

PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project	
Irrigation Diversion Consolidations & Water Conservation; Upper Salmon River, Idaho	
BPA project number	9600700
Contract renewal date (mm/yyyy)	10/1999
Multiple actions? (indicate Yes or No)	Yes
Business name of agency, institution or organization requesting funding	
Lemhi County Soil & Water Conservation District	
Business acronym (if appropriate)	LS&WCD
Proposal contact person or principal investigator:	
Name	Bruce Mulkey, Chairman LS&WCD
Mailing address	Rt. 1, Box 52
City, ST Zip	Salmon, Idaho 83467
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Email address	ckeller@dmi.net
NPPC Program Measure Number(s) which this project addresses	
7.7, 7.8G, 7.8H, & 7.10	
FWS/NMFS Biological Opinion Number(s) which this project addresses	
NMFS letters dated 1/10/96 and 1/30/98 concurring with BOR Biological Assessment of Tasks I, II, III, & IV "would not adversely affect listed or proposed species or their critical habitat" and USF&WS letter dated 2/12/98 that the "Service concurs with the determination that the project may affect but is not likely to adversely affect the bull trout, Ute Ladies'-tresses, peregrine falcon or bald eagle".	
Other planning document references	
Tasks I-IV (FY-96/FY-99) supported by the Sho-Ban Tribe, Idaho Department of Fish & Game, National Marine Fisheries Service, U.S. Fish & Wildlife Service, Lemhi-Pahsimeroi-East Fork Model Watershed Program, and participating local irrigation companies and private landowners.	
Short description	
Irrigation consolidation of gravity diversions 10 Acre Canal (S-13) with the Pope Canal (S-14) and the Kane/Ramey Canal (S-12) with the Edwards Canal (S-11). Construct new fish screens on S-14 and S-11.	
Target species	
Sockeye, Spring & Summer Chinook, Steelhead, Bull Trout & resident non-anadromous species.	

Section 2. Sorting and evaluation

Subbasin
Upper Snake River, Upper Salmon River

Evaluation Process Sort

CBFWA caucus	CBFWA eval. process	ISRP project type
X one or more caucus	If your project fits either of these processes, X one or both	X one or more categories
X Anadromous fish	Multi-year (milestone-based)	X Watershed councils/model

			evaluation)		watersheds
X	Resident Fish	X	Watershed project eval.		Information dissemination
	Wildlife				Operation & maintenance
				X	New construction
					Research & monitoring
					Implementation & mgmt
					Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
9401500	Idaho Fish Screening Program	Augments IDF&G Fish Screening Program
9306200	Salmon River Anadromous Fish Passage Enhancement, Idaho	Augments Model Watershed Fish Passage Program

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
FY-96	Consolidated four (4) gravity diversions into one (1). Eliminated three (3) diversions from the Salmon River.	Reduced juvenile entrainment & enhanced juvenile/adult passage & survival.
FY-96	Converted from flood to sprinkler irrigation systems.	Enhanced instream flow on the Salmon River near Challis, Idaho.
FY-97/98	Consolidated three (3) gravity and one (1) pump diversion into one (1). Eliminated two (2) gravity and one (1) pump diversions.	Reduced juvenile entrainment and enhanced passage & survival.
FY-97/98	Converted from flood to sprinkler irrigation systems.	Enhanced instream flow on the Salmon River near Challis, Idaho.
FY-98	Construct new fish screen on consolidated diversion (S-28) (Construct Spring 99)	Enhance juvenile passage & survival.
FY-99	Construct new fish screen on consolidated diversion (S-32)(Construct Fall 99).	Enhance juvenile passage & survival.

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reduce juvenile entrainment & enhance juvenile/adult passage & survival.	A	Consolidate the 10 Acre Canal with the Pope Canal; consolidate the Kane/Ramey Canal with the Edwards Canal. Eliminate from the Salmon River the 10 Acre & Kane/Ramey gravity diversions.
		B	Construct new fish screens on the Pope Canal and Edwards Canal

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	01/2000	05/2000	Reduce juvenile entrainment & enhance juvenile/adult passage & survival	Stabilize inriver berms, new headgates, canal work, and new fish screens operational for the the 2000 irrigation season.	
				Total	100%

Schedule constraints Funding must be available to coincide with the non-irrigation season for construction. Fish screens and associated diversion structures can only be constructed from November 1st to mid-December and late February to April 15th.
Completion date 2002

Section 5. Budget

FY99 project budget (BPA obligated):	\$\$499,800
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FY2000 budget by line item

Item	Note	% of total	FY2000 (\$)
Personnel	IDFG engineering, design, survey & inspection of Pope fish screen @ \$9,000 and Edwards fish screen @ \$9,000; NRCS construction inspection of Pope canal work, berm stabilization, headgate/trash rack, & bifurcation structure @ \$20,445; NRCS construction inspection of Edwards canal work, berm stabilization, headgate/trash rack, & bifurcation structure @ \$ 15,575.	7%	\$54,020
Fringe benefits	Included with Personnel above		
Supplies, materials, non-expendable property	Pope fish screen fabrication labor & materials @ \$81,700; Edwards fish screen fabrication labor & materials @ \$51,000.	18%	\$132,700

Operations & maintenance			
Capital acquisitions or improvements (e.g. land, buildings, major equip.)			
NEPA costs			
Construction-related support			
PIT tags	# of tags:		
Travel			
Indirect costs	LS&WCD administration (5%) @ ??	5%	\$35,896
Subcontractor	Pope fish screen civil works @ \$93,000; Edwards fish screen civil works @ \$78,000; Pope berm stabilization, head gate, canal work, & bifurcation structure @ \$204,450; Edwards berm stabilization, head gate, canal work & bifurcation structure @ \$155,750.	70%	\$531,200
Other			
TOTAL BPA REQUESTED BUDGET			\$753,816

Cost Share Contributions - Tasks I-IV

It is important to note several state and federal agencies as well as private individuals have made significant financial contributions to this project (Tasks I-IV) to date. They are: (Contributions include direct salaries, benefits, overhead, & travel or contract cost. All FY-99 costs are projected).

- a. BoR (FY-95) Appraisal Study of options including siphon, pumping,-- \$ 24,000 conversion to sprinkler irrigation.
- b. BoR (FY-96 & 97) Challis & Gini canal surveys----- \$ 7,000
- IDFG (FY-98 contracted) additional canal survey----- \$ 10,000
- c. BoR (FY-96 & 97) (contracted) cultural & historical survey----- \$ 7,000
- BoR (FY-98) (contracted) On-site inspection during construction----- \$ 3,000
- d. BoR (FY-96/97) Planning & Project Coordination----- \$ 45,500
- BoR (FY-98) Planning & Project Coordination----- \$ 12,000
- e. NRCS (FY-97) Engineering Appraisal Study of S-26 options----- \$ 2,000
- NRCS (FY-98) Engineering Assistance of Design Review prior to---- \$ 1,750
- construction.
- f. NRCS (FY-97) Technical Assistance on pre-design options & cost---- \$ 4,500
- estimates.
- NRCS (FY-98) Technical Assistance for on-farm construction.----- \$ 2,200
- g. BoR (FY-98) Design of Gini Canal diversion berm, headgate, trashrack, \$ 35,000
- canal enlargement, & bifurcation structure.
- h. On-farm sprinkler system designs (private landowner provided)----- \$ 1,800
- I. Pivot sprinkler, pump, and power to be provided by Joe Chester----- \$ 35,000

(landowner-FY-98).

j. Vegetation removal, canal filling & fence rebuilding to be provided by- \$ 20,000

Ray Laverty (landowner-FY-98).

k. BoR survey, design, & specs. for berms, headgates, bifurcation structures \$30,000

etc. for Pope (S-14) & Edwards (S-11) canals FY-99 funding.

l. BoR project coordination, NEPA, and all permitting necessary for S-14 & \$12,000

S-11 work. FY-99 funding.

m. BoR contract for archaeology survey at S-14 and S-11 sites. \$ 7,000

Sub-total of Contributions (FY-96/FY-99)----- \$259,750

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Bureau of Reclamation	Engineering, design, specs. & Project Coordination, NEPA, arch. surveys for S-14 & S-11	6.5%	\$49,000
Total project cost (including BPA portion)			\$802,816

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$250,000	\$250,000		

Section 6. References

Watershed?	Reference

PART II - NARRATIVE

Section 7. Abstract

The goal of this Task (V) is to reduce juvenile migration delay, reduce juvenile entrainment, and enhance juvenile and adult passage and survival by elimination of two (2) gravity irrigation diversions (10 Acre & Kane/Ramey) from the Salmon River and by constructing two (2) new fish screens meeting NMFS criteria on the remaining consolidated Pope and Edwards Canals.

The overall objective of this multi-year project has been to reduce the number of irrigation diversions, enhance instream flows through water conservation measure by converting from flood to sprinklers, and reduce juvenile delay & entrainment, and improve survival by construction of NMFS approved fish screens on the Upper Salmon River, Idaho. Eliminating diversions reduces opportunities for juvenile entrainment and migration delay, eliminates the need for irrigators to enter the river with heavy equipment (up to twice a year) to construct “push-up” gravel diversions berms, and converting some irrigators from flood to sprinkler irrigation which enhances in-stream flows. The elimination of the Keyes, Lower McGowan, and Upper McGowan canals and conversion of several irrigators from flood to sprinkler systems completed in Task I (FY-96) resulted in a savings of about 9,000 acre feet annually. The elimination of the Laverty (S-29) diversion (Task II & III) will result in about 10,800 acre feet saved annually that will remain in the Salmon River and provide a new NMFS approved fish screen on the Genie Canal. Task IV will provide a NMFS approved fish screen on the Challis Canal. Task V (FY-00) will consolidate four diversions into two and provide two NMFS approved fish screens.

Section 8. Project description

a. Technical and/or scientific background

The goal of this Task (V) is to reduce juvenile migration delay, reduce juvenile entrainment, and enhance juvenile and adult passage and survival by elimination of two (2) gravity irrigation diversions (10 Acre & Kane/Ramey) from the Salmon River and by constructing two (2) new fish screens meeting NMFS criteria on the remaining consolidated Pope and Edwards Canals.

The overall objective of this multi-year project has been to reduce the number of irrigation diversions, enhance instream flows through water conservation measure by converting from flood to sprinklers, and reduce juvenile delay & entrainment, and improve survival by construction of NMFS approved fish screens on the Upper Salmon River, Idaho. Eliminating diversions reduces opportunities for juvenile entrainment and migration delay, eliminates the need for irrigators to enter the river with heavy equipment (up to twice a year) to construct “push-up” gravel diversions berms, and converting some irrigators from flood to sprinkler irrigation which enhances in-stream flows. The elimination of the Keyes, Lower McGowan, and Upper McGowan canals and conversion of several irrigators from flood to sprinkler systems completed in Task I (FY-96) resulted in a savings of about 9,000 acre feet annually. The elimination of the Laverty (S-29) diversion (Task II & III) will result in about 10,800 acre feet saved annually that will remain in the Salmon River and provide a new NMFS approved fish screen on the Genie Canal. Task IV will provide a NMFS approved fish screen on the Challis Canal. Task V (FY-00) will consolidate four diversions into two and provide two NMFS approved fish screens.

Hundreds of irrigation diversions provide surface water for irrigating pasture land and hay crops throughout the Salmon River basin. A 1992 Idaho Fish and Game survey identified 278 gravity irrigation diversions located in critical migratory habitat areas that are occupied by Snake River sockeye, spring/summer chinook, steelhead, and bulltrout.

Presently there are four (4) gravity diversions on the Salmon River approximately 5 miles south of Salmon, Idaho. All are right bank diversions and all come out of the river in a 1.4 mile reach (RM 266.7 to RM 265.3). During low flow periods in spring and fall, which coincides with peak smolt out migration, all four (4) individual canal companies *each* may construct “push-up” gravel berms *across the entire Salmon River* thereby funneling a high percentage of all fish into their respective diversion canal. The “push-up” inriver gravel berms also may cause physical barriers for upstream migrating adult salmon and steelhead as well. The migration of anadromous fish, both juvenile and adults, can be severely impacted by the current irrigation system configuration.

All four (4) canals have antiquated fish screens and juvenile bypass systems. The Pope Canal (S-14) is the largest of the four canals and the furthest upstream. A fish entrained in the Pope Canal must migrate almost 1 mile down to the existing fish screen. *The Pope Canal fish bypass return pipe drops the fish inside of the gravel inriver berm for the 10 Acre Canal (S-13)* so the fish are then entrained in the 10 Acre Canal and must travel to the 10 Acre Canal fish screen and find the bypass pipe. The Kane/Ramey Canal (S-12) “push-up” berm is only a few hundred feet downstream of the 10 Acre Canal fish screen so most fish will enter this canal as well. When the Kane/Ramey fish screen was constructed in the early 1960's *the fish return bypass was not constructed to the Salmon River but was*

terminated into the Edwards Canal (S-10) just above the Edwards fish screen. A fish entrained in the Kane/Ramey Canal has not only to find the bypass pipe for the Kane/Ramey screen but also the Edwards fish screen bypass as well.

Task V will combine the 10 Acre Canal with the Pope Canal and the Kane/Ramey Canal with the Edwards Canal therefore eliminating two (2) diversions from the Salmon River. Work will also include a NMFS approved fish screens on the remaining two diversions and stabilization of the inriver berms to eliminate the need for annual “push-up” berm construction. Berm stabilization was part of the successful work done on the Genie Canal (S-28) under Task II & III.

b. Rationale and significance to Regional Programs

Task V objectives are to reduce juvenile entrainment and enhance juvenile & adult passage and survival by consolidating diversions and providing state-of-the-art fish screens. These objectives are all consistent with the Councils 1994 F&W program measures 7.10, 7.8G, 7.8H, and 7.7 respectively.

c. Relationships to other projects

This Task complements the ongoing Idaho Fish & Game fish screen program, the Lemhi-Pahsimeroi-East Fork Model Watershed fish passage work, and the now complete Bureau of Reclamation Lemhi River Water Conservation Demonstration Project.

d. Project history (for ongoing projects)

Task I of this project (9600700) in FY-96 was on the Salmon River near Challis, Idaho and was the consolidation of the Upper McGowan, Lower McGowan, and Keyes canals with the Challis canal and conversion of several flood irrigators to sprinkler irrigation. The canal furthest upstream, the Challis, was enlarged from a capacity of 120 cfs to 170 cfs. The Upper McGowan, Lower McGowan, and Keys canals were then plugged and abandoned. Water users in the lower three canals transferred their legal point of diversions with the Idaho Department of Water Resources to the Challis canal. With the conversion of several ranches to more efficient sprinkler irrigation (cost-shared) the amount of water now diverted from the Salmon River was reduced by about 9,000 acre feet annually that remains in the Salmon River enhancing instream flows for ESA listed and resident fish species. The construction phase of Task I was started in February 1996 and completed in June 1996.

Task II of the project (FY-97) is the consolidation of the Laverty (S-29), Hammond/Leaton (S-26), and Chester river pump with the Gini canal (S-28) along with conversion of Laverty & Cutler ranches to sprinkler systems.

Task III (FY-98) was a request for additional funding to complete the consolidation work described in Task II above and to provide a NMFS approved fish screen on the Genie Canal after the consolidation is completed. The new S-28 fish screen will be operational by 4-15-99.

Task IV (FY-99) will provide a NMFS approved fish screen on the Challis Canal now that the consolidation is complete. The new Challis Canal fish screen will be operational by 4-15-00.

e. Proposal objectives

The primary objective of this Program and ongoing Tasks (I-V) is to implement actions to reduce juvenile entrainment, enhance juvenile and adult passage and survival, and enhance instream flows on the upper Salmon River by diversion consolidations, conversion from flood to sprinkler systems, construction of state-of-the-art NMFS approved fish screens, and stabilizing inriver diversion dams. Tasks I-IV have met these objectives.

f. Methods

Pre-project Canal Flows:	Post-project Canal Flows:
Pope - 60 cfs	Pope - 85 cfs

10 Acre - 25 cfs
 Kane/Ramey - 15 cfs
 Edwards - 35 cfs
Total - 135 cfs

10 Acre - Eliminate - combine w/ Pope
 Kane/Ramey - Eliminate - combine w/ Edwards
 Edwards - 50 cfs
Total - 135 cfs

Construction will consist of the following activities:

1. Construction of a new headgate and trash rack to replace the existing old headgates on the Pope Canal and Edwards Canal . The new structures will be sized to accomodate the additional water required for the consolidation of the 10 Acre Canal with the Pope Canal and the Kane/Ramey Canal with the Edwards Canal. The headgate/ trash rack and in-river diversion berms will be designed by the Bureau of Reclamation.

2. The existing unstable rock diversion berms on the Pope Canal and Edwards Canal headings will be reinforced with larger material and stabilized to eliminate the annual requirement for the irrigators to put heavy equipment in the Salmon River to rebuild the berm.

3. Construction of a new fish screen on both the Pope and Edwards Canals to NMFS criteria. Screens will be designed by the Idaho Department of Fish & Game. Construction of the new fish screens will occur prior to 4-15-00.

4. Construction of a bifurcation structure on the Pope Canal & the Edwards Canal will drop water back into the 10 Acre Canal and Kane/Ramey Canal respectively. The bifurcation structures will be designed by the Bureau of Reclamation.

5. Enlargement of the first mile of the Pope Canal (widen approximately 2 feet). This enlargement will carry the water for the 10 Acre Canal prior to being dropped back into the existing canal. The heading for the 10 Acre Canal will be abandoned and filled.

6. Enlargement of the first 300 yards of the Edwards Canal (widen approximately 1 foot). This enlargement will carry the water for the Kane/Ramey Canal prior to being dropped back into the existing canal. The heading for the Kane/Ramey Canal will be abandoned and filled.

Prior to construction the Lemhi Soil & Water Conservation District (LS&WCD) will enter into agreements with the Pope Canal & Edwards Canal and Idaho Department of Fish & Game (IDF&G). The Pope & Edwards Canal owners and IDF&G will contract for the work to be completed. The Bureau of Reclamation will provide structure designs for the in-river diversion berms, headgates/trashracks, and bifurcation structures. The NRCS will provide construction oversite and inspection of this work. The Idaho Department of Fish and Game will design the new fish screens and provide construction supervision and inspection of the new fish screens. The IDFG will continue to be responsible for operation and maintenance of the screens after construction. Construction activities for the canal widening, in-river berm stabilization, headgate/trashrack, bifurcation structures, and fish screens will start in late February 2000 and be completed in June 2000. The Pope and Edwards canals will be dry during the construction period. This will eliminate any construction generated sediment except for in-river work necessary to stabilize the river diversion berms.

Construction is limited to the non-irrigation season (November through April), severe winter weather conditions (typically December-February), and low water conditions for in-river work.

In-river Berm Stabilization - Traditionally the Pope, 10 Acre, Kane/Ramey, & Edwards diversion berms are constructed twice annually (low water before spring run-off and again in August) by hauling in rock or utilizing existing rock that has washed downstream from the old berm. Heavy equipment such as crawlers, excavators, and or front end loaders are used to construct the rock berms. To make the diversions more permanent and eliminate the twice annual need to construct the rock berms a trench will be excavated 200-300 feet from the headgate upstream in the same alignment as the existing berm. Either metal sheet pile or pre-cast concrete blocks will be placed in the trench and covered with large rock for stability.

Headgate/trashrack/spillway - A small cofferdam will be constructed on both the Pope and Edwards point of diversion to isolate the work area. The cofferdams will be constructed around the existing old headgate/spillway structures so construction of the new structures will be in the "dry". Construction of the headgates/trashracks/spillways is scheduled to start in February 2000.

Canal Widening - Canal widening of the Pope and Edwards canals will start behind the existing headgates and cofferdam. This work will start in February 2000. All work will be in "the dry".

Bifurcation Structures - The structure to split the 10 Acre Canal water back out of the Pope Canal will be constructed in a location just prior to where the existing Pope Canal crosses highway 93. The structure to split the Kane/Ramey water back out of the Edwards Canal will be constructed in a hay field owned by Mr. Edwards. This work will start in February 2000 and be completed by late April.

Environmental Evaluation

Hydrology

The climate of the Salmon River Valley near Salmon can easily be described as cold desert. Annual rainfall varies greatly throughout Lemhi County with mountain tops receiving about 40 inches of precipitation annually and valley areas receiving less than 10 inches. Average annual precipitation in Salmon, Idaho is 9 inches.

The long-term flow measurement point on the Salmon River, nearest the project, is about 5 miles downstream at RM 259 near the town of Salmon which measures flows from a drainage area of about 3,760 square miles. Mean annual discharge at Salmon is about 642,000 acre-feet. Flows normally peak in June and then decrease through summer until September. Average monthly flows at Salmon range from a high of 11,790 cfs in June to a low of 445 cfs in August.

Water Quality

Existing Salmon River water quality is temporarily degraded near the four diversion sites each spring (and sometimes during summer) when heavy construction equipment enters the river bed and is used to reconstruct the in-river rock wing dams. Disturbance of the streambed during berm reconstruction releases sediment which flows downstream. Some of the released sediment may settle into gravels downstream or continue to be moved by the water column. There is also danger of petroleum spills and the occurrence of other toxic substances resulting from use of power equipment during rock wing dam reconstruction.

Temporary minor releases of sediment may occur as a result of heavy equipment needed to place large boulders to stabilize the existing Pope & Edwards diversion dams. However, single short term releases would be no worse than those that occur presently during annual reconstruction of the rock wing diversion dams. The long-term effect of the project on Salmon River water quality would be positive.

Several measures will be undertaken during construction to assure that no significant decreases in water quality occur. Staging areas will be located away from the Salmon River to ensure that any chemical spills or leaks would not reach the water. Reclamation and the Natural Resource Conservation Service will assure that the appropriate federal, state, and local permits are obtained before construction. Any conditions included in these permits will be made a part of contract specifications. The Pope & Edwards Canal users will apply to the Army Corps of Engineers and State Department of Lands and Department of Water Resources for a Section 404 and State Stream Alteration Permit (if needed). Any mitigation measures required to protect water quality under these permits would be adhered to.

Fish and Wildlife

Important fish species using the Salmon River in the project area include the anadromous spring/summer chinook salmon, sockeye salmon, and steelhead. While sockeye and spring chinook salmon do not spawn in or near the proposed project site, this area acts as a migration corridor for juveniles and adults. Resident fish species such as rainbow, cutthroat, bull trout and mountain whitefish also occur in the area. Many of the native resident species face the same passage problems as salmon and steelhead during their up and downstream movements.

This task will improve both up and downstream passage conditions by consolidating four diversions into two. Completion of this task will also eliminate annual streambed disturbances caused by rock wing dam reconstruction upon closure of two gravity diversions. During periods of low river flow, these gravel berms may be constructed entirely across the river which tends to funnel nearly all migrating juvenile salmonids into diversions. Adult fish passage is also impaired under similar situations. These improvements will have a positive effect on all fish species that move through the reach at some point in their life cycle. Benefiting species would include spring/summer chinook salmon, sockeye salmon, steelhead and all of the native resident species occurring in the Salmon River.

Endangered Species

Four species of fish currently listed under the Endangered Species Act occur in the project area: sockeye salmon (Endangered), spring/summer chinook salmon (Threatened), steelhead (Threatened) and bull trout (Threatened).

Migration of adult sockeye salmon in the Salmon River to Redfish Lake begins as early as July and continues through October. Arrival at Redfish Lake (50 miles upstream from the task site) peaks in August. Migrant juvenile sockeye salmon leave Redfish Lake from late April through May. Downstream migration of chinook, sockeye, and steelhead smolts coincides with the start of the irrigation season. Instream flows are low at this time as “runoff” of the mountain snow pack is normally in mid to late June. Because instream flows are low, irrigators must construct the “push-up” gravel berms which results in a high percentage of smolts becoming entrained in the canals and delayed on their migration.

Migration of adult spring/summer chinook salmon in the Salmon River (near Salmon, Id.) begins in early June and continues throughout the summer until about the end of September. Peaks in upstream movement usually occur in mid-July. Downstream movement of spring chinook juveniles occurs throughout most of the year. The out migration of pre-smolts occurs from January to June with the peak out migration in April and May and mid-September through mid-November.

Completion of this task will benefit ESA listed sockeye, spring/summer chinook salmon, bull trout and steelhead. The elimination of two diversions on the Salmon River will improve passage conditions for both upstream and downstream migrating fish. Several additional measures are included in the task to ensure that there will be no adverse impacts to salmon. These measures include:

1. In-water work will be limited to stabilizing the rock diversion berms of the Pope and Edwards canals.
2. The construction schedule will be coordinated with the Idaho Department of Fish & Game (IDFG), National Marine Fisheries Service (NMFS), and the Fish and Wildlife Service (FWS).

The Salmon River has been designated by NMFS as critical habitat for sockeye and spring chinook salmon. This task will not disturb the river in the project area. The project will provide a beneficial long-term effect on critical habitat by improving fish passage conditions on the Salmon River near Salmon, Idaho.

g. Facilities and equipment

Not applicable. IDF&G has existing facilities and equipment necessary for operation and maintenance (O&M) of the fish screens after construction. The irrigators will be responsible for O&M of diversion structures and inriver berms after construction.

h. Budget

Consistent with Tasks III & IV IDF&G will design the new screens for the Pope and Edwards Canals and fabricate all metal work. IDF&G will provide construction inspection of the civil work contract for the screens. BoR will provide engineers for design of the canal enlargement, headgate structure, berm stabilization, and bifurcation

structures as needed. NRCS will provide design review and construction inspection of these facilities as was done on the Task III & IV work.

Section 9. Key personnel

Lemhi County Soil & Water Conservation District (LS&WCD):

Bruce Mulkey, Chair - Mr. Mulkey is experienced in working with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program. Lynn Herbst, Treasurer & Contracting Officer - Mr. Herbst has experience working with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program.

Katie Slavin, Administrative Assistant - Mrs. Slavin has experience in BPA Grant processing and administration in working with the Lemhi-Pahsimeroi-East Fork Model Watershed Program.

Other S&WCD Board Members - Mr. Kelly Thomas - Secretary; Mr. Ed Tolman, and Mr. Dale Edward. These are all local landowners and have experience with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program.

Others:

Mr. Bob Minton, Soil Conservationist - Mr. Minton is employed by the Natural Resources Conservation Service in Salmon, Idaho and will provide technical expertise for Task completion. Mr. Minton has worked for the NRCS since 1976. Bob also has experience with BPA Model Watershed Grants.

Mr. Chuck Keller, Fishery Program Manager - Mr. Keller is employed by the Bureau of Reclamation in Salmon, Idaho and provides assistance to the S&WCD's in budget proposals and program coordination. He served as the Idaho Fish Screen Program Coordinator from 1992-1995 under an Interagency Personnel Agreement from Reclamation to the Idaho Department of Fish & Game. Mr. Keller has worked for the federal government since 1972 and has a BS degree in fisheries biology from the University of California; Humboldt in 1970. He also worked on Tasks I, II, III, & IV.

Mr. Matt Hightree, Engineer - Mr. Hightree is employed by the Idaho Department of Fish & Game in Salmon, Idaho and will provide all engineering and specifications necessary of the construction of the Pope and Edwards fish screens.

Mr. Dale Gooby, Engineer - Mr. Gooby is employed by the Natural Resources Conservation Service in Salmon, Idaho and will provide engineering technical expertise for this Task completion. Mr. Gooby has worked for the NRCS since 1987 and has an engineering degree from University of Idaho and is a licenced civil engineer in Idaho. Dale has experience with BPA Model Watershed Grants.

Mr. Phil Mann, Engineer - Mr. Mann is employed by the Bureau of Reclamation in Boise, Idaho and will provide engineering and specifications necessary for the stabilization of the inriver berms, headgate structures, and canal modifications, and bifurcation structures. Mr. Mann has worked for the USBR since 1982 and has a civil engineering degree from Washington State University and is a registered engineer in Idaho. Phil has done much of the design work for Tasks II & III.

Section 10. Information/technology transfer

Tasks I, II, & III (Challis Canal Consolidation - Genie Canal Consolidation) has been identified by the Northwest Power Planning Council as successful projects where irrigators and fisheries interests all benefit. These projects are the subject of the NWPPC's "Progress" report; Volume 1, October 28, 1997. The completion of Task V will further enhance the trust level and cooperation between tribal, federal, state entities working with private landowners on other Council Fish & Wildlife Projects throughout the northwest.

Congratulations!