OREGON WATER RESOURCE DEPARTMENT
WATER CONSERVATON, REUSE AND STORAGE
GRANT PROGRAM

I. Grant Information

Study Name: East Fork Irrigation District Conservation Feasibility Study

Type of Grant Requested: ☒ Water Conservation ☐ Reuse ☐ Above-Ground Storage
☐ Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]
Note: A Water Conservation and Reuse study may be submitted as a joint application. All other applications must only include one application type.

Program Funding Dollars Requested: $ 48,881 Total cost of planning study: $ 106,321
Note: Request may not exceed $250,000

II. Applicant Information

Applicant Name: Hood River Soil & Water Conservation District		**Co- Applicant Name:** East Fork Irrigation District	
Address	3007 Experiment Station Road	Address:	3500 Graves Rd.
	Hood River, OR 97031		Hood River, OR 97031
Phone	541-386-6063	Phone:	541-354-1185
Fax:		Fax:	
Email:	cindy@hoodriverswcd.org	Email:	johnefid@hoodriverelectric.net

Principle Contact: ***Cindy Thieman***	
Address:	3007 Experiment Station Road
	Hood River, OR 97031
Phone:	541-386-6063
Fax:	
Email:	cindy@hoodriverswcd.org

Certification:

I certify that this application is a true and accurate representation of the proposed work for a project planning study and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department grant and are prepared to conduct the planning study if awarded.

Applicant Signature: _____ Date: *4/10/14*

Print Name: *Brian Nakamura* Title: *Board Chair, Hood River SWCD*

III. Planning Study Summary

Please give a brief summary of the planning study using no more than 150 words.

The goals that this study would support are to1) increase water resource reliability for irrigators and 2) increase summer stream flows for ESA-threatened spring Chinook, steelhead, and coho salmon in the East Fork Hood River. This study would evaluate the economic and technical feasibility of substantially increasing water conservation in the East Fork Irrigation District. It is estimated that approximately 20 cfs could be conserved through delivery system upgrades. Due to the cost of such projects, it is critical to identify the cost-benefit ratio, priority, and sequence of conservation projects to be implemented. The feasibility analysis will include evaluating the delivery system and current irrigation demand, as well as determining the cost and relative priority of potential system improvement projects.

IV. Grant Specifics

Section A. Common Criteria

Instructions: Answer all questions in this section by typing the answer below the question. It is anticipated that completed applications will result in additional pages.

1. ***Describe your goal (which must be based on evaluating the feasibility of developing a water conservation, reuse or storage project) and how this study helps to achieve the goal.***

East Fork Irrigation District (EFID) has two main goals that this feasibility study would evaluate. The first is to increase water resource reliability for its irrigators. During low snow pack years, EFID can have water shortages in late summer, and this is expected to get worse based on future climates scenarios. EFID and Mt. Hood Irrigation District (note: Mt. Hood gets its water from EFID's diversion) have a combined water right of 130.6 cfs with priority dates that are senior to almost all other water rights.

The second, equally important goal is to increase summer streamflow on the East Fork Hood River. Summer streamflows downstream of the EFID diversion are often below the 100 cfs instream water right. This is because more than 60% of the flow is diverted for irrigation during a normal water year. This significantly reduces the amount of spawning and rearing habitat for ESA-listed winter steelhead, Coho, and spring Chinook for 6.4 miles on the East Fork Hood River (i.e., from EFID diversion to mouth).

This study would 1) evaluate the economic and technical feasibility of substantially increasing water conservation in EFID and 2) identify the priority and sequence of conservation projects to be implemented. Increasing water conservation would enable EFID to increase both water resource reliability and instream summer flow. This study would include:

- Evaluating and quantifying results of water conservation opportunities to reduce irrigation water demand. This would include a detailed assessment of the delivery system, quantifying water loss at specific locations or pathways, and evaluating cost of various conservation measures
- Identifying priority project locations, types, implementation sequence, and potential funding sources.
- Evaluating how much water can be used for increasing irrigation water reliability and instream flow based on identified conservation measures and projected future water demand.

2. ***Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.***

The Hood River basin is located within a "Substantial Potential Conflict Area" (Bureau of Reclamation, "Potential Water Crises by 2025"). This status is given to western U.S. regions where existing water supplies are not adequate to meet water demand or need for people, farms, and the environment. Within the Hood River Watershed, the East Fork Hood River is the most vulnerable to a water shortage crisis. As an example, in July of 2005, flow in the East Fork Hood River above the EFID Main Canal diversion was estimated at 128 cfs. If EFID had exercised its full legal water right during this period, the river would have been virtually dewatered. Subsequently, an ESA-triggered "takings" of threatened salmonids may have occurred. This was avoided because of voluntary cut-back measures taken by EFID and its patrons.

East Fork and Mt. Hood Irrigation Districts serve a total of 10,700 acres (EFID =9,494 acres) on the east side of the Hood River Basin. The predominant crop type is pears. The economy of Hood River County, which shares the watershed's boundary, is primarily dependent upon irrigated agriculture. In 2010, raw agricultural

commodity sales in Hood River County were $87,598,000. Furthermore, about one-third of the U.S. winter pear crop is grown in the Hood River Valley (OSU Extension).

Low streamflow caused by current rates of surface water diversion is the biggest limiting factor in the lower East Fork Hood River for the three ESA-listed (threatened) salmon species. Problems associated with diminished flows on the lower East Fork include decreased quantity and quality of aquatic habitat and increased water temperatures.

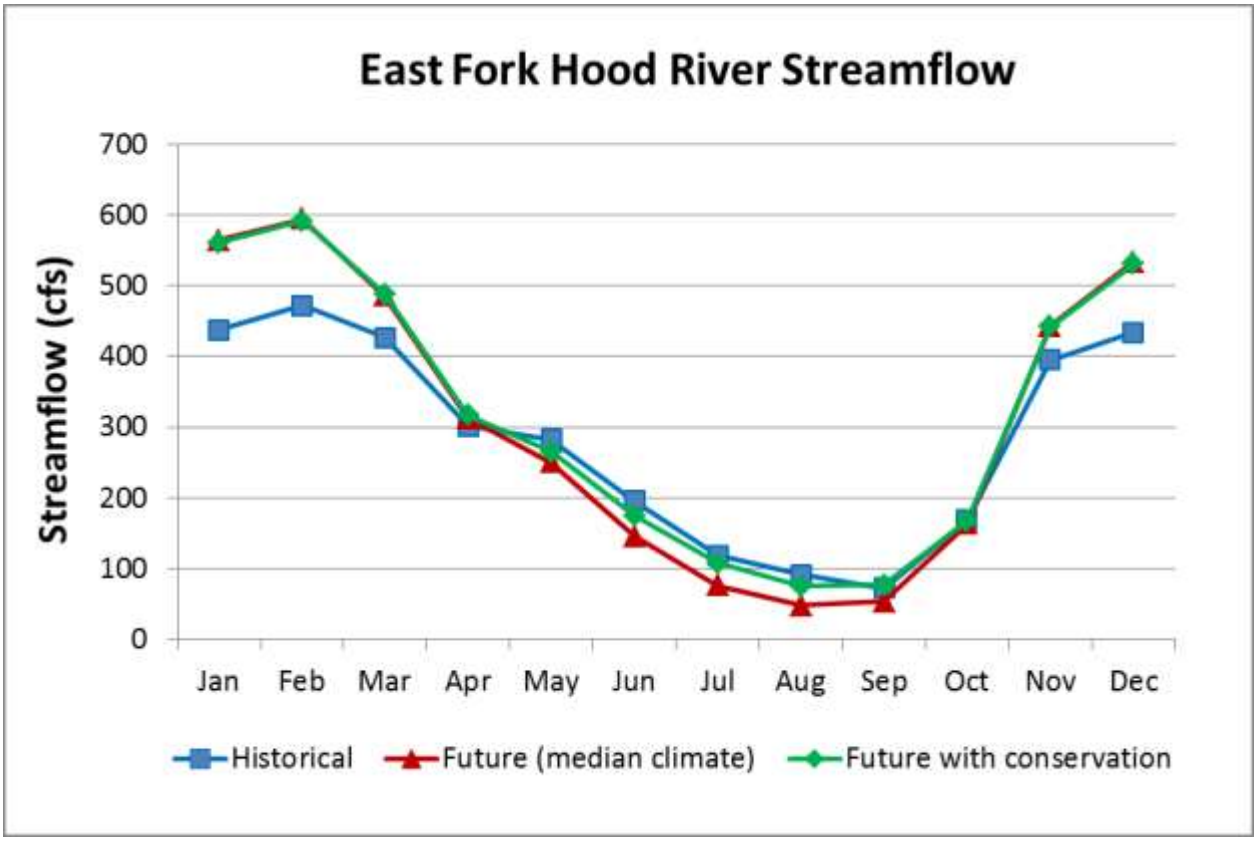


Figure 1. Historic (i.e., current) and predicted future streamflow on East Fork Hood River. "Future" is predicted median (i.e., 50% return interval) streamflow for 2030-2060 time period. (Source: Bureau of Reclamation, Hood River Basin Study, in press)

3. Explain how the project associated with the planning study will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50% of your need will be met).

Currently, the projected median (i.e., 50% return interval) summer streamflow on the East Fork Hood River downstream of the EFID diversion ranges from 118 cfs in July to 73 cfs in September (see **Table 1**). Although irrigation demand is being met during a median year, instream flow levels are not being met in the August through September time-period. Specifically, instream flow levels are 27 cfs below the 100 cfs instream water right. In a low-flow year (i.e., 10%-return interval), projected streamflow is below the instream water right for the entire June – October time period, getting as low as 12.3 cfs in August. In a low-flow year, the instream "need" could be as much as 88 cfs to meet the instream water right. If irrigation delivery system improvements could save 20 cfs, this would meet ~75% of the need during a median year and ~23% during a low-flow year. (Note: 20cfs is current estimate of savings from delivery system upgrades. This feasibility study is needed to verify this number.)

Table 1. Projected Current & Future (2030 – 2060) Median and Low Flows at Mouth of East Fork Hood River

	Current 10% flow	Current Median flow	Future 10% flow w/ no conservation	Future Median flow w/ no conservation	Future 10% w/ conservation	Future Median w/ conservation
June	81.6 cfs	195 cfs	56.9 cfs	146 cfs	85.4 cfs	175 cfs
July	46.6 cfs	118 cfs	17.5 cfs	76 cfs	45.2 cfs	108 cfs
August	12.3 cfs	91 cfs	11.5 cfs	48 cfs	22 cfs	75 cfs
September	17.7 cfs	73 cfs	12.7 cfs	54 cfs	35.7 cfs	77 cfs
October	66.2 cfs	168 cfs	61.2 cfs	163 cfs	66.4 cfs	167 cfs

(Sources: Hood River Basin Study, Bureau of Reclamation, in press & Hood River Basin Water Conservation Assessment, Watershed Professionals Network, 2013)

Stream flow projections for 2030 – 2060 show that, even in a median year, streamflow is below 100 cfs July through September. This study projected future flows with and without conservation. In the East Fork Hood River sub-basin, conservation measures included delivery system upgrades (projected savings of 21.5 cfs) and on-farm irrigation efficiency improvements for 2,850 acres (projected savings of 7.6 cfs). These estimated conservation values can be found in the Hood River Basin Water Conservation Assessment (Watershed Professionals Network, 2013)

4. Describe the technical aspects of the planning study and why your approaches are appropriate for accomplishing the goal of the planning study.

EFID has approximately 22 miles of open canal and 60 end spills. Due to the number of water conservation improvement projects needed in EFID, with a potential total cost of ~30 million, it is necessary to perform this feasibility study first so as to prioritize projects. Prioritizing these projects will be based on determining where and how much water is lost from the current system, and the ability of piping projects and surge ponds to eliminate those losses.

Although there are no documented flow rates at the 60 overflow points in the district, anecdotal evidence suggests that these vary considerably between locations. Again, because limited funds will be available to eliminate these overflows, it will be critical to identify those that lose the greatest amount of water so they can be eliminated first. Quantifying the losses at the overflows will require a range of flow measuring techniques. Overflows discharging from an open pipe can have the slope and water surface elevation measured for use in standard pipe discharge equations, whereas flow in an open ditch can either be measured with a handheld flow meter or open channel equations. Use of published soil infiltration rates will be used to estimate seepage loss in the open canals and laterals.

Once it is known where and at what rate the District is losing water, an analysis can be conducted that determines the most cost-effective way to eliminate those losses. The standard method employed by most irrigation districts would be to pipe the entire system. As mentioned above, due to the prohibitive cost of this, it is likely that EFID will need to pursue a combination of pipe with surge ponds and telemetry. Evaluating this will require a detailed understanding of all water demands by laterals, elevation changes in the District, miles of open canal, potential surge pond locations and volumes, and travel times between diversions, surge ponds, and the headgate.

5. Describe how the planning study will be performed.

a. & b. General summary statement that describes the study progression & when planning study could begin

The study will begin with an evaluation of the delivery system, assessment of water use by area, and estimate of delivery system losses. This will be followed by a technical and economic evaluation of specific delivery system conservation projects. The final report will include project ranking criteria and recommended capital improvement projects with associated construction costs. This planning study could begin immediately.

Key Tasks, Timeline & Descriptions

Task 1- Evaluate Delivery System and Current Irrigation Demand July 2013 -September 2014

a. Review documentation/drawings of canals and conduct field assessment of canal system and key node points.
b. Confirm acreages and corresponding water use for turn outs and laterals. Determine peak water demand for each lateral.
c. Create graphical schematic overview of EFID delivery system using existing GIS data. This would include EFID canals, pipelines, valves, water boxes, drains, spill locations, and receiving streams. (Mark will confirm Mattie's work, add to it if needed)
d. Develop base District water use flow data by creating a table of all water users and their allowable use
e. Using 2008 LIDAR, evaluate preliminary topographic model for canal and pipeline improvements.
f. Estimate water loss from end spills/overflows
g. Estimate seepage and evaporation loss from main canal, major laterals, and minor distribution laterals using published soil infiltration rates, length/width of canal segments, and EFID flow records

Task 2 - Evaluation of Water Conservation Improvement Projects October 2014- March 2015

a. Evaluate technical feasibility of using telemetry to conserve water. This would include identifying sites for telemetry monitoring and control (e.g., spill locations, control valves, diversion controls), and developing a basic control matrix for a monitoring system.
b. Determine cost for telemetry system.
c. Evaluate cost for and water savings from converting open canals and lateral lines to pipes; identify key locations
d. Evaluate economic and technical feasibility of an off-channel surge basin in the Upper Neal Creek valley

Task 3 – Water Conservation Improvement Plan March 2015 – June 2015

a. Develop simple project ranking criteria based on water loss reduction (overall quantity and location of stream impacts), reductions in District O&M, location and telemetry requirements.
b. Recommended and prioritized capital improvement projects & estimated costs

6. Provide data and information on the associated project and the project's sources of water supply:

a. The location of the associated project. (Include the basin, county, township, range and section.)

Hood River Watershed, Hood River County. The EFID delivery system can be found within the following Township, Range, and sections: T1S R10E section 5 (location of main diversion); eastern half of T1N R10E; T2N R10E sections 13, 14, 21-36, T2N R11E sections 6, 7, 18, 19, 30. See **Appendix 1** (pg. 15) for map of District.

b. ***The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.***

Source water: East Fork Hood River- RM 6.4. The East Fork joins with the Middle Fork to form the mainstem Hood River

c. Whether the project will be off-channel or on-channel.

All resulting projects would be "off-channel"

d. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)

N/A

e. Proposed purposes and uses of stored water.

N/A

a. Environmental flow needs and water quality requirements of supply source water bodies.

See answer to Question 3

7. What local, state or federal project permitting requirements/issues/approvals do you anticipate in order for the planning study to be conducted? If approvals are required, indicate whether you have obtained them. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them.

No local, state, or federal permits are required for this planning study to be conducted.

8. Describe the level of involvement, interest and/or commitment of different entities associated with the planning study (attach letters of support). Describe how these entities will benefit or be impacted by the planning study.

Hood River Water Planning Group: This water resource planning committee was organized in November 2008 by Hood River County and the Hood River Watershed Group (HRWG). The original mission of this group was to inventory surface and ground water resources, evaluate current and future out-of-stream and in-stream water supply requirements, and formulate plans for managing water resources at the basin level. Active group members include representatives from the County, HRWG, FID, Middle Fork Irrigation District, East Fork Irrigation District, ODFW, Confederated Tribes of the Warm Springs (CTWS), NMFS, OWRD, local residents, and local resource specialists. Over the past 6 years, the group has worked to gather all existing reports, documents, and data relating to water in the Hood River Basin.

In 2011, the County was awarded a Water Conservation, Reuse and Storage grant to study the general feasibility of storing winter water in above-ground reservoirs. This included analyses of existing and future water uses/demands, instream flow needs for native fish populations, and water conservation potential. These results are summarized in the Hood River Basin Water Conservation Assessment (Watershed Professionals Network, 2013). These studies evaluated water conservation and storage for the entire Hood River Basin and are high-level overviews.

The Water Planning Group will provide feedback and a basin-wide context for the proposed EFID Conservation Feasibility Study. On behalf of this group, HRWG was awarded a Bureau of Reclamation WaterSMART grant to 1) disseminate results of the Hood River Water Conservation Assessment and Basin Study and 2) utilize results from those studies to develop a Hood River Water Conservation Plan. The proposed EFID conservation feasibility study is an excellent example of conservation projects that could be part of an overarching Water Conservation Plan for the basin. (*See attached letters of support from HRWG, CTWS and Hood River County*)

Hood River Soil and Water Conservation District (SWCD) is the applicant and fiscal agent for this proposal. The SWCD employs Hood River Watershed Group staff, including its Watershed Group Coordinator. The Coordinator's role in the project is described under question 10 below.

9. ***Identify when matching funds will be secured and the term of matching funds availability.***

All matching funds have been secured and are available immediately

10. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the planning study. If the personnel have not been decided upon, include a description of the professional qualifications and/or experience of the person(s) you anticipate will play key roles in performing the planning study.

Mark Wharry, PE, GHD. Mr. Wharry is a principal, senior civil engineer, and project manager involved in design engineering and project management on various environmental, water resources and governmental projects. He has extensive experience in water resources, fish screening, passage and hatchery facilities projects, as well as with civil drainage design and storm water management. Mr. Wharry has completed several engineering design and construction projects for EFID, including the new Headworks Diversion and fish ladder, Central Lateral Canal Upgrade, and EFID Irrigation Intake Fish Screen and Silt Settling Facility.

Pat Tortora, PE, GHD. Mr. Tortora is a civil engineer with over 20 years of experience in planning, design, and construction engineering. He has served as civil engineering Project Manager with emphasis on water resources, public works projects, industrial site and subdivision design, and collaboration with multi-disciplinary teams for site development.

Shade Griffin, PE, GHD. Mr. Griffin is an electrical engineer with 10 years of experience in design and specification of electrical systems, code compliance, and energy studies. This experience involves all phases of electrical design and construction, including schematic design, design development, construction documents, and construction administration. His varied background includes work on water resources, industrial, commercial, and institutional design and construction projects. His areas of expertise include: power distribution and instrumentation and controls, which are relevant to the telemetry system feasibility study.

Keith Tolle, GHD. Mr. Tolle is a senior designer with several AutoCAD programs, Civil 3D and Land Development desktop systems and has used his skills to produce design drawings for a wide range of projects, including mechanical, P&ID, and equipment layout.

Section B. Unique Criteria

Instructions: Answer the set of questions below that applies to the type of planning study that this grant will fund.

☒ Water Conservation or ☐ Reuse

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application. ☒ I have filled out the application or ☐ I have not filled out the application.

2. Explain how the associated project will mitigate the need to develop new water supplies and/or use water more efficiently. Reference documentation and/or examples of the success of similar or comparable water conservation/reuse projects that would be available upon request.

   EFID has substantial opportunity to increase water conservation through piping their main canals and lateral lines, eliminating overflows, and increasing on-farm irrigation efficiency. Please see Hood River Basin Water Conservation Assessment (Watershed Professionals Network, 2013) for more information.

☐ Above-Ground Storage

Please answer the following three questions **BEFORE** proceeding:

Will the project divert greater than 500 acre-feet of surface water annually?	☐ Yes	☐ No
Will the project impound surface water on a perennial stream?	☐ Yes	☐ No
Will the project divert water from a stream that supports sensitive, threatened or endangered species?	☐ Yes	☐ No

If you answered "Yes" to any one of these questions, by signature on this application, you are committing to include the following required elements in your planning study.

Describe how you intend to address the required elements in your planning study:

a) Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows.

b) Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives.

c) Analyses of environmental harm or impacts from the proposed storage project.

d) Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.

Is the proposed storage project for municipal use?

☐ Yes ☐ No

If you answered "Yes," then describe how you intend to address the following required element in your planning study:

e) For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.

Proceed in answering the following questions:

1. Describe when and to what extent the project associated with the planning study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values.

2. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

☐ Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]

Please answer the following three questions **BEFORE** proceeding:

Will the project divert greater than 500 acre-feet of surface water annually?	☐ Yes	☐ No
Will the project impound surface water on a perennial stream?	☐ Yes	☐ No
Will the project divert water from a stream that supports sensitive, threatened or endangered species?	☐ Yes	☐ No

If you answered "Yes" to any one of these questions, by signature on this application, you are committing to include the following required elements in your planning study.

Describe how you intend to address the required elements in your planning study:

a) Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows.

b) Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives.

c) Analyses of environmental harm or impacts from the proposed storage project.

d) Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.

Is the proposed storage project for municipal use?

☐ Yes ☐ No

If you answered "Yes," then describe how you intend to address the following required element in your planning study:

e) For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.

Proceed in answering the following questions:

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application.
   ☐ I have filled out the application or ☐ I have not filled out the application.

2. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

V. Match Funding Information

Applicants must demonstrate a minimum dollar-for-dollar match based on the total funding request. The match may include a) secured resources, b) previously expended resources, and/or c) pending resources. For secured funding, you must attach a letter of support from the match funding source that specially mentions the dollar amount shown in the "Amount/Dollar Value" column. For pending resources, documentation showing a request for the matching funds must accompany the application. For resources that have been previously expended, the expenditure must have occurred on or after July 1, 2013. Resources expended prior to July 1, 2013 are not eligible for match purposes.

The Type of matching funds may include:	The Status of matching funds may include:
• The value of in-kind labor, equipment rental and materials essential to the planning study provided by the applicant or partner*.	• Secured funding commitments from other sources.
• Cash is direct expenditures made in support of the planning study by the applicant.	• Associated and documented expenditures for the planning study from non-program sources incurred on or after July 1, 2013.
	• Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.

*"Partner" means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed planning study. OAR 690-600-0010.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	**Type (✓ One)**	**Status (✓ One)**	**Amount/ Dollar Value**	**Date Match Funds Available** *(Month/Year)*
Joe McCanna, Confederated Tribes of Warm Springs- Joe has met with and will continue to meet with EFID staff to review potential irrigation efficiency projects from a fisheries perspective.	☐ cash ☒ in kind	☒ secured ☐ expended ☐ pending	$2,000	July 2013
Confederated Tribes of Warm Springs- a portion of this cash match was expended between July 1- November 30, 2013 to update the EFID system map and calculate pipe size needed to pipe one of the laterals. (engineering tech.)	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	$44,780	July 2013
John Buckley, EFID District Mgr.- Technical reviews w/ engineers, project mgmt., coordination w/ natural resource agencies, CTWS, and HRWG	☐ cash ☒ in kind	☒ secured ☐ expended ☐ pending	$4,620	July 2013
Cindy Thieman, SWCD/HRWG- watershed – scale conceptual planning, funding source identification, integrate & disseminate project information to Water Planning Group partners	☐ cash ☒ in kind	☒ secured ☐ expended ☐ pending	$3,480	September 2013
Hood River SWCD, Fiscal Administration and Management; Overhead expenses (portion of office, phone, etc.)	☐ cash ☒ in kind	☒ secured ☐ expended ☐ pending	$2,560	July 2014
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		

VI. Project Planning Study Schedule

Estimated Project Duration: July1, 2014 to June 30, 2015

Place an "X" in the appropriate column to indicate when each Key Task of the project will take place.

	2014				2015				2016
Project Planning Study Key Tasks	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**& Beyond**
1. Evaluate Delivery System and Current Irrigation Demand	X		X						
2. Evaluate Water Conservation Improvement Projects			X	X	X				
3.Water Conservation Improvement Plan (final report)						X			

VII. Project Planning Study Budget

Section A

Please provide an estimated line item budget for the project planning study. An example would include: labor, materials, equipment, contractual services and administrative costs.

Line Items	**Number of Units*** *(e.g. # of Hours)*	**Unit Cost** *(e.g. hourly rate)*	**In-Kind Match**	**Cash Match Funds**	**OWRD Grant Funds**	**Total Cost**
Staff Salary/Benefits						
John Buckley, EFID	120 hrs	$38.50	$4,620			$4,620
Cindy Thieman, SWCD/HRWG	120 hrs	$29	$3,480			$3,480
Mattie Bossler, EFID engineer tech.	560 hrs	$17.85		$9,996		$9,996
Joe McCanna, CTWS	80 hrs	$25	$2,000			$2,000
Contractual						
Engineer- project director	84 hrs	$190		$10,000	$5,960	$15,960
Senior project engineer	255 hrs	$155		$20,000	$19,525	$39,525
Senior project engineer	92 hrs	$140		$4,784	$8,096	$12,880
Engineering tech/drafting	140 hrs	$95			$13,300	$13,300
Administrative Costs**	120 hrs	$38	$2,560		$2,000	$4,560
Total for Section A			$12,660	$44,780	$48,881	$106,321
Percentage for Section A			***12%***	***42%***	***46%***	***100%***

** Note: The "Unit" should be per "hour" or "day" – not per "project" or "contract." Units x Unit Costs = Total Cost*
*** Administrative Costs may not exceed 10% of the total funding requested from the Department*

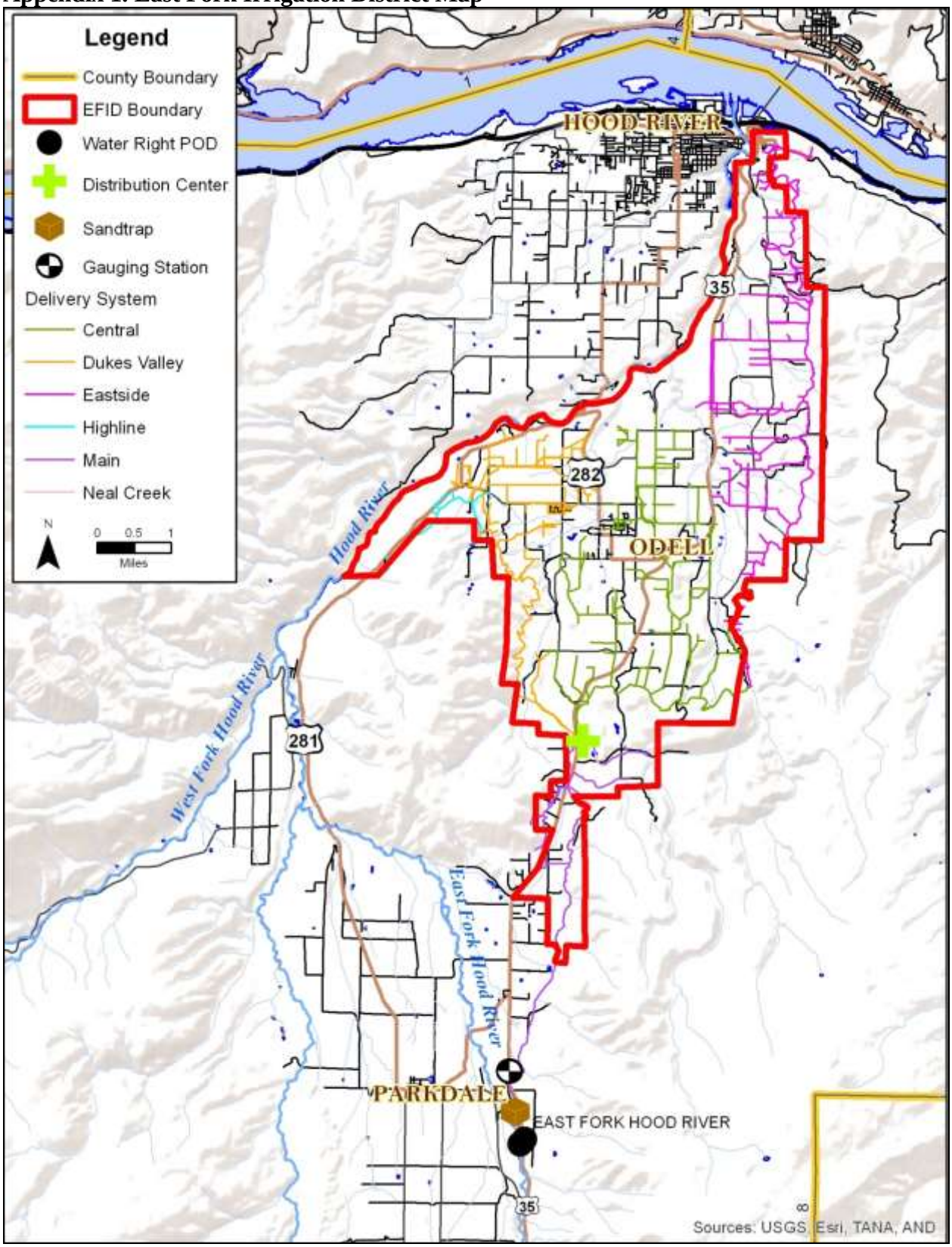
Section B

If Grant amount requested is $50,000 or greater, you MUST complete Section B. Key Tasks in Section B should be the same as the Key Tasks in Section VI (Project Planning Study Schedule).

Project Planning Study Key Tasks	**In-Kind Match**	**Cash Match Funds**	**OWRD Grant Funds**	**Total Cost**
Total for Section B				

Totals in Section B must match the totals in Section A

Appendix 1. East Fork Irrigation District Map



Request to be added to the Oregon Water Resources Department's

Inventory of Potential Conservation Opportunities

The purpose of this inventory is to catalogue potential conservation projects that water users themselves have identified but not yet pursued because of financial, institutional, or other barriers. For the purpose of this application, water storage other than above-ground are included as conservation opportunities and are most likely capital conservation projects.

As a water provider or user, you know your water demands and water conservation opportunities better than anyone. We would appreciate your assistance with this important data collection effort by completing this survey. Your participation will help provide the building blocks we need to begin to identify and achieve potential future water supplies. Please answer the questions as completely as possible, to the best of your ability. We appreciate your help with this important effort.

This inventory of already-identified, potential conservation projects includes both capital and programmatic projects. Capital projects are defined as one-time, large investments resulting in water savings. Examples include reclaimed water plants, reservoir covering, transmission line upgrades reducing leaks, or industrial engineering modifications to re-use process water. Programmatic projects are defined as ongoing investments resulting in water savings. Examples include facilitating upgrades to more efficient water using devices (e.g., distributing free showerheads, toilet rebates) and distribution system leak detection programs. The conservation inventory is primarily intended to include "planned" projects rather than projects that are currently being implemented. However, currently active programmatic projects may be listed if they will continue or expand in future years. The inventory of projects submitted will be compiled by county or basin.

Examples are provided below.

	Example Capital Conservation Project	**Example Programmatic Conservation Project**
Project Description Provide brief sentence	Line 3 miles of unlined ditch.	Toilet rebate program for residential customers
Estimated Future Savings Provide brief sentence, including information regarding savings seasonality.	20 acre feet of water per year	If we spend our full budget each year, we estimate 50,000 gallons of water save per year
Seasonality Indicate what part of the year savings are generated (e.g. year-round; summer only; etc.).	Peak (irrigation) season savings.	Savings should occur throughout the year.
Estimated Future Costs Provide brief sentence.	$500,000 total project costs.	$40,000 a year.
Implementation Schedule Provide brief sentence.	Not set. Have conducted cost and savings estimate, but still seeking funding.	We started the program in 2005 and plan to implement until 2015.
Project Funded? Designate either "yes", "no", or provide brief sentence if necessary	No. Pursuing grant funding.	Yes. IN our CIP through the next 5 years.

To add a project to the inventory of potential conservation opportunities, please provide the following information for each conservation project.

This is a ☒ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	**Christopher Pipeline Project**
Project Description	Pipe a 4000 foot irrigation lateral canal and connect current water users adjacent to the new pipeline as well as irrigators using water from the Central Lateral operational spill.
Estimated Future Savings	~0.5 cfs
Seasonality	April - October
Estimated Future Costs	TBD
Implementation Schedule	2014-2016
What are the barriers to implementation, e.g. funding?	No barriers to implementation
This is a ☒ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	**EFID On-Farm Irrigation Efficiency Upgrades**
Project Description	According to recent survey by irrigation district manager, an estimated 5700 acres of agricultural land in EFID is irrigated with low efficiency irrigation systems. This includes hand and wheel lines and solid-set impact sprinklers. Those who have converted to solid-set rotator or micro-sprinkler systems can achieve over 40% water savings. Soil moisture sensors are another critical component to conserving water.
Estimated Future Savings	For 5,700 acres, potential savings could be approximately 15 cfs during the May – September period.
Seasonality	May-September
Estimated Future Costs	$5, 700,000
Implementation Schedule	ongoing
What are the barriers to implementation, e.g. funding?	Funding, landowner willingness

- Include this form with your application -