water requirement for the 9,879 acre project is 45,867 acre-feet. Based on the 0.31 in/day peak water requirement, the peak discharge requirement is 183.8 cfs. For purposes of this reconnaissance level study, the pumping capacity and pipeline capacity will depend on the actual number of acres of convertible land and may vary significantly from the estimated 9,879 acres. The peak discharge of 183.9 cfs is equal to about 8.3 gpm/acre which is an adequate discharge for sprinkler systems.

A.6. Hydraulic Design and Construction Considerations Pumping Plant

Installation of the pumping plant at the Crystal Springs tailrace will require modification of the tailrace to provide a forebay for the plant and access for installation and maintenance. This evaluation does not identify the cost or means of providing electric power to the pumps. Inquiries to Idaho Power Company have been made to

obtain estimates of means and costs for providing power. It is assumed that IPCO does not have sufficient capacity near the Crystal Springs complex to provide power for an additional 13,600 hp. In order to provide reasonable wire to water efficiency for the pumping plant, a variable-speed jockey pump should be specified to track dail and seasonal variations in discharge requirements. The controls for the pumps will therefore be required to accommodate the variable speed pump.

Construction of the pipeline across private property will have to be secured. Design and construction of the pipeline to the rim will require further evaluation to determine whether boring or surface installation or a combination of methods is the best alternative. Soil borings will be required along the proposed pipeline route to determine the extent of shallow rock excavation required and determine costs for pipeline installation. In most locations, multiple pipes will be required for part of the pipeline to accommodate the maximum discharge. Actual pipeline hookup locations to individual cooperators will have to be determined and design of system plumping to accommodate existing systems is required.

A.7. Phasing

There are certain locations at the end of NSCC laterals where sediment ponds receive operational waste water and the opportunity exists for pumping to be constructed this year. The primary return flow pond system with significant flow in the reach is the J8 pond as shown on Figure 1. This pumped water can be pumped back into the NSCC system for delivery to either NSCC shareholder lands or GWD conversions, or directly to adjacent groundwater irrigated lands. The net result is the increase in water supply to irrigated lands and the water savings associated with utilization of sediment pond pumped water in lieu of aquifer water. This pumped water would either replace or supplement water presently targeted to the 920 acres of lands associated with the Ground Water Districts' converted acres in their "Over the Rim" mitigation plan. The benefits of commencing Phase I are to realize the value to NSCC of reducing returns to the river and providing greater efficiencies in the water diverted at Milner and delivered through the NSCC system. Likewise, taking this initial step of securing this supply of water allows the parties to work together to secure the balance of tailrace water and facilities for the balance of the Project.

Time requirements for design, permitting, easement acquisition and funding may not allow construction of the main project to begin in 2010, although that is the goal. However, it is proposed to begin design on the main pumping and distribution system and to design and build the supplemental J8 pumping plant and pipeline in Phase I in 2010. This project, which will provide up to 10 cfs of irrigation return flow water to conversion projects does not require high head lift since the J8 ponds are on the canyon rim. Location of the J8 pumping plant and proposed pipeline are shown on Figure 1 attached. Construction of the J8 plant while the final planning and design of the main pumping plant is completed will allow NSCC personnel to develop management plans for the pump back water and integrate the new source into their system.

Phase II of the main Alternative 1 project at Crystal Springs would likely begin later in 2010 or 2011 pending acquisition of committed funding. This Phase II will consist of approximately 1/3 of the full project, about 3,750 acres of conversion lands and installation of one of the three planned 48 inch pipes north to the NSCC S/J regulating pond as shown on Figure 1. Phase III will entail construction of the full Crystal Springs pumping plant and installation of the remaining two 48 inch pipes to service the remaining 6,600 acres. Transferring of NSCC shares to high lift groundwater pumpers would begin as soon as possible and be completed in Phase IV.

Alternative #2 (Snake River Farm)

B.1. Proposed System Description

The proposed service area of the Alternative #2 of project is shown on the aerial photo of Figure 3. Phase #1 is the same as Alternative #1. Phase #2 would complete the project. The proposed service area includes a total potential for converting about 3,750 acres from the ground water source which is nearly the same area contemplated under Phase II of Alternative #1. Figure 1 also shows a potential pumping plant location, pipeline layout and distribution system. Also shown is a proposed supplementary pumping plant at the NSCC, J8 ponds which would be built in Phase 1 of the project and will pump irrigation return flow back into the NSCC system for conversion supplies, or directly to adjacent groundwater irrigated lands.

B.2. Concept for Pumping Plant

The water supply for the Alternative #2 pumpback project is proposed to be secured from the tailrace of the Snake River Farm production raceways. The pumping plant would be located at the tailrace as shown on Figure 3. It is proposed that the main pumping plant be a two pump installation utilizing a number constant speed pumps and a variable speed jockey pump. The intake structure would be a modification of the tailrace facility.

B.3. Concept for Pipeline

The proposed pipeline for the project would convey the full design discharge from the pumping plant up the canyon wall and as far north as the confluence with the S28 lateral of the Northside Canal Company. In addition the main pipeline could also provide water directly to ground water irrigated lands east of the SRF facility. Conversion of lands east of SRF provide the most hydraulicly efficient enhancement of spring flows in the SRF complex since ground water flow is primarily from east to west. The estimated maximum area served by the pilot project is 3,743 acres, most of which have been identified by IDWR as having ground water rights and some have been included in prior conversion projects already. Extending the conversion project to the west would provide aquifer enhancement that would benefit both Briggs Spring and Box Canyon spring but would provide a lower benefit to the SRF and adjacent springs. The conversion of lands in the proposed project service area provides a high benefit to major springs utilized for aquaculture (Snake River Farm, Clear Lakes Trout, Clear Springs, Briggs Spring and Box Canyon).

In order to maintain friction head loss in the pipeline to reasonable values, pipeline sizes were adjusted to provide velocities between 4 and 5 feet per second and multiple pipes were utilized where necessary. No detailed evaluation of hydraulic grade lines, transient analysis, or locations of vacuum/pressure relief valves was performed for this reconnaissance evaluation.

The potential pipeline location and potential locations for hookups to existing ground water irrigation systems as shown in Figure 3 is tentative since the actual on-farm distribution systems are unknown. New pipelines are proposed to be steel pipe. The project would provide no sprinkler pressure to individual cooperators and no upgrades to on-farm systems

No ESPA ground water model analysis or other hydrologic analysis to quantify the benefit of this pilot project to specific springs (SRF, Clear Lakes Trout, Clear Springs or others) has been performed. That analysis is pending.

B.4. Topography and Elevation Head

Approximate elevations for pipeline design were obtained from DEM data and pipe line lengths from GIS analyses The route of the proposed main pipeline is from the pumping plant at the Crystal Springs tailrace northeast up to the top of the rim and north to a confluence with the J Lateral. Some significant elevations(Figure 1) are:

SRF Tailrace	3021
Top of rim	3255
S28 Lateral	3243

The elevation head difference from the tailrace to the top of the rim is 234 feet.

B.5. Irrigation Water Requirements

Annual water requirement is based on an annual precipitation deficit of 3.25 acre feet per year (Allen and Robison, 2009), application efficiency of 70% and the peak discharge is based on a daily demand of 0.31 inches/day. The estimated annual water requirement for the 3,743 acre project is 17,378 acre feet. Based on the 0.31 in/day peak water requirement, the peak discharge requirement is 69.6 cfs.

The actual number of acres of convertible land and may vary significantly from the estimated 3,743 acres.

The peak discharge of 69.6 cfs is equal to about 8.3 gpm/acre which is an adequate discharge for sprinkler systems.

B.6. Hydraulic Design and Construction Considerations

Hydraulic design and construction processes utilized for Alternative #2 are the same as utilized in Alternative #1. There are however, other considerations such as noise and access which are of more concern in the Alternative #2 scenario because of the proximity to a residential subdivision and traffic.

V. Cost and Preliminary Economic Analysis

Costs for both Alternatives of the Project were estimated based on utilization of steel pipe throughout the system, single speed and variable speed pumps, and utilization of boring for a distance of about 700 feet on the canyon rim. Cost analysis includes the pump project on the NSCC J-8 ponds, the pump station including the intake structure at the Crystal Springs and Snake River Farm tailraces, conveyance pipeline and estimates of acquisition and engineering costs. The easement costs are difficult to estimate as legal services and for water right transactions.

A conservative estimate of costs for infrastructure are:

Alternative #1	Phase 1	$ 2,270,849
	Annual Power Cost/acre	$18.00
	Phase II,III, IV	$16,800,000
	Annual Power Cost/acre	$183.85
Alternative #2	Phase I	$ 2,270,849
	Phase II	$ 9,566,939
	Annual Power Cost/acre	$95.04

The economic feasibility of the potential powerhouse locations was evaluated using standard net annualized costs. This approach involves amortizing the infrastructure initial costs and adding the annual energy cost to determine a total annual cost for the project. Project life was assumed to be 20 years, and the discount rate was assumed to be 6% which is the likely long-term investment return for a conservative portfolio. The cost of power was estimated at $0.06/Kwh. This analysis indicates that the annual cost of power for Alternative #1 is approximately $184 per acre and for Alternative #2 is approximately $95 per acre.

VI. Funding Proposal – Contributions

Given the scope of the ESPA Pumpback Conversion Project identified, the proposal contemplates that the Project will be completed in phases. Hence, as the phases are designed and the necessary documents signed, funding will be provided. The private parties shall provide the initial engineering and design for each phase. These costs shall be credited against the overall private contribution for each phase. The proposal does request a commitment from the State to fund the identified levels as each phase of the project is developed

Alternatives #1 and #2

Phase I (2010): NSCC Return Flow Conversions: At identified locations within the NSCC system, NSCC through normal canal operations, returns surface water to the Snake River system over the Snake River canyon rim. The private parties contemplate capturing and pumping this water back to converted groundwater irrigated lands adjacent to or near the canal company retention ponds or spill sites. Up to 4,000 acre-ft of conversion water shall be recovered and delivered to the converted lands. The intermittent availability of this water dictates that it will be a supplemental water supply to either the Crystal Springs or Snake River Farms tailrace return water identified under Phase II. Funding by the private parties shall be both in terms of dollars and in-kind services. The private monetary funding shall be supplemented by any funding received by grants from federal or state funding programs not associated with CAMP. Funding of Phase I shall include up to 33% of private parties services and dollars.

During Phase I, the private parties shall be seeking funding assistance from various federal and state programs to aid in such actions as retro-fitting delivery systems, piping and construction costs which will be incurred in Phases II and III.

Alternative #1

Phase II (2010-12): The Crystal Springs Tailrace Return Conversions: This phase of the Project consists of installation of the pumping plant and pumping Crystal Springs tailrace return water to approximately 3,300 acres within the NSCC system for delivery to identified lands historically irrigated with groundwater. The private parties contemplate phasing in these conversions over a number of years as the parties seek additional funding sources from state and federal grants. Funding ratios shall be at the same proportion as those identified under Phase I. Additionally, to ensure that participating landowners do not realize increased operational costs, beneficiaries identified in Phase III shall provide additional funding. Preliminary cost estimates for Phase II are approximately $6.5M, of which the private parties will commit to pay up to 33% at the time of State funding and approval of Phase II. The private parties recognize that funding will occur over a number of years both on the private, state, and federal level. The private parties contemplate that monetary commitments by these parties or others who join in supporting the project, will include fees paid into CAMP.

Phase III (2011-13): Completion of Remaining Crystal Springs Conversions. This phase of the project consists of installation of the remaining pumping plant capacity and pipelines to deliver water to the remaining 6,600 acres within the project area. The funding contribution is anticipated to be the same as Phase II.

Phase IV (2011-13): NSCC Shares to Facilitate Additional Groundwater Conversions: The final phase of the Project is to facilitate the transfer of NSCC shares from lands now delivered Crystal Springs tailrace return water, to locations up-gradient in the NSCC system to provide for additional groundwater conversions near the Hazelton Butte area. Again, the expected contribution by private parties is expected to be up to 33% as supplemented by other sources or contributors. This phase could begin or overlap with prior phases as needed.

Alternative #2

Phase II (2010-12): The Snake River Farms Tailrace Return Conversions. This phase of the Project consists of installation of the pumping plant and pumping Snake River Farms tailrace return water to approximately 3,750 acres within the NSCC system for delivery to identified lands historically irrigated with groundwater. The private parties contemplate phasing in these conversions over a number of years as the parties seek additional funding sources from state and federal grants. Funding ratios shall be at the same proportion as those identified under Phase I. Additionally, to ensure that participating landowners do not realize increased operational costs, beneficiaries identified in Phase III shall provide additional funding. Preliminary cost estimates for Phase II are approximately $8.5M, of which the private parties will commit to pay up to 33% at the time of State funding and approval of Phase II. The private parties recognize that funding will occur over a number of years both on the private, state, and federal level. The private parties contemplate monetary commitments by these parties or others who join in supporting the Project will include fees paid into CAMP.