

---

## PART I - ADMINISTRATIVE

### Section 1. General administrative information

#### Title of project

Inventory On-Farm Irrigation Practices

---

**BPA project number:** 20155

**Contract renewal date (mm/yyyy):**  Multiple actions?

#### **Business name of agency, institution or organization requesting funding**

Roza-Sunnyside Board of Joint Control

---

**Business acronym (if appropriate)** RSBOJC

#### **Proposal contact person or principal investigator:**

**Name** James W. Trull

**Mailing Address** P.O. Box 239

**City, ST Zip** Sunnyside, WA 98944

**Phone** (509) 837-6980

**Fax** (509) 837-2088

**Email address** trullj@svid.org

#### **NPPC Program Measure Number(s) which this project addresses**

Section 7.6

---

#### **FWS/NMFS Biological Opinion Number(s) which this project addresses**

---

#### **Other planning document references**

---

#### **Short description**

Take an inventory on present irrigation practices to determine number of acres that are rill and flood irrigated. This inventory will determine which areas that need to be targeted with informational and educational material.

---

#### **Target species**

Chinook, Coho, Sockeye, Steelhead, Bull Trout, Cutthroat, Brown Trout, Brook Trout

---

### Section 2. Sorting and evaluation

**Subbasin**  
Lower Yakima River

---

**Evaluation Process Sort**

<b>CBFWA caucus</b>	<b>Special evaluation process</b>	<b>ISRP project type</b>
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

**Section 3. Relationships to other Bonneville projects**

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

<b>Project #</b>	<b>Project title/description</b>
20526	Multi-Year Plan Yakima Anadromous Fish Plan

***Other dependent or critically-related projects***

<b>Project #</b>	<b>Project title/description</b>	<b>Nature of relationship</b>
	Landowner Communication Program	distributes informational and educational material

**Section 4. Objectives, tasks and schedules**

***Past accomplishments***

<b>Year</b>	<b>Accomplishment</b>	<b>Met biological objectives?</b>

**Objectives and tasks**

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
1	Inventory irrigation methods	a	Take a detailed inventory of RSBOJC service lands

**Objective schedules and costs**

<b>Obj #</b>	<b>Start date mm/yyyy</b>	<b>End date mm/yyyy</b>	<b>Measureable biological objective(s)</b>	<b>Milestone</b>	<b>FY2000 Cost %</b>
1	10/1999	12/2000			100.00%
				<b>Total</b>	100.00%

**Schedule constraints**

None

**Completion date**

2000

**Section 5. Budget**

**FY99 project budget (BPA obligated):**

***FY2000 budget by line item***

<b>Item</b>	<b>Note</b>	<b>% of total</b>	<b>FY2000</b>
Personnel	RSBOJC	%52	5,000
Fringe benefits		%26	2,500
Supplies, materials, non- expendable property		%0	
Operations & maintenance		%0	
Capital acquisitions or		%0	

improvements (e.g. land, buildings, major equip.)			
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel	Vehicle mileage	%21	2,000
Indirect costs	Office overhead	%1	100
Subcontractor		%0	
Other		%0	
<b>TOTAL BPA FY2000 BUDGET REQUEST</b>			<b>\$9,600</b>

### **Cost sharing**

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
		%0	
		%0	
		%0	
		%0	
<b>Total project cost (including BPA portion)</b>			<b>\$9,600</b>

### **Outyear costs**

	<b>FY2001</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>
<b>Total budget</b>				

## **Section 6. References**

<b>Watershed?</b>	<b>Reference</b>
<input checked="" type="checkbox"/>	CH2M hill, 1975. Agricultural Return Flow Management in the State of Washington. Prepared for Washington State Department of Ecology.
<input checked="" type="checkbox"/>	Department of Ecology, 1990. Statewide Water Quality Assessment 350 (B) Report, State of Washington.
<input checked="" type="checkbox"/>	USGS, 1976. Sediment Transport by Irrigation Return Flows in the Lower Yakima River Basin, Washington. Open File Report 78-946.
<input checked="" type="checkbox"/>	Joy, J. and Patterson, B. 1997 A suspended sediment and DDT total maximum daily load evaluation report for the Yakima River: Washington State Department of Ecology, Environmental Investigations and Laboratory Services Program, Watershed Assessment S
<input checked="" type="checkbox"/>	Rinella, J.F., McKenzie, S.W., Fuhrer, G.J., 1992, Surface-water-quality assessment of the Yakima River Basin, Washington, analysis of available water-quality data

☒	Ecology, 1986, Priority waterbody assessment of the lower Yakima River, Washington State Department of Ecology, Olympia, Washington.
---	--------------------------------------------------------------------------------------------------------------------------------------

---

## **PART II - NARRATIVE**

### **Section 7. Abstract**

The Roza-Sunnyside Board of Joint Control (RSBOJC) is proposing a project to inventory the present irrigation practices throughout the RSBOJC service area. This inventory will determine which farms are still using flood or rill irrigation. Our landowner communication program can then use the information gathered in this study and target these areas for educational and technical support.

### **Section 8. Project description**

#### **a. Technical and/or scientific background**

The lower Yakima River basin has been identified as one of the most intensively irrigated and agriculturally diverse regions in the United States. More than 325,000 acres of cropland is being irrigated in the Yakima Valley and a vast network of drains exist to convey excess water, in the form of irrigation- and agricultural-return flows, to the Yakima River. These return flows can account for as much as 80 percent of the lower Yakima River main-stem flow during the irrigation season. Return flows are seriously polluted and, as a result, the lower Yakima River exceeds permissible state standards for DDT, Ammonia and other nutrients, temperature and turbidity. Because of these conditions, the Yakima River has been listed as impaired under the Federal Clean Water Act. Once abundant salmon and steelhead populations have dwindled to precariously low levels and other beneficial uses of the Yakima River water are in jeopardy. Consequently, the quality of the water in the lower Yakima River is highly dependent upon the quality of these agricultural-return flows (Joy and Patterson, 1997).

Wastes from some agricultural practices, irrigation-return drains, municipal and industrial treatment plant effluents, run-off from poorly managed forest and range practices, and urban runoff have been identified as pollutant sources, according to Ecology's Suspended Sediment and DDT Total Maximum Daily Load Evaluation Report for the Yakima River (Joy and Patterson, 1997). Intensive agriculture (return flows and grazing) has caused widespread habitat degradation. Resource problems include low flow at diversions, water quality degradation and pesticide. Low flows, high temperatures and sedimentation reduce fall Chinook spawning success.

The movement of suspended sediment in streams is an important factor in the transport and fate of chemicals in the environment. Many water-quality constituents including trace metals, organic compounds, indicator bacteria, and nutrients are associated with suspended sediment. Large suspended-sediment concentrations and associated contaminants can potentially affect water used for domestic-water supplies, aquatic-life

propagation, and recreation (Rinella *et al.*, 1992). Sediment, predators and lack of side-channel refuges limit juvenile rearing and over-wintering survival. Sediment also limits egg-to- fry emergence survival for all species of salmonid in virtually all reaches of the Yakima Basin.

Water quality studies performed in the mid-1970's through the mid-1990's by Ecology, the U.S. Geological Survey, Washington State University, Conservation Districts, the United States Bureau of Reclamation (USBR), and others focused on irrigated agricultural areas in the lower Yakima River basin. Results from these studies indicated that suspended-sediment concentrations and turbidity in agricultural-return drains, and in the lower Yakima River, were directly affected by irrigation practices (Joy and Patterson, 1997). In fact, irrigation return flow has been identified as the single most significant source of pollutants to the lower Yakima River (Ecology, 1986).

The RSBOJC contains over 170,00 acres of irrigated farmland. Many of the soil types in the project are very fine textured and of excellent quality for growing crops. However, they tend to be highly erodeable. Due to their very small particle size, the eroded soil remains in suspension in the waterways ultimately making its way to the Yakima River.

Improving water quality by modernizing farm practices can be very successful. Until accurate information has been gathered on the current farming practices, agencies will not know how much money it will take to improve water quality, how much time it will take, how much educational and technical support is needed, and how much sedimentation can be saved from entering the Yakima River. The area of farming practices contribute to the problem have not been identified or inventoried.

**b. Rationale and significance to Regional Programs**

The concept of an inventory of farming practices fits into the goals and objectives of Section 7.6 of the Fish and Wildlife program.

This would be a positive action taken to rehabilitate the watershed in the interest of restoring salmon and steelhead stocks.

This program would provide valuable information to other agencies as well as and opportunities for education in water-quality and conservation. The program should promote public outreach by encouraging education and protection of the Yakima River watershed

**c. Relationships to other projects**

The RSBOJC inventory of farming practices program would provide information that can be used in the RSBOJC landowner communication program.

**d. Project history** (for ongoing projects)

N/A

**e. Proposal objectives**

**OBJECTIVE 1: Inventory irrigation methods**

An inventory of all farming practices will be made to determine the amount of acres being rill or flood irrigated.

**f. Methods**

This program will involve field inspection of all lands within the service of RSBOJC. Areas where rill or flood is the method of irrigation will be recorded along with the parcel number, ownership, acres, crop type, and any other pertinent information.

**g. Facilities and equipment**

The existing facilities and a temporary staff position will be adequate to complete the project.

**h. Budget**

The cost of RSBOJC and fringe benefits will cost \$7,500. Vehicle mileage will be \$2,000. Office overhead will cost \$100. The total project will cost will be budgeted at \$9,600.

**Section 9. Key personnel**

The work will be accomplished with RSBOJC staff.

**Section 10. Information/technology transfer**

The information gathered in this study could be passed on the other agencies and used as a valuable educational and planning tool.

**Congratulations!**