Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal

Section 1. General administrative information

Improve Stream Habitat Through Reduction In Farm Runoff

Bonneville project number, if an ongoing project 9068

Business name of agency, institution or organization requesting funding
Benton Conservation District

Business acronym (if appropriate) BCD

Proposal contact person or principal investigator:

Name Patricia Daly
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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
South Yakima Conservation District	200 Cheyne	Zillah, WA 98953	Alan Fulk
North Yakima Conservation District	1606 Perry St., Suite F	Yakima, WA 98902-5769	Mike Tobin

NPPC Program Measure Number(s) which this project addresses.
7.6D, 7.7

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

Anadromous Fish Restoration Plan, pgs. 58, 59; Yakima Valley Council of Governments' Yakima River Basin Water Quality Plan, recommended actions, Sunnyside Subbasin; Washington Department of Ecology's (WDOE) Total Maximum Daily Load Evaluation Report for the Yakima River, pgs. 63-65; WDOE's Needs Assessment for the Upper and Lower Yakima Water Quality Management Area, pg. 17; Yakima River Watershed Council's Draft Watershed Plan, pgs. 61 and 24.

Subbasin.
Lower Yakima River

Short description.
Enhance tributary and main stem fish habitat by reducing soil, nutrient, and pesticide runoff from farm operations by supporting on-farm improvementst with cost-share and technical assistance.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	X	Construction	X	Watershed
	Resident fish		O & M		Biodiversity/genetics
	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate		Monitoring/eval.		Flow/survival
	Other	+	Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	+	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.
Sedimentation, stream habitat, soil runoff, nutrient loading, temperature, turbidity

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Develop cost-share guidelines and promote program.	a	Develop specific guidelines for cost-share program
		b	Design application and contract forms, develop evaluation process
		c	Promote program to landowers
2	Accept applications, select projects	a	Assist with project designs and accept applications from landowers
		b	Evaluate projects, prioritize and select those to receive funding
		c	Sign contracts with landowers
		d	Report on projects selected and expected results
3	Implement projects	a	Assist with on-farm construction and check installation
		b	Certify project completion and that NRCS standards are met
		c	Provide technical assistance for operation of improvement, including irrigation management
4	Project oversight and administration	a	Verify project costs with landowner
		b	Voucher project costs and reimburse producer
		c	Distribute funds to subcontractor

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	11/1998	3/1999	2.00%
2	3/1999	7/1999	3.50%
3	3/1999	12/1999	91.00%
4	11/1998	12/1999	3.50%
			TOTAL 100.00%

Schedule constraints.
The only constraint to shedule is timing of available funds; Milestones: signed contracts, construction, grower payments.

Completion date.
12/1999

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		$135,660
Fringe benefits	(Benefits are 29% of salary)	$39,340
Supplies, materials, non-expendable property		$1,000
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		$1,749,000
PIT tags	# of tags: 0	
Travel		
Indirect costs		
Subcontracts		
Other		
TOTAL		$1,925,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget				
O&M as % of total				

Section 6. Abstract

This proposal requests $1,925,000 to be split among three Conservation Districts in the Yakima River Watershed for on-farm conservation of rill irrigation and management systems to pressurized and controlled irrigation systems. Project goal is to improve fishery habitat in tributaries and the main stem of the Yakima River by reducing the amount of soil, nutrient and associated chemicals coming from farm runoff. Districts will work cooperatively with individual producers to install improved irrigation and management systems. Objectives include: 1) developing guidelines and promoting program; 2) accepting applications and signing contracts with growers; 3) on-farm implementation; and 4) project oversight, and administration of cost-share dollars. Irrigation water management and nutrient management will be required components of

cost-sharing. Benefits to fish and wildlife will be a permanent reduction in stream sedimentation from agriculture runoff and nutrient leaching, and consequent improvements to fish habitat. This is a stated goal of restoration efforts for anadromous fish in the Columbia River Basin and Yakima River Basin. Conversion to pressurized irrigation systems such as linear, overhead and undertree sprinkler systems, and drip systems are Best Management Practices (BMPs), which have been developed by Conservation Districts, Natural Resource Conservation Service, universities and producers. Results will be approximately 2915 acres converted rill irrigation to pressurized systems, and prevention of 145,750 tons of soil from reaching Yakima River tributaries annually. Time frame is October 1998 to December, 1999. Implementation progress and results achieved will be monitored using the NRCS FOCS computer system and water quality monitoring.

Section 7. Project description

a. Technical and/or scientific background.

This project is located in the lower portions of the Yakima River Watershed, below its confluence with the Naches river. The Yakima River is a major tributary of the Columbia River System, entering the river at river mile (RM) 335 near Richland, Washington.

The Valley was developed for agriculture in stages over the past 100 years, as irrigation ditches and canals were constructed, and additional land was broken from sagebrush and riparian vegetation. Currently, there are approximately 350,000 acres of irrigated agriculture in the lower portion of the Yakima River Watershed. These consist primarily of permanent crops such as apples, hops, vineyards and other fruit, and annual crops such as corn, mint, asparagus and small grains. Approximately 37 percent, or 129,000 acres of this land is irrigated with rill (furrow) irrigation. This method requires some of the irrigated water to leave the field as runoff, carrying with it any excess nutrients or chemical residues. This method is also the most inefficient of irrigation methods, requiring as much as twice the amount of water as either sprinkler or drip on the same crop. The Lower Yakima Valley also supports approximately 90 dairy and feedlot operations, which also contribute significant amounts of nutrients to surface waters in the basin.

The impact these agriculture activities have had in the tributaries and main stem of the Yakima River is complex. However, inputs from farm activities to surface waters, and consequent degredation of water quality and stream habitat, is a major issue which is generally accepted by the agriculture community, and where identified solutions can have a significant benefit to fish populations in the Lower Yakima River. Reducing these inputs is the focus of this proposal. Numerous studies have stated these issues and recommended actions in various formats:

- Two of the Recommended Actions for the Yakima River System, in Volume 1 of the *Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes*[1], speak to these issues: 1) thermal pollution

caused by irrigation return flows; and 7) reduction of silt and nutrient loading entering the river with irrigation return flows. The document notes an aggressive water conservation needs to be implemented to reduce silt loads and the introduction of agricultural chemicals to the Yakima River.

- The US Geological Survey, in their 1991 Surface Water Quality Assessment of the Yakima River Basin[2], noted several agriculture-related problems in the lower Yakima River: 1) increases in ammonia, nitrite-plus-nitrate, and orthophosphate concentrations in the study period from 1974-81 water years, due to the increasing use of nitrogen and phosphorus fertilizers and increasing numbers of livestock; 2) background levels of suspended sediment and turbidity approximately doubled downstream from the city of Yakima, primarily because of sediment contributed by agriculture return flows during the irrigation season; and 3) in the Yakima main stem, large concentrations of suspended sediment occurred during periods of peak irrigation, and at the start of irrigation season when soils were newly tilled and irrigation ditches contained sediment from spring cleaning and windblown sources.
- The Yakima Valley Council of Governments' Water Quality Plan[3] reviewed water quality conditions in the entire watershed. Problems identified include high temperatures, high turbidity and suspended solids, and elevated levels of nutrients such as ammonia-N and DDT. Specific recommendations included 'implement BMPs for sediment control' and 'accelerate implementation of agricultural BMPs for improved sediment control.' (BMPs, or Best Management Practices, are any equipment, method or construction which reduce the impact of agriculture on soil and water resources.)
- The Yakima River is listed on the Washington Department of Ecology's (WDOE), 1996 303(d) List of Impaired Water Bodies[4]. Listing has occurred because the river exceeds state water quality standards for temperature, pH, fecal coliform, turbidity, instream flow, ammonia-N, DDT, and several other parameters.
- In 1996 the WDOE completed a Suspended Sediment and DDT Total Maximum Daily Load Evaluation Report[5] (TMDL) for the Yakima River. It assessed the river for water quality conditions and noted that "from March to October, elevated TSS (total suspended solids), and turbidity in the lower Yakima River Basin are primarily a result of erosion from irrigated agriculture. Prolonged elevated TSS and turbidity lead to impairment of aquatic habitat, and of other beneficial uses of the water." The TMDL recommended that targets be set to reduce suspended sediment and turbidity levels. Targets of 25 NTU (turbidity) and 56 mg/l for TSS, measured at the end of tributaries and return drains, were established to be met within ten years.

Changes in irrigation methods and other on-farm conservation practices have reduced the number of rill irrigated acres and the amount of nutrients entering the streams. Specific practices, such as conversion of rill (furrow) irrigation to either drip or sprinkler, and addition of ponds which reduce nutrient inflow to streams, have been identified as agricultural BMPs which can provide significant improvement to stream habitat and anadromous fish populations.

There are a variety of programs and projects ongoing in the Yakima River Watershed which address these problems.

The North Yakima Conservation District has been working in the Moxee Hydrologic Unit for eight years. The first program was implementation of a demonstration of furrow mulching, and cost-share for furrow mulching on farm. That program evolved, seeing a need for a demonstration project on a small subbasin, supplying cost-share funds for BMP implementation, farm-plan development, technical assistance, monitoring, and information-education for landowners. Successes of that turned into a full watershed project, specifically aimed at furrow irrigated ground and tailwater areas. That program provides technical assistance for farm planning, a drain monitoring program, and an information-education program. The current program also supports complementary cost-share dollars, such as the USDA's Natural Resource Conservation (NRCS), PL83-566 Small Watershed Program.

The Benton Conservation District (BCD), began a water quality monitoring program in 1995 on Spring Creek, and on-farm assistance shortly after that. The BCD provides cost-share dollars through a Washington Conservation Commission sponsored program, and in conjunction with both North and South Yakima CDs through the Environmental Quality Incentive Program (EQIP), for the Yakima River Lower Reaches Geographic Priority Area. The BCD has also initiated an irrigation water management program for on-farm training in irrigation systems, and is supported through the Centennial Clean Water grants for continual on-farm technical assistance, water quality monitoring, and information-education activities.

The South Yakima Conservation District (SYCD), has targeted three sub-watersheds within the district to focus their improvement efforts for improving water quality on the Yakima River. These are the Granger Drain, Sulphur Creek and Mud Lake, which all have high levels of sediment, nutrient, and bacteria loading. The Granger Drain has been a federally recognized Hydrologic Unit Area (HUA) since 1991, and a concerted effort has used water quality monitoring, education activities and cost-share funds to address water quality issues. The high sediment levels in the drain has a direct relationship to the number of acres of rill-irrigated row crops, and current efforts have been able to reduce the amount of sediment the drain contributes to the Yakima River during peak irrigation from as much as 163 tons/day to 60 tons/day.

Mud Lake Drain was identified by a 1993 Yakama Indian Nation Water Resources Planning Program as a major contributor of sediment into the Toppenish Creek, caused by the highly erosive soils and the use of furrow irrigation. SYCD, working with the Yakama Indian Nation , has identified conversion from rill irrigation to either sprinkler or drip, as a priority for this drain.

The conservation districts have developed a strong relationship with landowners and producers to work directly with them to improve their use of water and soil resources. The CDs partnership with several agencies, including the NRCS, Washington State University (WSU), the USDA, EPA, the USGS, and other state and local agencies.

Non-point pollution water quantity improvements can be expensive to achieve. Working cooperatively with private landowners to implement improved irrigation and runoff management systems will achieve the goals of an improved fishery habitat. Providing cost-share assistance for these improvements and follow-up management education and assistance will help achieve long-term conditions of instream habitat and fish populations.

b. Proposal objectives.

The objectives for this project proposal are:

1. Develop cost-share guidelines (including specific types of projects that will be funded), the application and evaluation process, and promote the cost-share program to landowners within the Lower Yakima River Watershed.
2. Accept cost-share project applications, evaluate these and select projects to be funded, and sign contracts with landowners.
3. On-farm implementation – construction of pressurized irrigation systems, dairy waste holding ponds, and other identified BMPs; assist growers with implementation and initial use; assure all construction meets NRCS standards; provide education and technical assistance as needed to assure implementation provides expected benefits.
4. Project oversight – administration of cost-share dollars, including verifying project costs, vouchering funds and reimbursing growers.

There will be numerous products from this project. The cost-share application guidelines will direct landowners to design projects with the objective of reducing their impacts to water quality and fish habitat. Evaluation of project applications will result in a project ranking and selection of the best of those which will have a measurable reduction in agriculture inputs of sediment and nutrients to surface waters in the basin. Finally, on-the-ground improvements will be made through implementation of these projects.

These projects will primarily be conversion of rill irrigated systems to a pressurized system (sprinkler or drip), and construction of other projects which stop or significantly reduce runoff from farms. Each cost-share project will have a measurable reduction in inputs to tributaries and a positive impact to fish habitat. These reductions are described in greater detail in Section 7e.

Costs for various systems will determine the number of acres that can be converted with the requested dollars. A drip irrigation system in a hop field at the lower reaches of the irrigation canals can be as much as $1200/acre, while a sprinkler system may be $500/acre. This proposal requests $1,925,000, of which $1,749,000 will be used directly as cost-share, at a rate of 75%. Using an average of $800/acre for an on-farm improvement project, approximately 2915 acres will be converted from a system which allows farm runoff, to one which prohibits it.

The benefits of this cost-share program will be a reduction in soil and nutrient loss from farm operations. Soil loss on a rill irrigated field in the Yakima Valley can range from 10 to 100 tons per acre per year, depending on slope, soil type, the use of cover, crop type and management method, plus other factors. Again assuming an average of 50 tons of soil and nutrients lost per acre per year, this project will result in a reduction of approximately 145,750 tons of farm runoff from reaching the surface waters of the Yakima River.

Additional benefits will include a reduction in water use, a result of increased efficiency of pressurized and controlled irrigation systems. This can provide significant

benefits such as surface water temperature reductions and more water available for fish migration.

c. Rationale and significance to Regional Programs.

Species of concern in the Lower Yakima River include Spring and Fall Chinook Salmon, Bull Trout, Steelhead and Bald Eagles. Bull Trout is proposed to be listed under the Endangered Species Act by June of 1998. Spring and Fall Chinook Salmon and Steelhead are candidate species. Sediment and nutrients from irrigation induced soil erosion and other farm management practices is the major contributor to poor water quality affecting the habitat of these species.

Numerous studies and watershed plans have provided recommendations to specifically address the sedimentation and farm input issue in the Lower Yakima River Watershed (cited in Section 7a). Some of these recommendations are currently being implemented, or are proposed by conservation districts, the NRCS, WSU and other agencies working in the Yakima Valley. For example, the conservation districts are working with the NRCS to provide on-farm improvements through EQIP. This program provides approximately $500,000 annually for on-farm improvements, but is limiting due to the continued reduction and uncertainty of federal budget allocations.

The rationale for proposing an additional project for cost-share support is to accelerate the process of reducing farm inputs to surface waters. This project is a continuation of the proposal submitted by the BCD for BPA FY98 funding, which requested $800,000 for cost-share projects on farm. Long-term planning by the conservation districts lists this as a priority use of funds to meet goals of reducing agriculture impacts. This project also supports the districts' efforts to meet the TMDL targets established by the WADOE for the Yakima River. These are measurement of 25 NTU and 56 mg/l TSS at the end of tributaries and return drains. The districts are continually reviewing changes occurring on the ground, and those necessary to meet these goals. The districts then target those areas which can reduce inputs in the most cost-efficient manner possible.

In addition to the WADOE's TMDL, on-farm conversion to prevent soil and nutrient loss and subsequent inputs to Yakima tributaries furthers the goals of other programs, including the Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama tribes, and the Yakima Valley Council of Governments' Water Quality Plan, as well as other local watershed plans.

The five year goal of the districts in the lower Yakima River watershed is to reduce farm inputs to surface waters on 15,300 acres, using this and other available programs.

Each of the three conservation districts in this proposed project have resources to for water quality monitoring, information-education activities, and some technical assistance to growers installing improved irrigation and management systems. They also work closely with WSU, the NRCS, Washington State Fish and Wildlife, and other agencies on cooperative education and restoration activities.

Past projects have shown the results that can be achieved when conservation districts can provide cost-share to local growers. In 1997, EQIP received 176 applications with $5 million worth of proposed conservation treatment measures. These competed for $860,000, and 130 were not funded. In the North Yakima Conservation District's Moxee PL-566 Watershed project (described in Section 7a), landowner participation is at 84%. Benton Conservation District has been able to support conversion of 460 acres from rill to either sprinkler or drip irrigation, with $69,000 in cost-share funds.

The proposed project will be a cooperative effort between the three conservation districts who work in the Lower Yakima River Watershed. The Benton Conservation District will be the lead, subcontracting to North and South Yakima CDs. Each will promote their portion of the cost-share dollars, evaluate and prioritize project applications, work with their growers to assure implementation, and measure the on-farm results. The BCD will administer the grant and distribute funds to the other CDs, and to their participating growers.

d. Project history

This is a new project.

e. Methods.

This project will use methods which have been established and used by the conservation districts for many years. Cost-share rates and project evaluations will be done as is currently being applied in other district cost-share programs. Applications received will have designs developed and reviewed by the NRCS or district personnel who have done this previously. Oversight of on-farm project implementation will be carried out to assure they meet NRCS standards, and will be certified when completed. Expenses will be verified and cost-share payments disbursed, as is currently being done for other projects. Follow-up assistance for irrigation water management and nutrient management will be provided by the districts, as part of other grant programs.

Tasks associated with the objectives listed in 7b are as follows (the details of these tasks may vary between districts, but the objectives and funding are the same for all four):

Objective 1: Develop cost-share guidelines, the application and evaluation process, and promote the cost-share program. Tasks:

- Develop specific guidelines for using cost-share dollars, including type and location of projects to be funded, maximum dollar amount per grower, and time frame for accepting applications.
- Design application and contract forms, and develop the evaluation process (measurement system for prioritizing projects to be funded).
- Establish a promotion method, or use existing media sources to inform producers of cost-share program. Implement promotion.

(Note: some of these specific tasks may not be necessary if they were done under BPA FY98 funding and can be transferred to this project.)

Objective 2: Accept cost-share applications, evaluate and select projects, sign contracts. Tasks:

- Assist growers with developing projects and designing irrigation systems, receive completed project applications at each district office.
- Evaluate each application based on established criteria, prioritize and decide which projects will receive cost-share funds.
- Write and sign contracts with each producer.
- Produce a document describing the selected projects for each district, and the expected results to be achieved with these projects.

Objective 3: On-farm implementation, and education and technical assistance. Tasks:

- Assist producers with project construction as necessary, do field checks to assure proper installation.
- Certify project completion and that NRCS standards are met.
- Provide technical assistance during initial use of improvement, and thereafter as necessary with irrigation scheduling, soil moisture monitoring and other technical assistance, to ensure expected reduction of farm runoff.

Objective 4: Project oversight and administration. Tasks:

- Verify project costs with each producer.
- Voucher project costs and reimburse producer.
- BCD only: receive cost request from other two districts and distribute funds.

Additional work to support this program will be continued follow-up technical assistance as needed and water quality monitoring. Water quality monitoring is done by each district and/or other agencies within all areas of the Lower Yakima River. While necessary to verify the results of this project, the costs for water quality monitoring are not included in this proposal as there are other sources of funds for these tasks.

The process of doing on-farm cost-share projects is very straightforward for each of these districts, from announcing a program, to helping growers apply, approving applications and assisting with construction. Growers have begun to recognize the opportunities these programs provide both for improving their operations and reducing the impacts their operations are responsible for, and are very willing to contribute a significant portion of the cost for the long-term gains that are achieved.

Measurement of the on-farm implementation of these projects will be done by each district through their associated NRCS office, using the FOCS computer system. This system tracks number of acres, locations, soil types, estimated soil savings and other data for each on-farm implementation project. Districts also maintain a database of growers who receive technical assistance and support for their farm conservation methods.

This project will be evaluated by reviewing the number of converted irrigation systems and management systems, the number of acres under conversion, soil and slope types, and estimated soil and nutrient savings determined by the FOCS system. Specific numbers will be generated for acreage converted, estimated soil savings, estimated reduction of nutrient loss to surface waters, and number of growers participating.

Water quality benefits may be evaluated by a measured reduction in suspended sediment, turbidity, temperature and other parameter levels. Most water quality monitoring projects in the basin collect the basic parameters of TSS, turbidity, flow and temperature, and many of them additionally collect nutrient levels. Depending on specific water quality information currently available, the locations and number of acres converted, and current condition of local tributaries receiving farm runoff in these areas, a measured reduction in these parameters may not be noticeable the first year of the project, but will in following years, and in fact, has been documented through work already done in some of the tributaries and drains.

f. Facilities and equipment.

Equipment necessary to complete this projects is limited to survey equipment and vehicles. Each district either already has these available, or has access to them through their associated NRCS office. Major capital expenditures for pressurized irrigation and management systems will be purchased through the cost-share program and through funding by individual growers. Individual growers will assume all operation and maintenance costs. Growers will be required to maintain the irrigation systems for a period of 10 years.

g. References.

[1]Columbia River Intertribal Fish Commission. 1995. Wy-Kan-Ush-Mi-Wa-Kish-Wit, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. CRITFC
[2]United States Geological Survey. 1991. Surface Water Quality Assessment of the Yakima River Basin. United States Geological Survey.
[3]Yakima Valley Council of Governments. 1995. Yakima River Basin Water Quality Plan.
[4]Washington Department of Ecology. 1996. Section 303(d) List of Impaired Water Bodies.
[5]Joe Joe and Barbara Patterson. 1997. A Suspended Sediment and DDT Total Maximum Daily Load Evaluation Report for the Yakima River. Washington Department of Ecology. Publication No. 97-321.

Section 8. Relationships to other projects

A concerted effort in education, demonstration and implementation of improvements in irrigation management, application systems and environmental improvements is ongoing at each of the three conservation districts. The Benton Conservation District is partnering with WSU, the USDA and Benton County, and is supported by the Washington Conservation Commission for on-farm technical assistance,

water quality monitoring and on-farm irrigation improvements. This project will enable the BCD to expand its current cost-share program to reach many growers who have previously applied for cost-share funds, but were unable to receive them due to limited funding. The District has used Centennial Clean Water funds to map the agriculture activities in the district and determine locations where on-farm improvements will have the greatest impact at reducing stream sedimentation and improving fish habitat.

The North and South Yakima Conservation Districts also have ongoing program for on-farm technical assistance, cost-share and riparian improvements. This project will again, expand their ability to accelerate the process of reducing farm runoff from irrigated acres in their areas. The North Yakima Conservation District also has a list of growers who have applied for cost-share funds in the past and who are slowly converting without assistance. All of these programs will benefit from additional cost-share funds.

The South Yakima Conservation District will continue their involvement in the Granger Drain Hydrologic Unit Area through September, 1999, assisting growers through on-farm support, education and training to reduce farm runoff.

The cost-share funds in this proposal will also assist the conservation districts in gaining additional grant funds from other funding sources, to be used for technical assistance and on-farm management support.

The North and South Yakima and Benton Conservation Districts are beginning a joint project to provide on-farm technical assistance, water quality monitoring and information-education to the Lower Yakima River Valley. They are also working in cooperation with the Board of Joint Control (of the Roza and Sunnyside Irrigation Districts), on water quality monitoring.

All three conservation district are participating in the Interagency Council, sponsored by the Yakima River Watershed Council, which works to promote communication and interaction between the numerous federal, state, and local agencies working in the Yakima River. This group is in the process of prioritizing needs within each of the reaches of the Yakima River.

Section 9. Key personnel

Name: Pat Daly, District Manager, Benton Conservation District (0.5 FTE)
Project Duties: Coordinate funding between all three districts, and coordinate the prioritization, contracting and follow-up implementation of irrigation systems for all cost-share recipients.
Resume:
Education
MS Environmental Engineering, Humboldt State University, 1993
BS Film, Television & Photography (Minor in Communications), Montana State University, 1983
Current Employment, Responsibilities
District Manager, Benton Conservation District, January 1995 through Present

Manage all day to day district activities, including project oversight for several major programs providing water quality monitoring, agriculture mapping, on-farm

technical assistance and cost-share activities. Responsible for promoting the district through newsletters, workshops and public education efforts. Manage all district funds and develop projects and proposals to maintain district funding. Communicate to district supervisors, county commissioners, local and state agency personnel, and all others in district activities.

Past Employment

Scientist, Columbia Environmental Sciences, Kennewick, WA, 1993-1994
Hydrologist, Humboldt State University, Arcata, CA 1992-1993
Communications Manager and Business Owner, various companies, 1983-1990

Project Expertise

As District Manager I have developed, promoted and administered all the district's programs for the past three years. These include developing relationships with local growers, understanding their concerns, and working with them to change their irrigation practices. I am also familiar with the NRCS practices for on-farm implementation of irrigation systems and administration of cost-share funds. In terms of this project, I have coordinated all aspects of district programs, including fund accounting and reimbursing for programs, which this one will mirror.

Relevant Job Completions

Spring Creek Watershed Study, 1995-1997
Water quality mapping and analysis of on-farm irrigation practices in the Spring and Snipes Creeks Watersheds (Yakima River tributaries).
No-Name Creek Implementation, 1996-1997
On-farm implementation of new irrigation systems, including district's first major drip system in a hop field. Program cost-shared with several growers, provided technical assistance and monitored water quality results in tributaries receiving farm runoff.
Spring Creek Irrigation Water Management, 1997-Ongoing
Cooperative project with USGS to do surface and ground water monitoring. Project also established on-farm irrigation management training and put on workshops for growers on irrigation scheduling.

Name: Michael Tobin, North Yakima Conservation District Manager (1.0 FTE)
Project Duties: Coordinate the prioritization, contracting and follow-up implementation or irrigation systems utilizing Bonneville Power Administration cost-share funds. These funds will be prioritized, contracted, and implemented under the same guidelines as NYCD's USDA PL83-566 Small Water Project.
Resume:

Education

BS Agricultural Mechanization, Washington State University, 1987
Minor in Agricultural Economics
AA General Studies, Yakima Valley Community College, 1985

Current Employment, Responsibilities

North Yakima Conservation District, September 1989 through Present
1989-1995; Resource Technician
1995-1997; District Manager

Current job responsibilities as NYCD Manager include oversight of all day to day district activities as well as direct supervision of all district projects and employees. District projects currently include a Conservation Commission grant funded Information and Education program, an Environmental Protection Agency Clean Water Act Section104 grant, EPA Clean Water Act Section 319 grant, and sponsorship of an USDA/NRCS PL83-566 Small Watershed Project.

Past Employment

Product Promotion & Delivery, Rankin Equipment Company, Yakima, WA 1999-1989

Project Expertise

As NYCD Manager I am experienced with NRCS's Field Office Computer planning and contracting programs that will be utilized by NYCD to implement these BPA cost-share funds. The district has past experience in letting contracts for BMP implementation utilizing local funds as well as providing needed technical assistance and education. Currently NYCD has a prioritized list of willing and able producers and an excellent working relationship with all applicable program participants.

Relevant Job Completions

Moxee/Naches Water Quality Project, 1989-1991

Irrigation District improvements and on-farm BMPs (furrow mulching on hops and grapes). Centennial Clean Water Fund Grant.

Moxee BMP Implementation Demonstration Project, 1991-1992

BMP implementation; NYCD cost-share program; W/Q monitoring; FSA cost-share program; NRCS/NYCD technical assistance. EPA/DOE Water Quality Grant.

Moxee Drain Irrigated Agriculture BMP Implementation Project, 1993-1998

Five-year, water quality and water conservation project with emphasis on developing complementary cost-share incentive programs while providing technical and educational assistance, complimentary monitoring program, and project administration. EPA Section 319 Grant.

Moxee Watershed Plan, 1994-1998

Five-year technical and financial assistance project authorized under PL83-566 and sponsored by NYCD. Project goal is to eliminate water quality problems on 65% of lands effecting the Moxee Drain waters.

Name: Laurie Crowe, Sounth Yakima Conservation District (1.0 FTE)

Project Duties: Provide technical assistance on water quality waste related projects in South Yakima Conservation District.

Resume:

Current Employment, Responsibilities

South Yakima Conservation District, 1994 through Present

Dairy Waste Resource Technician-provide land owners with technical assistance to develop designs for alternative solutions to improve water quality and address erosion, drainage and irrigation problems on dairy operations. Administers all District cost-share programs.

Past Employement

Soil Conservation Technician, Natural Resource Conservation Service (NRCS), Zillah, WA 1991-1994

Soilc Conservation Technician, Washakie County Conservation District, Wyoming 1987-1991

Section 10. Information/technology transfer

Information obtained from the project will be distributed to other agencies and producers through each of the district's normal communications; i.e., newsletters, farm tours, demonstration days, and displays at workshops and fairs.

Information about the program and results in terms of number of acres converted, the type of system installed, and the expected sediment reductions will be distributed throughout the valley through the Yakima River Watershed Council and Yakima River Watershed Information Center. These agencies have responsibility for communicating and maintaining databases on these types of projects, and are the best suited to promoting these types of programs.