GREATER WENATCHEE IRRIGATION DISTRICT
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UPDATES TO 2015 WATER AND ENERGY CONSERVATION PLAN

Water Conservation Field Services Program (FOA BOR-PN-17-F001) Grant Application for Funding to Update Greater Wenatchee Irrigation District's 2015 Water and Energy Conservation Plan

Funding Category: ***Water Management and Conservation Plan Development***

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DETAILED SCOPE OF WORK

District Background, Location, and Relationship to Reclamation

General Information

The Greater Wenatchee Irrigation District (District) is part of the United States Bureau of Reclamation (Reclamation) Chief Joseph Project in the Columbia River Basin and was authorized by Congress on May 5, 1958, pursuant to Public Law 85-393. The District's facilities are located in Douglas and Chelan counties in Washington and were planned, designed, and constructed by Reclamation.

The District serves approximately 9,745 acres of irrigable lands through three closed-pipe distribution systems. Chief Joseph Dam, constructed by the U.S. Army Corps of Engineers, is on the Columbia River in north central Washington. The District was originally built by Reclamation in the years 1960 to 1965. Approximately 93 percent of the water use is agricultural, primarily to irrigate apple orchards. The District is composed of three units: the East Unit; Brays Landing; and Howard Flats. Each unit is comprised of an independent irrigation system with unique source and conveyance facilities, which are described in the following sections (**Vicinity Map** attached).

East Unit

The East Unit serves approximately 5,575 acres in the East Wenatchee area of Douglas County. The water demand in the East Unit has averaged 2.83 acre-feet (af) per acre in the last 10 years. The East Unit includes Washington State water rights S3-00800C, S4-26127P, S4-28566P, and S4-29269P, totaling 27,012 af of annual withdrawal volume. Water rights are held in the name of the United States acting through the Regional Director, Pacific Northwest Region, Reclamation. The water is supplied to this unit via a two-stage pump station located on the Columbia River, approximately 3 miles southeast of East Wenatchee. There are a total of 44.36 miles of District-owned steel, polyvinyl chloride (PVC), asbestos cement, and concrete pipeline in the East Unit. There are four reservoirs with a combined storage capacity of 129.55 af. The East Unit has six pump stations with a combined rated capacity of 184.9 cubic feet per second (cfs).

Brays Landing Unit

The Brays Landing Unit is located approximately 8 miles north of Orondo, in Douglas County. The water supply for this unit is pumped from wells located adjacent to the Columbia River. The service area of this unit is approximately 2,818 acres in size. The water demand in the Brays Landing Unit has averaged 3.08 af per acre in the last 10 years. The Brays Landing Unit includes Washington State water rights 7150, G4-26878P, and G4-26128P, totaling 11,272 af of annual withdrawal volume. Water rights are held in the name of the United States acting through the Regional Director, Pacific Northwest Region, Reclamation.

There are a total of 22.1 miles of District-owned steel, PVC, and asbestos cement pipeline in the Brays Landing Unit. The unit contains 11 pressure reducing valves (PRV) in laterals. There are five reservoirs with a combined storage capacity of 4.08 af., and ten pump stations with a combined rated capacity of 157.08 cfs.

Howard Flats Unit

The Howard Flats Unit is located east of Chelan in Chelan County. The water supply for this unit is pumped from wells located adjacent to the Columbia River. The service area of this unit is approximately 1,240 acres, and the water demand has averaged 3.04 af per acre in the last 10 years. The Howard Flats Unit includes Washington State water rights 6592-A (Cert. Rec. 14 Pg. No. 6592-A), G4-26879P, and G4-26129P, totaling 5,068 af of annual withdrawal volume. Water rights are held in the name of the United States acting through the Regional Director, Pacific Northwest Region, Reclamation.

There are a total of 8.2 miles of District-owned concrete, asbestos cement, and PVC pipeline in the Howard Flats Unit. There are also 18 PRVs. There are three reservoirs with a combined storage capacity of 3.9 af. The Howard Flats Unit has six pump stations with a combined rated capacity of 67.58 cfs.

Proposed Activity and Desired Outcome

The proposed activity for this grant is to update the District's Water and Energy Conservation Plan (WECP). The District's current WECP was adopted in April 2015 with minor updates, but has not had substantial updates since 2011. The WECP needs to be updated again for several reasons, including the following.

- Reclamation recommends that water conservation plans be updated every 5 years, pursuant to the Reclamation Reform Act of 1982.
- The District has identified additional opportunities for improvements to its facilities and operations since the completion of its 2015 WECP.
- The District has made improvements and changes to its facilities and operations since 2015 that need to be more formally documented.
- Funding opportunities for water conservation, energy conservation, and irrigation system modernization are more varied than in 2015, and an up to date WECP will enhance the District's ability to apply and compete for funding opportunities.
- Governmental and non-governmental scrutiny of irrigation districts has increased since 2015, and an updated WECP will assist the District with telling its positive story to its customers and the public.

The desired outcome of the activity is for the District to have an up to date WECP that fulfills the needs described above.

Tasks and Approach

The District will employ RH2 Engineering, Inc., (RH2) to assist with the preparation of the updated WECP. Updating the current WECP will consist of intensely reviewing the previous WECP and the District's irrigation system, developing an updated hydraulic model of the network and analyzing scenarios using the hydraulic model, and identifying possible areas of efficiency improvements, including water and energy use.

The major project elements include:

1. Identification and evaluation of opportunities for irrigation system improvements, including transfers of water to agricultural lands to the north and east of the East Unit;
2. Review of power rates and identification of facility ownership options and alternative energy solutions;
3. Summarization of new water quality requirements and impacts to District storage facilities; and
4. Update of the WECP.

Task 1 – Coordination with USBR

1. Early on, RH2 and District management will meet with appropriate management and technical personnel of Reclamation's Ephrata field office to coordinate elements of the updated WECP that are within Reclamation's relationship to the District or that are otherwise relevant to the planning process. Such topics include, but may not be limited to:
    a. Water rights;
    b. Reserve power contracts;
    c. Transfers of water allotments within present service areas/District boundaries;
    d. Possible future service areas and changes in District boundaries;
    e. Environmental compliance; and
    f. Possible Reclamation assistance and/or oversight of various opportunities for improvements.

Task 2 – Coordination with Other Agencies

1. As appropriate and directed by the District, RH2 and the District will coordinate with other relevant agencies that may be helpful with or have oversight of opportunities for improvements that will be identified in the updated WECP. Examples of such agencies include, but may not be limited to:
    a. Douglas County Public Utility District (PUD);
    b. Bonneville Power Administration;
    c. Chelan County PUD;
    d. Washington State Department of Ecology; and
    e. City and county planning departments.

Task 3 – Collect Data

1. Meet with District staff to verify accuracy of data (tables, figures, maps, etc.) of present WECP.
2. Update data with current values if necessary.

3. Obtain and/or prepare up to date maps.
4. Attend site visits to become more familiar with District facilities.
5. Review existing water rights and correlate to annual usage.
6. Gather information on future service areas.
7. Gather information to review and compare crop irrigation requirements, residential use, and other water use. Identify water use trends, if any. Consider possible future use such as frost control, evaporative cooling of fruit, future municipal and industrial use, and possible future service areas.
8. Gather information to review and compare energy use for lift pumping, booster pumping, and other energy uses. Include analysis of timing of energy use on an annual, seasonal, daily, and hourly (if possible) basis. Identify trends, if any. Consider possible future changes in energy use and identify opportunities for conservation and load shifting.

Task 4 – Prepare Hydraulic Model

1. Prepare hydraulic model for Brays Landing and Howard Flats to similar level of detail as current model of the East Unit. Include pipes, pumps, and reservoirs.
2. Incorporate system mapping, pump and reservoir records, ground contours, current customer water use records, and system operational procedures.
3. Prepare pump testing methodology and perform pump testing as required to inform modeling efforts.
4. Develop daily water use curves by season and customer class.
5. Prepare multiple operational scenarios to represent the existing system; test and troubleshoot as necessary. Spot check the model results against field readings.
6. Develop a model alternative that includes planned capital improvements and land use changes to inform planning efforts.

Task 5 – Analyze Reserve Power Contract

1. Review, evaluate, and explain reserve power and wheeling contracts.

Task 6 – Analyze Opportunities for Improvements

1. Identify, evaluate, and discuss opportunities for improvements including, but not limited to:
    a. Energy conservation improvements to pumping plants;
    b. Mechanical improvements to pumping plants, which may include replacements;
    c. Metering improvements to include possible replacements;
    d. Pipeline improvements to include possible replacements;
    e. Storage improvements to both existing storage and possible future storage;
    f. Supervisory control and data acquisition (SCADA) system improvements;

g. Water records and water reporting improvements;

h. Possible revised water pricing; and

i. Possible future service areas and future customer groups that may benefit other entities as well as the District.

Task 7 – Analyze Environmental Effects

1. Identify, evaluate, and discuss environmental effects. Expand from scope of 2015 WECP updates to include any pertinent Clean Water Act or Endangered Species Act provisions or other current environmental concerns.

Task 8 – Analyze Funding Sources

1. Identify possible funding sources for improvements.

Task 9 – Prepare Draft WECP

1. Compile, write, and edit Tasks 3 through 8 (including hydraulic modeling) into a draft Water and Energy Conservation Plan for review by the District.
2. If required, coordinate a review of the draft plan with Reclamation.

Task 10 – Prepare Final WECP

1. Publish and distribute the final Water and Energy Conservation Plan.

Milestone Schedule

RH2 will proceed with the WECP upon approval of the contract by the District. The WECP will be finalized following reviews by the District and Reclamation (if required). The schedule presented in **Table 1** can be accelerated if funding is awarded earlier.

Table 1: Milestone Schedule

Task	May 2017	June 2017	July 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017
i. Notification of Award	X							
ii. Funding Awarded		X						
1. Coordination with Reclamation			X					
2. Coordination with Other Agencies			X					
3. Collect Data			X	X				
4. Prepare Hydraulic Model			X	X	X			
5. Analyze Reserve Power Contract					X			
6. Analyze Opportunities for Improvements				X	X	X		

Task	May 2017	June 2017	July 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017
7. Analyze Environmental Effects				X	X	X		
8. Analyze Funding Sources					X	X		
9. Prepare Draft WECP							X	
10. Prepare Final WECP								X

Benefit Outcomes

An updated WECP will result in numerous and varied benefits to the District. A revised and updated WECP can lead to subsequent implementation of conveyance, measurement, or operational improvements that increase water and energy use efficiency or enhance operational efficiency. Identifying opportunities for improvement is a key component of the WECP. Identified infrastructure or operational improvements can help the District meet the needs of its customers as efficiently as possible and minimize waste. By preparing a thorough, written WECP, the District can identify desired outcomes and avoid undesired pitfalls, mitigating risks and nearly ensuring successful outcomes. Water management planning can result in: better water service to customers; more effective use of available water supply; reduced operating costs; improved revenues to the District; improved crop yields and quality; reduced on-farm costs; habitat maintenance for endangered species; education of customers and the public; improved system and water supply reliability; and reduced drought impacts.

Performance Measurement and Evaluation

Evaluation of RH2 and the District's performance will be implemented on an ongoing basis throughout the entire WECP update process, via coordination with stakeholders (including Reclamation) and sharing of lessons learned. The ultimate measurement of success will be whether the opportunities for improvement that are identified can be implemented to achieve the benefit outcomes described above. The District is currently implementing an automatic meter reading upgrade program that was previously identified in the 2015 WECP, illustrating the past success of the District maintaining an updated WECP.

PROJECT-APPLICABLE CRITERIA

Sub-Criterion No. 1: Association with Reclamation project water supplies (up to 40 points).

Points will be awarded if the proposed activity is in a basin with connections to a Reclamation Project or activity. No points will be awarded for activities without connection to a Reclamation Project or Reclamation activity. Consider the following questions when addressing this sub-criteria element:

- *How is the proposed activity connected to a Reclamation Project?*
- *Does your entity receive Reclamation Project water?*
- *Is the proposed activity on Reclamation Project lands or involve Reclamation facilities?*
- *Is the proposed activity in the same basin as a Reclamation Project or activity?*
- *How will the proposed activity improve water availability in a basin where Reclamation is located?*

The District is part of Reclamation's Chief Joseph Project and was authorized by Congress on May 5, 1958, pursuant to Public Law 85-393. The District is within Reclamation's Pacific Northwest Region, Columbia-Cascades Area Office, Ephrata Field Office. The District's water supply is provided by ten separate Washington State water rights certificates and permits held by Reclamation. The District's facilities were planned, designed, and constructed by Reclamation, and title to those facilities is held by the United States. The District and its water supply are within the Columbia River basin and all benefits to water availability resulting from the project will directly benefit users in the Columbia River basin.

Sub-Criterion No. 2: Extent to which Federal funding would promote completion of an activity that might otherwise be delayed or postponed (up to 25 points).

Points may be awarded for a proposed activity that demonstrates financial need in order to get the activity accomplished. Consider the following questions when addressing this sub-criteria element:

- *Has the proposed activity been delayed or postponed due to past funding constraints? If so, for how long?*
- *If this is a newly proposed activity and if funds were not awarded, would that cause the completion of the activity to be delayed or postponed? If so, for how long?*
- *Explain why funds awarded under this FOA would help to accomplish the proposed activity.*
- *What is the extent of need for federal funds in order to complete the proposed activity?*

- *Would the proposed activity be accomplished at some point in the future without federal funding assistance?*

The District has not performed substantial updates to its WECP since 2011, although minor modifications were made in 2015. Since the 2011 update, the District has used its available discretionary funding to implement opportunities for improvement identified in the 2011 WECP (e.g., the automatic meter reading replacement program) instead of substantially updating the WECP itself. If funds were not awarded, the District may elect to continue delaying substantially updating the WECP so the automatic meter reading replacement program can continue. Funds awarded under this FOA would help accomplish this activity be allowing the District to continue implementing previously identified opportunities for improvement without further delaying updates to the WECP. The maximum allowable federal funding amount is needed to complete the proposed activity as currently envisioned. The WECP would be updated at some point in the future without federal aid, but at the expense of other programs and projects that achieve the larger goals of the Water Conservation Field Services Program.

Sub-Criterion No. 3: Reasonableness of costs (up to 20 points).

Points may be awarded when the costs associated with the proposed activity are reasonable and the ratio of benefits to these is substantial.

The work will be completed in the most cost-effective manner possible. RH2 prepared the District's 2015 WECP and has completed all of the appurtenance hydraulic modeling for the District to date. RH2 is uniquely suited to complete this work in the most efficient way possible, with long-standing relationships with the District and other stakeholders already established. RH2 has been working with the District for over 12 years and is intimately familiar with the District's system, future goals, and previous water and energy management efforts. RH2's rates and efficiency are extremely competitive. The costs for updating the WECP are small in comparison to the value of the potential benefits, considering the large quantities of water and energy that the District delivers and consumes.

Sub-Criterion No. 4: Amount and sources of non-Federal funding (i.e. cost-share) (up to 10 points).

Points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs and there are additional non-Federal contributors.

The District intends to exceed the minimum 50-percent share of project costs by providing funding for approximately 74-percent of the total project cost.

Sub-Criterion No. 5: Other Criteria (up to 5 points)

Points will be awarded for a proposed activity that is intended to update an existing water conservation plan.

The proposed activity is intended to update an existing water conservation plan. The proposed activity is to update the District's 2015 WECP.

DETAILED BUDGET NARRATIVE

The work will be completed by the District's engineering consultant (RH2) on a time and materials basis. RH2's Fee Estimate and Scope of Work to complete the WECP updates are attached at the end of this application as **Attachment 1**. RH2's costs are shown in **Table 2** as direct contractual costs. District personnel hours have been estimated and applied to District salaries, wages, and fringe benefits as shown in **Table 2**. No equipment costs, travel/mileage costs, subcontracts, environmental/regulatory compliance costs, or indirect costs are proposed.

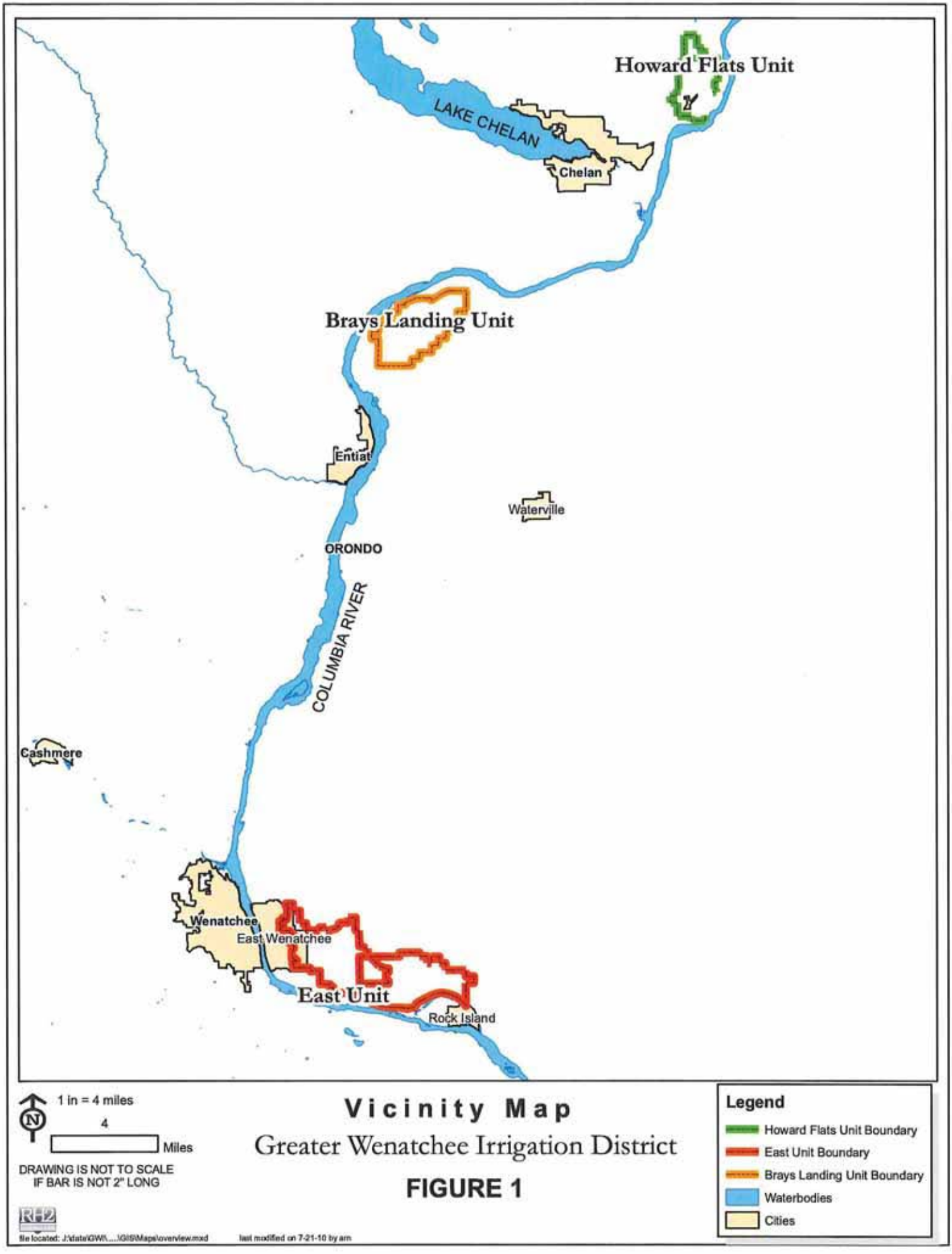
Table 2: Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION	Quantity	TOTAL COST
SALARIES AND WAGES	**Price/Unit**		
Manager/Secretary	$41.50/hr.	20	$ 830
Office Manager	$22.55/hr.	20	$ 451
FRINGE BENEFITS			
Manager/Secretary	$26.41/hr.	20	$ 528
Office Manager	$15.22/hr.	20	$ 304
CONTRACTUAL			
RH2 Engineering (see attached scope and fee)	$ 95,482.00	--	$ 95,482
TOTAL DIRECT COSTS			$ 97,596
INDIRECT COSTS			
None.	--		--
TOTAL ESTIMATED PROJECT COSTS			**$ 97,596**

Funding Plan

Cash funding for the non-federal share will be provided directly from the District's 2017 operations budget. The District is fully capable of supporting these costs within its existing budget. In-kind funding for the non-federal share will also be provided by the District personnel shown in **Table 2**. The Program Manager for the work will be Michael L. Miller (District Secretary/Manager). Fringe benefits include standard social security, Medicare, Labor and Industries (workers compensation), Public Employees Retirement System, life insurance, medical, dental, annual leave, and sick leave. District labor will be limited to coordination with RH2 and agencies, and review of draft work products.

Besides the federal funding from this grant, there will be no other funding partners or contributors. Contact information for the District is included on the title page of this grant application. No costs incurred before the project start date are sought to be included as project costs. No other federal funding will be utilized and no other pending funding requests exist for this project.



Vicinity Map

Greater Wenatchee Irrigation District

FIGURE 1

Exhibit A
Scope of Work
Greater Wenatchee Irrigation District
Water and Energy Conservation Plan Update
Professional Engineering Services

February 2017

BACKGROUND

The Greater Wenatchee Irrigation District (District) is located within Chelan and Douglas counties in Washington. Approximately 9,745 acres of irrigable lands are being served by the closed pipe systems of the East, Howard Flats, and Brays Landing units. The three units are separate land areas requiring independent irrigation systems. The District was formed to operate and maintain facilities constructed by the United States Bureau of Reclamation (Reclamation) in the mid-1960s.

The District's current *Water and Energy Conservation Plan* (WECP) was last adopted in 2015 with minor updates, but hasn't been significantly updated since 2011. It needs to be updated for several reasons, including the following.

- Reclamation recommends that water conservation plans be updated every five (5) years.
- The District has identified additional opportunities for improvements to its facilities and operations since the completion of the 2015 WECP.
- The District has made changes to facilities and operations since 2015 that need to be more formally documented.
- Funding opportunities for water conservation, energy conservation, and irrigation system modernization are more varied than in 2015, and an up to date WECP will enhance the District's ability to apply and compete for funding opportunities.
- Governmental and non-governmental scrutiny of irrigation districts has increased since 2015, and an updated WECP will assist the District with telling its positive story to its customers and the public.

Updating the current WECP will consist of intensely reviewing the previous WECP and the District's irrigation system, analyzing scenarios using the hydraulic model of the network, and identifying possible areas of efficiency improvements, including water and energy use.

The major design and project elements include:

1. Identifying and evaluating opportunities for irrigation system improvements, including transfers of water to agricultural lands to the north and east of the East Unit;
2. Reviewing power rates and identifying facility ownership options and alternative energy solutions;
3. Summarizing new water quality requirements and impacts on District storage facilities;
4. Collecting available system geographical information system (GIS) mapping data and evaluating update strategies and management options;
5. Producing GIS mapping for District review and editing; and

6. Updating the 2015 WECP.

The District will provide the following.

- Rate history on Bonneville Power Administration power costs and wheeling charges from Chelan and Douglas County Public Utility Districts (PUDs).
- Proposals by S&C Electric on solar plant options.
- Pump characteristic data (flow, head, brand, type, power, etc).

General: Time for project management has been incorporated into all tasks listed below. Project management includes:

- Reviewing project status and coordinating with both the District and the project team;
- Reviewing monthly billings and construction costs for adherence to the project budget; and
- Filing and project documentation.

PHASE I – AGENCY COORDINATION

Task 1 – Advance Coordination of WECP Update with Reclamation and Other Agencies

Approach:

1.1 Early on, meet with appropriate management and technical personnel of Reclamation's Ephrata field office with District management to coordinate elements of the updated WECP that are within Reclamation's relationship to the District or that are otherwise relevant to the planning process. Such topics include, but may not be limited to:

- Water rights;
- Reserve power contracts;
- Transfers of water allotments within present service areas/District boundaries;
- Possible future service areas and changes in District boundaries;
- Environmental compliance; and
- Possible Reclamation assistance and/or oversight of various opportunities for improvements.

1.2 As appropriate and directed by the District, coordinate with the District and other relevant agencies that may be helpful with or have oversight of opportunities for improvements that will be identified in the updated WECP. Examples of such agencies include, but may not be limited to:

- Douglas County PUD;
- Bonneville Power Administration;
- Chelan County PUD;
- Washington State Department of Ecology; and
- City and county planning departments.

Provided by District:

- Request and schedule meeting with Reclamation, District, and RH2 Engineering, Inc. (RH2).
- Determine the need for and coordinate meetings with other agencies.

RH2 Deliverables

- Prepare letter report for each meeting in electronic PDF.

PHASE II – UPDATE APRIL 2015 WATER AND ENERGY CONSERVATION PLAN

Task 2 – Update April 2015 Water and Energy Conservation Plan

2.1. Meet with District staff to verify accuracy of data (tables, figures, maps, etc.) of present WECP.

2.2. Update data with current values if necessary.

2.3. Obtain and/or prepare up to date maps.

2.4. Attend site visits to become more familiar with District facilities.

2.5. Gather information to review and compare crop irrigation requirements, residential use, and other water use. Identify water use trends, if any. Consider possible future use such as frost control, evaporative cooling of fruit, future municipal and industrial use, and possible future service areas.

2.6. Gather information to review and compare energy use for lift pumping, booster pumping, and other energy uses. Include analysis of timing of energy use on an annual, seasonal, daily, and hourly (if possible) basis. Identify trends, if any. Consider possible future changes in energy use and identify opportunities for conservation and load shifting.

2.7. Prepare hydraulic model for Brays Landing and Howard Flats to similar level of detail as current model of the East Unit.

2.8. Review, evaluate, and explain reserve power contract.

2.9. Identify, evaluate, and discuss opportunities for improvements including, but not limited to:

- Energy conservation improvements to pumping plants;
- Mechanical improvements to pumping plants that may include replacements;
- Metering improvements to include possible replacements;
- Pipeline improvements to include possible replacements;
- Storage improvements to both existing storage and possible future storage;
- Supervisory control and data acquisition (SCADA) improvements;
- Water records and water reporting improvements;
- Possible revised water pricing; and
- Possible future service areas and future customer groups that may benefit other entities as well as the District.

2.10. Identify, evaluate, and discuss environmental effects. Expand from scope of 2015 WECP to include any pertinent Clean Water Act and Endangered Species Act provisions for other current environmental concerns.

2.11. Identify possible funding sources for improvements.

2.12. Compile, write, and edit the draft WECP (including hydraulic modeling) for review by the District.

2.13. If required, coordinate a review of the WECP with Reclamation.

2.14. Revise draft to incorporate District comments and directives.

2.15. Coordinate review of revised draft by Reclamation.

2.16. Publish and distribute final WECP.

2.17. Print mapping from GeoIrrigation website as required.

2.18. Obtain system mapping as available from District.

2.19. Obtain pump and reservoir records from District.

2.20. Obtain ground contour elevation data from the U.S. Geological Survey (USGS).

2.21. Prepare pump testing methodology and attend testing.

2.22. Obtain current customer water use records from the District.

2.23. Obtain summaries from District of water pumped for last five (5) years.

2.24. Obtain a summary of system operational procedures from District.

2.25. Create model consisting of pipes, pumps, and reservoirs.

2.26. Develop daily water use curves by season and customer class.

2.27. Review demands with District and revise based on review comments.

2.28. Develop and input demand allocations into model.

2.29. Set up two (2) operational scenarios to represent the existing system.

2.30. Input operational parameters and test functionality.

2.31. Review the model results against up to ten (10) locations in the District.

2.32. Test and troubleshoot model to create an operational model of the existing system.

2.33. Create a model alternative that includes the Capital Improvement Plan (CIP).

2.34. Obtain any current plans as available from the District for future expansion areas.

2.35. Review current Douglas and Chelan County zoning to determine potential land changes and water use.

2.36. Create a scenario using land use changes as currently proposed by the counties.

2.37. Review potential water use changes with the District and input into model.

Note: It is assumed that no additional survey data will be necessary for possible storage facilities.

Provided by District:

- System maps and necessary data to complete tasks listed above.
- Complete review of draft Water and Energy Conservation Plan.

RH2 Deliverables:

- Updated maps.
- Prepare and provide updated Water and Energy Conservation Plan.

PROJECT SCHEDULE

RH2 will proceed with the Water and Energy Conservation Plan upon approval of the contract. It is anticipated that the contract will be approved by May 31, 2017, and the draft Water and Energy Conservation Plan will be available for review by October 1, 2017. The Water and Energy Conservation Plan will be finalized following reviews by the District and Reclamation, Water Conservation Field Services Program (if required).

EXHIBIT B – PRELIMINARY

Greater Wenatchee Irrigation District

Water Conservation Plan Update

Fee Estimate

Description / Classification		Total Hours	Total Labor	Total Subconsultant	Total Expense	Total Cost
Phase I - Agency Coordination						
Task 1	**Advance Coordination of WECP Update with Reclamation and Other Agencies**	**24**	**$ 5,184**	**$ -**	**$ 392**	**$ 5,576**
1.1	Meet and coordinate with Reclamation	12	$ 2,592	$ -	$ 233	$ 2,825
1.2	Coordinate with other entities	12	$ 2,592	$ -	$ 158	$ 2,750
Phase II - Update April 2011 Water and Energy Conservation Plan						
Task 2	**Update April 2011 Water and Energy Conservation Plan**	**499**	**$ 82,710**	**$ -**	**$ 7,197**	**$ 89,907**
2.1	Meet with staff to verify data in existing WECP	6	$ 982	$ -	$ 52	$ 1,034
2.2	Update data with current values if necessary	13	$ 2,180	$ -	$ 110	$ 2,290
2.3	Obtain and/or prepare up to date maps	9	$ 1,427	$ -	$ 116	$ 1,543
2.4	Attend site visits to District facilities	36	$ 6,224	$ -	$ 293	$ 6,517
2.5	Review water use, identify trends, and consider possible future uses	6	$ 1,028	$ -	$ 53	$ 1,081
2.6	Gather information to review energy use and future changes	14	$ 2,488	$ -	$ 117	$ 2,605
2.7	Prepare hydraulic models	12	$ 2,038	$ -	$ 106	$ 2,144
2.8	Review, evaluate, and explain reserve power contract	6	$ 1,028	$ -	$ 53	$ 1,081
2.9	Identify and evaluate opportunities for improvements	58	$ 9,846	$ -	$ 466	$ 10,312
2.10	Identify and evaluate environmental effects	6	$ 1,028	$ -	$ 53	$ 1,081
2.11	Identify possible funding sources for improvements	13	$ 2,180	$ -	$ 110	$ 2,290
2.12	Compile data and write draft WECP	68	$ 10,972	$ -	$ 629	$ 11,601
2.13	Coordinate review of draft WECP by Reclamation	13	$ 2,180	$ -	$ 110	$ 2,290
2.14	Revise draft to incorporate District comments and directives	6	$ 982	$ -	$ 52	$ 1,034
2.15	Coordinate review of draft WECP by Reclamation	12	$ 1,938	$ -	$ 85	$ 2,023
2.16	Publish and distribute final WECP	14	$ 2,250	$ -	$ 427	$ 2,677
2.17	Print mapping from GeoIrrigation website	3	$ 468	$ -	$ 39	$ 507
2.18	Obtain system mapping as available from District	4	$ 659	$ -	$ 16	$ 675
2.19	Obtain pump and reservoir records from District	7	$ 1,355	$ -	$ 61	$ 1,416
2.20	Obtain ground contour elevation data from USGS	1	$ 156	$ -	$ 4	$ 160
2.21	Prepare pump testing methodology and attend testing	36	$ 6,224	$ -	$ 422	$ 6,646
2.22	Obtain current customer water use records from District	2	$ 312	$ -	$ 8	$ 320
2.23	Obtain summaries from District of water pumped for last five (5) years	3	$ 528	$ -	$ 13	$ 541
2.24	Obtain a summary of system operational procedures from District	3	$ 528	$ -	$ 13	$ 541
2.25	Create model consisting of pipes, pumps, and reservoirs	52	$ 8,158	$ -	$ 1,704	$ 9,862
2.26	Develop daily water use curves by season and customer class	9	$ 1,427	$ -	$ 91	$ 1,518
2.27	Review demands with District and revise based on review comments	9	$ 1,473	$ -	$ 92	$ 1,565
2.28	Develop and input demand allocations into model	9	$ 1,427	$ -	$ 256	$ 1,683
2.29	Set up two (2) operational scenarios to represent the existing system	5	$ 803	$ -	$ 130	$ 933
2.30	Input operational parameters and test functionality	4	$ 624	$ -	$ 126	$ 750
2.31	Review the model results against up to ten (10) locations in District	7	$ 1,115	$ -	$ 184	$ 1,299
2.32	Test and troubleshoot model to create an operational model of the existing system	17	$ 2,698	$ -	$ 480	$ 3,178
2.33	Create a model alternative that includes the CIP	10	$ 1,606	$ -	$ 260	$ 1,866
2.34	Obtain any current plans as available from District for future expansion areas	2	$ 358	$ -	$ 9	$ 367
2.35	Review current zoning to determine potential land changes and water use	5	$ 895	$ -	$ 50	$ 945
2.36	Create a scenario using land use changes as currently proposed by the County	9	$ 1,473	$ -	$ 202	$ 1,675
2.37	Review potential water use changes with District and input into model	10	$ 1,652	$ -	$ 206	$ 1,858
	PROJECT TOTAL	**523**	**$ 87,894**	**$ -**	**$ 7,588**	**$ 95,482**

GREATER WENATCHEE IRRIGATION DISTRICT

3300 SOUTH EAST 8TH STREET EAST WENATCHEE WA 98802-9130

509-884-4042

Resolution 02.07.12.01

RE: Funding Opportunity Announcement No. BOR-PN-17-F001

The Board of Directors of the Greater Wenatchee Irrigation District, by resolution, hereby authorizes Mike Miller, Secretary/Manager to pursue Water Conservation Field Services Program Grant BOR-PN-17-F001 By adopting this resolution, the Board of Directors has designated Mike Miller as the appropriate official to pursue this grant.

The Board also confirms there will be matching funds available upon acceptance of this Grant. Upon adoption, GWID agrees to work with Reclamation to meet all established deadlines for entering into a cooperative agreement.

Signed:

President, Michael Brownfield: Michael Brownfield Date: 2/13/17

Vice President, Michael Clayton: Michael S Clayton Date: 2-13-17

Robert Koenig: Robert D Koenig Date: 2-13-17

John Lawrence: John Lawrence Date: 2/13/17

Douglas Bromiley: Douglas Bromiley Date: 2/13/17

Current Manager, Michael Miller: Michael Miller Date: 2/13/17