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

I. Grant Information

Study Name: *Aquifer Storage and Recovery Potential-Walla Walla Basin, Eastside Alluvial Aquifer*

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: $ 129200 Total cost of planning study: $ 129200*

Note: Request may not exceed $500,000

II. Applicant Information

Applicant Name: Walla Walla Basin Watershed Council	**Co- Applicant Name:**
Rick Henry	Contact:
810 S. Main St.	Address:
Milton-Freewater, OR 97862	
Phone 5419382170	Phone:
Fax:	Fax:
Email: rick.henry@wwbwc.org	Email:

Fiscal Officer Name: Wendy Harris	**Principle Contact: John Zerba**
Organization: Walla Walla Basin Watershed Council	Organization: Board President-Walla Walla Basin Watershed Council
810 S. Main St.	Address: 810 s. Main St.
Milton-Freewater, OR 97862	Milton-Freewater, OR 97862
Phone: 5419382170	Phone: 5419382170
Fax:	Fax:
Email: wendy.harris@wwbwc.org	Email: wahs@bmi.net

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: *12/15/2011*

Print Name: *Rick Henry* Title: *Hydrogeologist*

III. Planning Study Summary

Please give a brief summary of the planning study using no more than 150 words.
This planning study will accomplish two goals:
The study will help fund a bi-state strategic plan for aquifer restoration and flow recovery. This will utilize data from over 100 wells, 60 surface-water points, seepage analysis, several aquifer recharge projects, and modeling tools such as IWFM and Hydrus 2D/3D. These tools and data sets have been in development for nearly 10 years and we believe sufficient information has been collected to be able to compile this data into a comprehensive recovery plan.
The second component will focus on the feasibility of shallow aquifer recharge in the depleted 'Eastside' sub-basin of the alluvial aquifer; with the added component to investigate recovery of a portion of the recharged water to supplement instream flows during irrigation season. Due to aquifer depletion in this particular sub-basin, seepage loss in the adjacent mainstem Walla Walla River can exceed 75% in the summer.

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 how the planning study will be performed. Include:

   a. A description of the planning schedule/timeline, which includes identifying all key tasks. (Section VI provides an opportunity for a "graphical" representation of the schedule.)

   Due to secured WDOE funding and a Walla Walla Watershed Management Partnership request (attached), we intend to start the development of the bi-state strategic plan immediately-with the intention to have regulatory and tribal stakeholders reviewing the draft recommendation by September 2012.

   The feasibility study would begin with an assessment of existing wells in the project area that have not been utilized for the geological mapping that was performed in 2006 and/or are not in our current groundwater monitoring program. This information would be compiled with the current set of data by late summer 2012 to determine the most suitable well locations (up to three) for additional stratigraphic information or clarity. Additionally, this information will serve to site a test well in a location most suitable for aquifer development (recovery of potential recharges water) in this sub-basin. Wells such as UMAT 6475 (attached) which appear to be co-mingling with the underlying basalt aquifer, will be identified. Prelininary information on wells such as this indicates upwards of several hundred acre-feet may be moving from the shallow alluvial aquifer to the basalt aquifer, just in this sub-basin.

   Once well sites are determined in late summer 2012, drilling will be completed by mid to late fall 2012-with the ultimate goal to perform a long-term (48 to 72 hour) pumping test during the winter of 2012/2013, when irrigation demand is low and natural system responses are easiest to observe. Data from the test well and surrounding monitoring wells will be compiled for analysis and integrated into IWFM and Hydrus2D/3D. This analytical work, final report and recommendation will be completed by mid spring 2013 and will result in an analysis and working model to predict the storage and recovery potential of the Eastside sub-basin.

   b. When the planning study could begin.

   Immediately, once funding is secured.

2. 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.

WWBWC staff: Rick Henry, hydrogeologist; Troy Baker, GIS database manager; Steven Patten, environmental scientist; Will Lewis, hydrologic technician.

GSI Water Solutions:Kevin Lindsey, hydrogeologist; Ari Petrides, hydrogeologist (developer of IWFM and Hydrus 2D/3D for Walla Walla)

3. What local, state or federal project permitting requirements/issues do you anticipate in order for the planning study to be conducted?

The only permitting requirements for the feasibility study are for the drilling of up to four wells and the permit requirements for the long-term pumping test.

4. Are permits/governmental approvals required for the planning study? If yes, indicate whether you have obtained the necessary permits/governmental approval. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them.

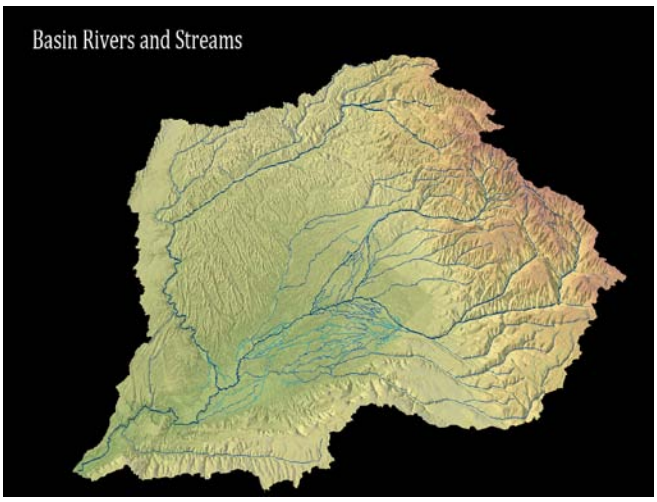
   no

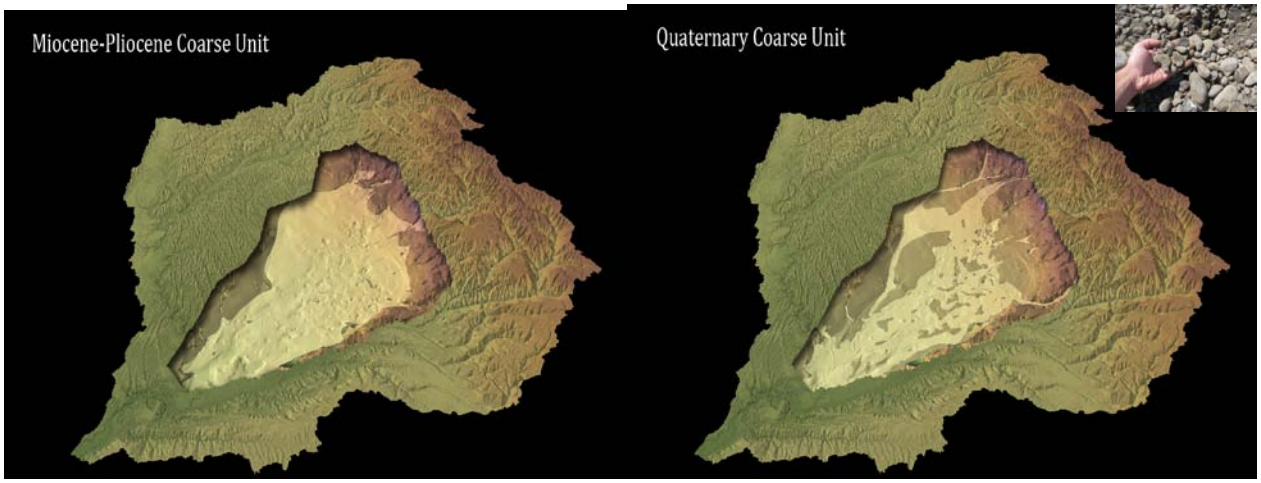
5. Describe your goal (which must be based on evaluating the feasibility of developing a water conservation, reuse or storage project) and how this study helps to achieve the goal.

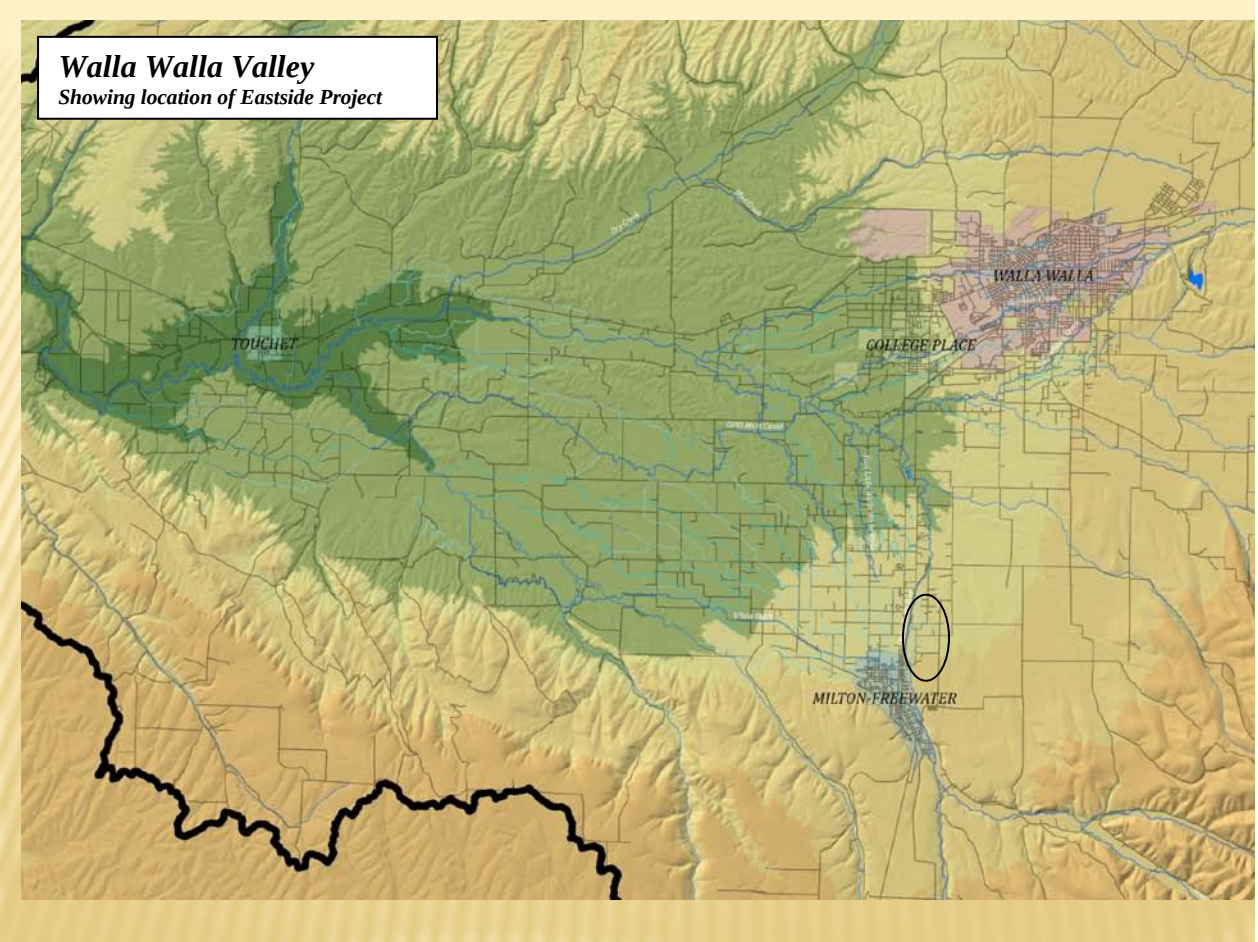
We aim to explore the possibility of utilizing the depleted shallow alluvial aquifer for seasonal storage of irrigation water- with the ultimate goal of reclaiming a portion of the stored water during irrigation months. Providing an alternative source of summer-time irrigation water will directly leave water instream. Additionally, due to the location of the project, aquifer storage increases will have direct effect to seepage loss in the Tum-a-lum reach of the mainstem Walla Walla River. This study will determine the potential storage of the aquifer and what options would be available to reclaim the water from the groundwater system.

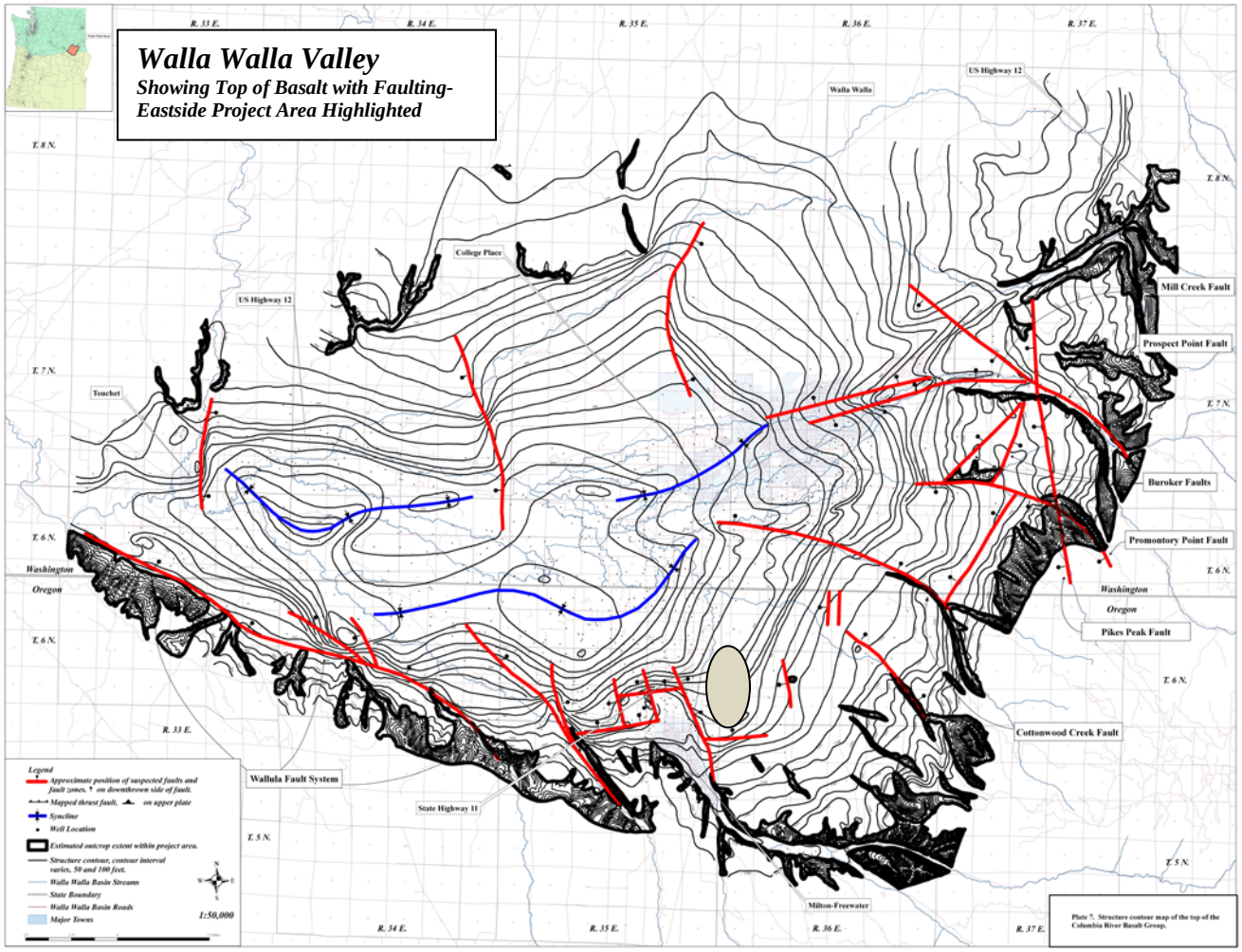
6. Describe the technical aspects of the planning study and why your approaches are appropriate for accomplishing the goal of the planning study.

Through a series of faults within the Columbia River Basalt Group, the Walla Walla Valley is defined by upwards of 800 feet of Mio-Pliocene age and more recent alluvial sediments. Headwaters of the Walla Walla River and its tributaries originate in the Blue Mountains and eventually converge within the Walla Walla Valley-upon the alluvial aquifer.

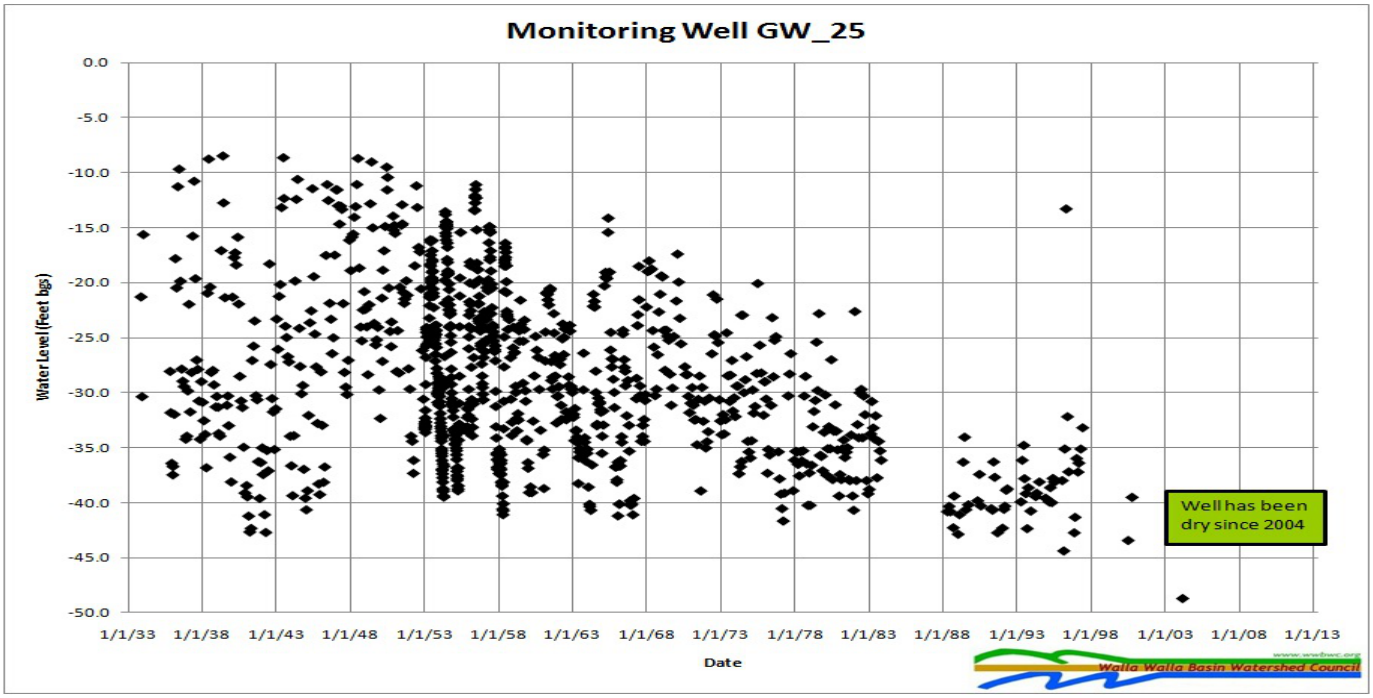



Miocene-Pliocene Coarse Unit
Quaternary Coarse Unit


Walla Walla Valley
Showing location of Eastside Project
TOUCHET
COLLEGE PLACE
WALLA WALLA
MILTON-FREEWATER



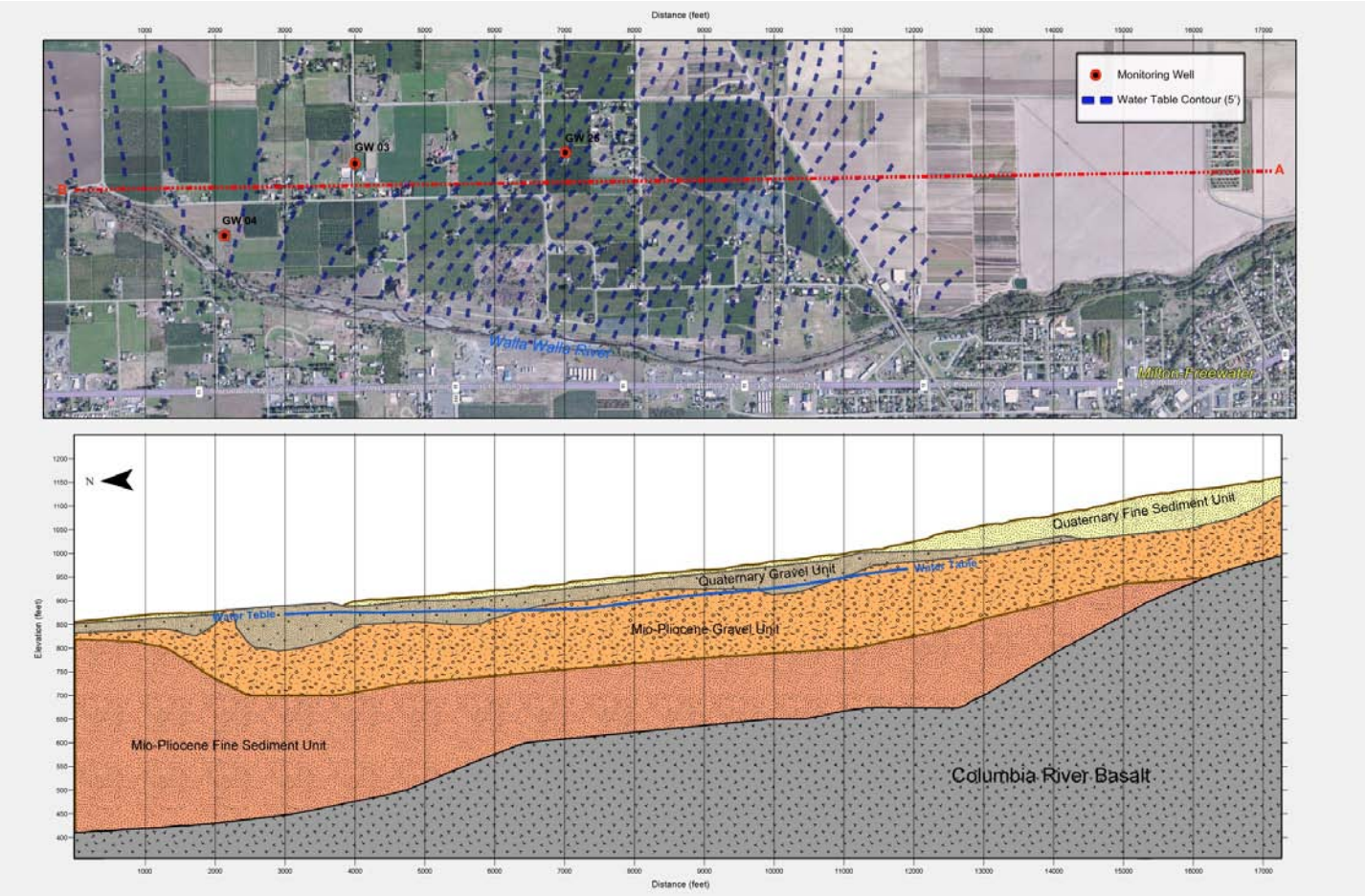
Oregon Water Resources Department (OWRD) monitoring wells have recorded groundwater declines in excess of 40 feet or more in its monitoring network since the 1930s.



Due to the highly permeable nature of the alluvial sediments, seepage loss from surface water bodies, including the mainstem Walla Walla River, to the alluvial aquifer can be very significant in some regions of the valley.

Since 2004 the WWBWC has been monitoring the valley's hydrology while developing several shallow aquifer recharge projects (SAR). Monitoring data has shown SAR projects over the last several years have had multiple benefits; from the reactivation of spring creeks and biological enhancement through flow- to the documentation of longterm aquifer-storage gains. Through past and present Oregon Watershed Enhancement Board (OWEB), Bonneville Power Administration (BPA) , and Washington Department of Ecology (WDOE) funding, the WWBWC continues to develop additional SAR projects. However, more recently the WWBWC and watershed stakeholders have discussed the need for a strategic plan to better focus SAR effort and funding. Through the development of modeling tools along with the continued service of the valleys monitoring network, the WWBWC believes we are positioned well to coordinate the development of a SAR mitigation strategy in the bi-state valley. Initial model runs of IWFM indicate annual aquifer storage losses of 6,000 to 7,000 acre-feet, across the whole model area. How to mitigate for this decline and ultimately how to achieve recovery would be the primary objective of this assessment and strategic plan.

The "Eastside" sub-basin of the alluvial aquifer is underlain by 300 to 500 feet of alluvial material, with much of the upper 200 feet being very coarse grained. This region is bound by the mainstem Walla Walla River to the west and basalt to the south and east. Historical groundwater declines in this region have exceeded 40 feet in some cases. Due to the high permeability of the sediments, a strong downward hydraulic gradient exists between the Walla Walla River and the adjacent Eastside sub-basin.



The amount and thickness of alluvial material, vs. basalt bedrock, in this region appears to be significant. However, unlike many other regions in the valley, this sub-basin is somewhat restricted or limited in its ability to recharge itself. Through IWFM we have been able to determine the recharge of the alluvial aquifer in a given year is primarily through surface-water infiltration of the one of the many streams, spring creeks, or irrigation canals. The Eastside area is limited by the lack of ditributary channels, the leveeing of the River itself, and the lack of any open irrigation canals. Annual recharge of the local sub-basin in the Eastside region is by and large limited to seepage loss from the mainstem Walla Walla River and excess irrigation water that ultimately percolates to the aquifer.

Due to the historical groundwater declines, it appears from initial calculations - based upon geologic data and past and present water level data, that 2,500 to 5,000 acre-feet of aquifer storage may be available in the Eastside sub-basin. Water stored in the aquifer could potentially be re-used during irrigation months for instream flow benefit as well as serve as a mechanism to reverse the increasing seepage loss trend being monitored in the river.

7. 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.

We have received support from our WWBWC Board of Directors, Hudson Bay District Improvement Company, Garden Farms Irrigation District number #13, the Walla Walla Watershed Management Partnership, and the Washington Department of Ecology. Discussions with the Confederated Tribe of the Umatilla Indian Reservation has been very positive and their involvement with this water-saving study may increase. I have attached letters of support from HBDIC, GFID, and the WWWMP. I am hopeful to receive letters of support from the Walla Walla River Irrigation District, the Tribe, as well as ODFW in the near future.

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. 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.

3. 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.

4. 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).

5. 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.)
   b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.
   c. Environmental flow needs and water quality requirements of supply source water bodies and water bodies downstream of associated and/or affected return flows.
   d. Reliance on return flows by downstream water right holders.

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

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

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).

4. 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.

5. 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.)

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

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

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

   e. Proposed purposes and uses of stored water.

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

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

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

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

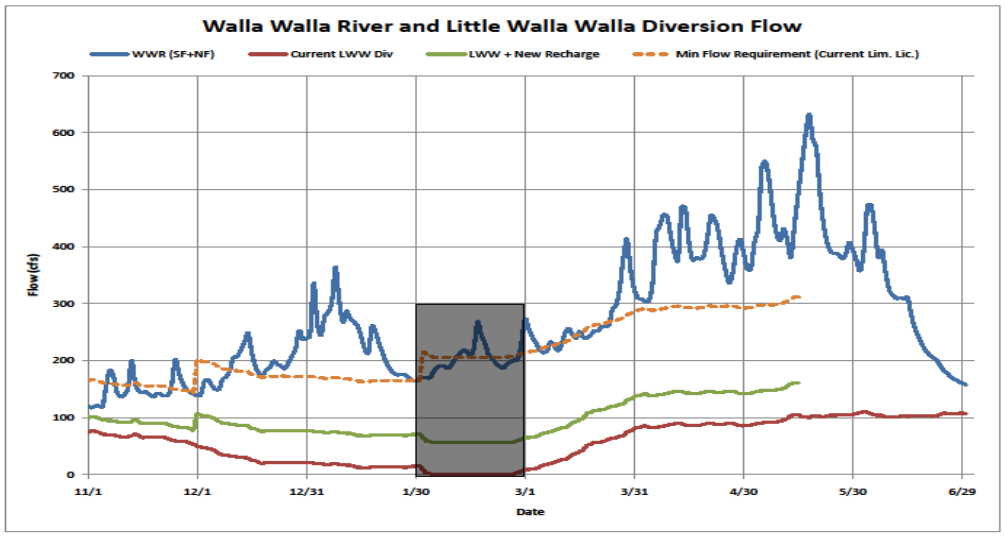
Will the project divert greater than 500 acre-feet of surface water annually?	☒ Yes	☐ No
Will the project impound surface water on a perennial stream?	☒ Yes	☐ No
Will the project divert water from a stream that supports sensitive, threatened or endangered species?	☒ Yes	☐ No

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.**

Operation of the current HBDIC SAR site requires minimum instream flows to be met, per its OWRD Limited License. This minimum value varies upon the month operation (from November to May 15th). The below figure illustrates an average flow for the Walla Walla River near Milton – Freewater over the past six years. The red line should be considered the baseline of the Little Walla Walla Diversion, while the green line would signify the addition of approximately 70 additional cfs over the baseline. The upper orange line signifies the minimum instream flow requirement (at the current OWRD-LL value) that would need to be met in order to divert up to 70 additional cfs to SAR projects. For our purposes, this feasibility study looks to examine the possibility of diverting up to 15 cfs to SAR activities and ultimate recovery. (Note: the month of February is a service period for the diversion and it is off during this period)



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.**

Alternatives to this proposal would be for large scale above ground storage, aquifer storage recovery in the basalt aquifer, and lining the Walla Walla River. Large scale storage options have been investigated by the COE and are currently cost prohibitive. ASR into the basalt aquifer is a possible option. However, higher pumping costs would likely be a factor as well as the lack of shallow aquifer benefit to the Walla Walla River. Lining the river is impractical.

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

Given this project aims to store water underground, in the alluvial aquifer, the environmental benefits are potentially very significant with little impact to the land. Aside from the instream flow requirements for SAR and ecological flow considerations, such as 10% of the 2-yr high water flow, no additional environmental impact is anticipated beyond the construction of up to four additional wells.

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.**

The Walla Walla River Irrigation District and Hudson Bay District Improvement Company are abiding by a non-formal settlement agreement from 2000, which 25 cfs is left instream during the summer. This project looks to ultimately double that value with an additional 25 cfs being provided by water stored from this project and a potential small-scale reservoir of 1000 acre-ft. The ultimate goal would be to have 5,000 ac-ft of stored water available for irrigation. This would roughly equate to, in one scenario, approximately 25 cfs being left instream for 100 days.

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. 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.

This project would serve as a flexible water source for the two primary irrigation districts in Oregon. HBDIC is a primarily spring-time and early summer water user while the WWRID is primarily a summer-time irrigator. This project would allow the WWBWC to explore the feasibility of aquifer storage and recovery in the gravel aquifer-a project type that has not been explored formally in the alluvial system, and cannot explore under our current grant funding from other agencies to implement capital projects.

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).

Under our current condition, approximately 80 cfs is suppied to WWRID and HBDIC during the low flow summer months. This project aims to explore the feasibility of providing flexibility with 25 cfs, of the approximate 80cfs. Given the current ESA species restoration

efforts and Chinook recovery from the Tribe, the implementation of this project would bring very significant biological

4. 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.

   Under our current funding through OWEB and BPA, we do not have the flexibility to explore the feasibility of new projects in areas where we have limited information. These two grants are targeted at project implementation. This grant opportunity serves as the only chance to access funds to complete this type of feasibility study in an area we believe is critical to the recovery of the hydrological system.

5. 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.)

      Walla Walla Basin, Umatilla County, City of Milton-Freewater, 5N,36E, 1, NW, NE

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

      Walla Walla Rive rpotential diversion at the Eastside Diversion: 45°56'41.66"N ; 118°23'1.69"W

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

      This projects meets current instream flow requirements under the OWRD LL for the current HBDIC project and meets the basic criteria of 10% of the 2-year high flow event.

   d. Proposed purposes and uses of stored water.

      Irrigation for WWRID and HBDIC-for instream benefit/instead of existing surface diversion.

   e. Environmental flow needs and water quality requirements of source water.

      Water quality requirements, if a SAR-AR project were to go forward would likely be similar to the requirements under the current SAR project-which uses the same source water.

   f. Water quality, storage capacity, and geologic aspects of the associated aquifer(s) and/or recharge zones.

      The initial estimations of aquifer storage availability range from 2,500 acre-feet to 5,000 acre-feet. The attitude and orientation of the underlying basalt bedrock, as well as to the south and east, confine processes and water management changes-and their effects, to this local sub-basin. One of the benefits to this project is 'controlled' nature of the project area, which makes characterization of its behavior less complex in some regard.

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

None at this time.

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, 2011. Resources expended prior to July 1, 2011 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, 2011.
	• 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)*
OWEB- Aquifer Replenishment	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	*317519*	*5/24/10 – 12/31/12*
OWEB- Aquifer Replenishment, Effectiveness	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	*76200*	*5/24/10 – 12/31/14*
BPA- Capital Restoration, Walla Walla River Flow	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	*152000*	*9/1/10 – 8/31/12*
WDOE- Aquifer Restoration Phase III	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	*803500*	*12/12/09 – 12/31/11*
WDOE-Aquifer Restoration Phase IV	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	*550000*	*1/1/12 – 12/31/13*
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		

VI. Project Planning Study Schedule

Estimated Project Duration: _____ to _____

Place an "X" in the appropriate column to indicate when each element (key task) of the project will take place.

	2012		2013			
Project Planning Study Element (Key Tasks)	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Development of Strategic Plan	x					
Well inventory, mapping improvement	x	x				
Well Siting and Drilling		x				
Aquifer Test		x	x			
Data Integration into modeling			x	x		
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 *Note: Administrative costs may not exceed 10% of the total funding requested by the Department.*	**Unit * Number** *(e.g. # of hours)*	**Unit Cost** *(e.g. hourly rate)*	**In-Kind Match**	**Cash Match Funds**	**OWRD Grant Funds**	**Total Cost**
Well Drilling(1 testwell-up to 3 mont wells)						*75000*
GSI-Hydrological Consultation						*25000*
Pumping Test-Contractor						*16000*
WWBWC Staff Support						*12000*
Administrative Costs						*1200*
Total for Section A						*129200*
Percentage for Section A						***100%***

** Note: The "Unit" should be per "hour" or "day" – not per "project" or "contract."*

Section B

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

Project Planning Study Element (Key Tasks)	**In-Kind Match**	**Cash Match Funds**	**OWRD Grant Funds**	**Total Cost**
Aside from funding from WDOE to provide staff funding to aid in the development of a strategic plan; none of the listed grants and there intended match will be supplying funds to the wells installation and testing. However, given the project would take place with in our monitoring network- the work that has taken place and will take place through OWEB and BPA funding to maintain the network will provide valuable background and potential effectiveness monitoring. As outlined in the proposal secured funding from other agencies is mainly focused at project implementation and not assessment and feasibility,				
Total for Section B				

Totals in Section B must match the totals in Section A

APPLICATION CHECKLIST

Instructions: Use this form as an important cross-check to ensure that your application is complete. An incomplete application will jeopardize your application's review. **This form does not need to be included in your application packet.**

General

If submitting electronically the preferred format is either a Microsoft word or Adobe pdf

- ☐ Only one application is included with the packet (other applications must be sent separately).

Paper submissions only

- ☐ The application and attachments are on 8 ½" x 11" paper.
- ☐ The application and attachments are single sided.
- ☐ The application and attachments are not stapled or bound.

Section I – Grant Information

- ☐ All questions in this section have been answered.
- ☐ The Grant Dollars Requested and the Total Project Cost mirror the totals shown in Section VII.

Section II – Applicant Information

- ☐ All contact information – for the applicant(s) and fiscal officer – is complete and current.
- ☐ The certification is signed by an authorized signer.

Section III – Planning Study Summary

- ☐ A brief summary, of no more than 150 words, is complete.

Section IV – Grant Specifics

- ☐ All questions in Section A have been answered.
- ☐ If the type of planning study is Water Conservation, Reuse or Storage Other Than Above-Ground, a Request to be added to the Oregon Water Resources Department's Inventory of Potential Conservation Opportunities has been completed. (Form is located at the end of this document.)
- ☐ All applicable questions for the type of grant requested have been answered.

Section V – Match Funding Information

- ☐ Applicant has identified that at least 50% match has been sought, secured or expended.
- ☐ Letters of support are included for "secured" match funding sources.
- ☐ Documentation is included for "expended" match funds.
- ☐ Documentation is included for "pending" match funds.

Section VI – Project Planning Study Schedule

- ☐ Estimated project duration dates have been supplied.
- ☐ All elements (key tasks) of the project are listed.

Section VII – Project Planning Study Budget

- ☐ Section A is complete.
- ☐ Administration costs do not exceed 10% of the requested OWRD Grant Funds.
- ☐ If grant amount requested is $50,000 or greater, Section B has been completed.
- ☐ All elements (key tasks) listed in Section B mirror the elements listed in Section VI.

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	*Aquifer Storage and Recovery Potential-Walla Walla Basin, Eastside Alluvial Aquifer*
Project Description	Feasability of aquifer storage and recovery for instream benefit near Milton-Freewater Oregon.
Estimated Future Savings	Unknown. Potentially millions of dollars.
Seasonality	This project would be active during low flow times and recharging during high flow periods.
Estimated Future Costs	Unknown capital cost for implementation at this point in assessment.
Implementation Schedule	Next 18 months
What are the barriers to implementation, e.g. funding?	Funding, feasibility, relatively new project type.
This is a ☐ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	
Project Description	
Estimated Future Savings	
Seasonality	
Estimated Future Costs	
Implementation Schedule	
What are the barriers to implementation, e.g. funding?	

- Include this form with your application -

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
APR 20 1981
WATER RESOURCES DEPT
SALEM, OREGON

PAGE #1.
State Well No. 6N/35E-36bd
State Permit No.
UMAT 6475

(1) OWNER:
Name Sam LeFore
Address Rt.1 Box 174 East side Rd.
Milton Freewater Oregon.

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [X] Driven [ ]
Cable [ ] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) CASING INSTALLED: Threaded [ ] Welded [X]
10" Diam. from 0 ft. to 40 ft. Gage 0250
8" Diam. from 20 ft. to 240 ft. Gage SCH 160
" Diam. from ft. to ft. Gage

PERFORATIONS: Perforated? [X] Yes [ ] No.
Type of perforator used Whole Saw
Size of perforations 1 in. by 1 in.
500 perforations from 100 ft. to 240 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom?
Yield: 450 gal./min. with 26 ft. drawdown after 4 hrs.
" " "
" " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 54 Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 28 ft.
Diameter of well bore to bottom of seal 12 in.
Diameter of well bore below seal 10 in.
Number of sacks of cement used in well seal 23 sacks
How was cement grout placed? pumped

Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Umitilla Driller's well number
SW ¼ NW ¼ Section 36 T. 6 R. 35E W.M.
Bearing and distance from section or subdivision corner
Tax Lot 1400 Rt 1 B 174
East Side Rd

(11) WATER LEVEL: Completed well.
Depth at which water was first found 80 ft.
Static level 100 ft. below land surface. Date Jan 29-81
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 10
Depth drilled 243 ft. Depth of completed well 240 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Brown loam top soil	0	23	
Tan clay and bolders loose and cavy	23	34	
Brown hard pan with 2" to4" rocks hard.	34	56	
Boulders 1 ft and larger in hard pan tan and brown in color.	56	68	
Yellow clay small gravel simi soft with a trace of sand in the clay.	68	79	
Blue clay muck	79	81	
Yellow sandy hard pan porus and waterbearing.	81	151	
Dark brown clay and gravel 1"-3" Soft.	151	159	
Grey clay Soft	159	164	
Black basalt	164	184	
Blue clay	184	223	continue

Work started 1-26-81 19 Completed 1-29-81 19
Date well drilling machine moved off of well 1-29-81 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 1-29-81 19
Drilling Machine Operator's License No. 1298

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Goral LaPorte Well Drilling (Person, firm or corporation) (Type or print)
Address Rt 1 Box 101 M F Oregon
[Signed] (Water Well Contractor)
Contractor's License No. 75 Date 1-29-81, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-110

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT
SALEM, OREGON 97310
within 30 days from date of well completion.

RECEIVED
APR 20 1981
WATER RESOURCES DEPT.
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

Page # 2

State Well No. 6N/35E-36bc

State Permit No.

(1) OWNER:
Name Sam LeFore Page # 2
Address

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED: Threaded ☐ Welded ☐
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS: Perforated? ☐ Yes ☐ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☐ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
How was cement grout placed?

Was a drive shoe used? ☐ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☐ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Umatilla Driller's well number
SW ¼ NW ¼ Section 36 T. 6 R. 35E W.M.
Bearing and distance from section or subdivision corner
Tax Lot 1400 Rt 1 Box 174
East Side Rd

(11) WATER LEVEL: Completed well.
Depth at which water was first found ft.
Static level ft. below land surface. Date
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing
Depth drilled ft. Depth of completed well ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Continued from Page # 1.			
Broken Black basalt			
mixed with soft blue clay			
and small gravel	223	225	
Hard black basalt	225	226	
Broken black basalt			
with streaks of red and			
black cinder and lava rock			
in layers. Water bearing			
	226	233	
hard black basalt dense	233	235	
Brokem and very porus			
lava rock water bearing			
very cavy	235	243	

Work started 19 Completed 19
Date well drilling machine moved off of well 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 1-29-81, 19
Drilling Machine Operator's License No. 1298

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Goral M. LaPorte Well Drilling. (Person, firm or corporation) (Type or print)
Address Rt 1 Box 101 M.F. Oregon
[Signed] (Water Well Contractor)
Contractor's License No. 756 Date 1-29-81, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

Walla Walla Watershed Management Partnership

For Fish. For Farms. For Everyone.

November 21, 2011

Brian Wolcott, Executive Director
Walla Walla Basin Watershed Council
810 South Main / P.O. Box 68
Milton-Freewater, OR 97862

Dear Brian:

The Walla Walla Watershed Management Partnership (Partnership) recently completed a series of "Discussion Forums" convened by our Policy Advisory Group with stakeholders considering shallow aquifer recharge as an important contributor to the Partnership's work under RCW 90.92 to enhance stream flow conditions. Throughout the multiple meetings held on this topic, the Walla Walla Basin Watershed Council (WWBWC) was well represented by Rick Henry providing important information on WWBWC's shallow aquifer recharge (SAR) pilots and ground water monitoring programs.

The Partnership appreciates WWBWC's leadership in SAR, and was encouraged to hear in Rick Henry's November 1, 2011 Partnership Board meeting presentation that new modeling efforts and a five-year history of piloting and monitoring SAR has prepared the WWBWC to expand recharge into new sites with new partners. The progress made in developing and piloting SAR is recognized by the Partnership through inclusion of recharge in Local Water Plans, acknowledging the value of different types of recharge including the use of existing distributary streams.

The Partnership Board is in agreement that a basin-wide strategy for utilization of SAR would be a valuable next step, identifying SAR expansion priorities and addressing the barriers to broad and efficient implementation of SAR. The Partnership requests that the WWBWC lead development of a draft strategic plan for SAR, with participation and review by the Partnership's Water Resource Panel and Policy Advisory Group. Through an inclusive and science-based approach to developing a SAR strategic plan, the Partnership Board would embrace the opportunity to join basin partners in endorsing and supporting implementation of SAR as a water management tool.

The WWBWC is well-positioned to lead the SAR strategy development, and basin stakeholders appreciate your commitment to advance SAR in the Walla Walla basin. The Partnership looks forward to working with the WWBWC in this SAR strategy development effort, finding it to be a unique opportunity to effect more positive changes for the benefit of fish, farms and people in the Walla Walla basin. If you have any questions, please contact Partnership staff Cathy Schaeffer at 509.524.5216 or cathy.schaeffer@wwcc.edu.

Sincerely

Edward Chvatal, Jr., Chairman
Walla Walla Watershed Management Partnership

cc: Rick Henry, Walla Walla Basin Watershed Council

p. 509.524.5216 · f. 509.524.5209 · Water & Environmental Center · 500 Tausick Way · Walla Walla, WA 99362 · wallawallawatershed.org

December 14, 2011

Bill Fujii
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Dear Mr Fujii:

This letter should serve as verbal support for the Walla Walla Basin Watershed Council's 2011 grant proposal for the OWRD-Conservation/Reuse/Storage Grant Program.

The feasibility study and strategic plan outlined in the proposal will provide critical information and guidance toward quantifying the means necessary to achieve sustainable restoration in our watershed.

Sincerely,

John Zerba
Secretary/Treasurer
Hudson Bay District Improvement Company

December 14, 2011

Bill Fujii
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Dear Mr Fujii:

This letter should serve as verbal support for the Walla Walla Basin Watershed Council's 2011 grant proposal for the OWRD-Conservation/Reuse/Storage Grant Program.

The feasibility study and strategic plan outlined in the proposal will provide critical information and guidance toward quantifying the means necessary to achieve sustainable restoration in our watershed.

Sincerely,

Stuart A. Durfee

Stuart Durfee
District Manger
Gardena Farms Irrigation District #13