

April 2017

Warm Springs Tribe Water Marketing Project



U.S. Bureau of Reclamation
WaterSMART Water Marketing Strategy Grants FY 2017
FOA No. BOR-DO-17-F014

Applicant:

Warm Springs Power and Water Enterprises

An enterprise of the Confederated Tribes of the Warm Springs Reservation

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ATTACHMENTS

- Official Resolution of Warm Springs Power and Water Enterprises Board of Directors
- Letters of Funding Commitment from WSPWE and North Unit Irrigation District
- Letters of Support from Deschutes River Conservancy and Deschutes Basin Board of Control
- Existing Work Related to the Water Marketing Strategy:
 - Phase 1 Report by WestWater Research dated November 30, 2016





WARM SPRINGS WATER MARKETING PROJECT TECHNICAL PROPOSAL

Executive Summary

Date: April 19, 2017

Applicant: Warm Springs Power and Water Enterprises

Location: Warm Springs Reservation, Oregon. Jefferson and Deschutes counties.

Project Summary:

In 2015 and 2016, two environmental advocacy organizations filed a lawsuit against the U.S. Bureau of Reclamation (USBR) and three irrigation districts operating in the Deschutes River Basin, alleging that the operations of three water storage reservoirs in the Upper Deschutes were significantly impacting the habitat of the Oregon spotted frog. A temporary settlement agreement was reached in October 2016 and extends until July 2017. This lawsuit is only the latest controversy in a river basin that has seen conflicts over water management for irrigation, municipal, and environmental uses for most of the last 20 years.

This project is being proposed because it represents a market-based effort to provide some significant relief to the current water management pressures in the Deschutes River Basin. The water marketing project has been developed to date with considerable investment by both the Tribes and NUID, and represents perhaps the best opportunity for the Tribes to utilize their off-Reservation water right and to realize benefits associated with this component of their 1997 settlement agreement. In addition, the water marketing project presents a considerable opportunity for the Basin as a whole because of its scale. The project proposes to reduce Upper Deschutes Basin and/or Crooked River deliveries by as much as 72,000 acre-feet per year. Such a large volume of beneficial impact to the Basin is a rarity among other water management projects that have been proposed and implemented in the past.

The proposed project will build upon work completed to date by answering hydrologic, economic, legal, and policy questions associated with the Tribes' water marketing project. The project fits squarely within the stated purposes and objectives of the Water Market Strategy grants program by addressing water use conflicts through market-based mechanisms. The project will result in a water marketing strategy which will include a detailed framework for carrying out Tribal water marketing, specific water delivery contracts, and an implementation plan for moving the strategy forward.

Proposal for Funding Group I

Project Timeline: 24 months

Estimated Completion Date: September 2019

Reclamation Project Located in Project Area: Deschutes Project





Background Information

This proposal is to develop a water marketing project for the Confederated Tribes of the Warm Springs Reservation in central Oregon. The project applicant is Warm Springs Power and Water Enterprises (WSPWE), which is an enterprise of the Tribes that has been tasked by the Tribal Council with creating benefits from the Tribes' settled water rights. The Tribes have been a prominent stakeholder in Deschutes River Basin water issues, and are active participants in basin-wide planning and conservation projects. The proposed project continues this tradition by looking to develop a water marketing project that has multiple benefits to the Tribes, to agricultural water users, and to environmental interests. This section includes background information on the Tribes' water rights and water marketing efforts, which provides context for the proposed project.

Tribal Water Rights

The Confederated Tribes of the Warm Springs Reservation (CTWSR) entered into a water rights settlement agreement with the State of Oregon and U.S. government on November 17, 1997. The settlement provided the Tribes with a water right for 200 cubic feet per second (cfs) from "*the Deschutes and Metolius Rivers, and Pelton Lakes*" for off-Reservation uses. This Tribal water right has not been exercised to date, and is subject to "*state, federal, and tribal law applicable to transfers, distribution, and regulation of water and siting, construction and operation of any off-Reservation facilities for the transportation or delivery of water*". There is currently some uncertainty as to what State and Federal laws will seek to be applied, and to what obstacles will emerge when the Tribes look to market their water rights to off-Reservation uses as provided for in the 1997 agreement.

Tribal Water Marketing Plan

The Tribes, acting through WSPWE, completed a Water Marketing Plan in 2014 to investigate water marketing opportunities and challenges associated with the 200 cfs off-Reservation water right. The Plan identified challenges with marketing the Tribal water right, such as the geographic isolation of the right and the undeveloped market in the immediate vicinity, the fragmented nature of water leasing in Oregon, and the potential need for water infrastructure in order to realize the highest value in a market transaction. Despite these challenges, the Plan also identified a number of opportunities, including: (1) a lease to the North Unit Irrigation District, (2) a lease to agricultural water users in Umatilla and Morrow counties, (3) a lease to new industries such as power production, bottled water, and data centers, and (4) development of bio-fuel production and other local industries. Of all opportunities identified and considered, the water lease to North Unit Irrigation District was considered the most viable and the Plan recommended that the Tribes engage stakeholders in the project.

North Unit Irrigation District

The North Unit was authorized for construction by the U.S. Bureau of Reclamation (USBR) in 1937. The North Unit was planned as part of the USBR Deschutes Project, which consists of various irrigation units in the Deschutes River Basin in central Oregon. Construction of the North Unit started in 1938, and was largely complete by 1943. The North Unit Irrigation District (NUID) lands were first purchased by homesteaders in 1943 with irrigation deliveries starting in the spring of 1946. By 1950, almost all of the original 50,000 acres under the North Unit project were being farmed. An additional 8,900 acres were later incorporated into the NUID after the Crooked River





pumping plant was constructed in 1968. The combined annual diversions for NUID average approximately 196,000 acre-feet per year (afy), varying from 170,000 to 213,000 afy over the last 10 years. Seepage losses in the canal system are substantial, and NUID stated an available water supply of 85,400 to 168,400 afy from existing water sources. These stated values represent a system conveyance efficiency of 50% to 80%. NUID has a goal of supplying at least 147,250 afy to district landowners, which provides an average unit water volume of 2.5 afy per acre for the 58,900 irrigated acres in the district. Assuming an 80% system conveyance and distribution efficiency, this minimum water supply goal would require a total diversion of approximately 184,000 afy.

Deschutes River Basin Water Conflicts

In December 2015 and January 2016, two environmental advocacy organizations filed a lawsuit in Federal district court against the U.S. Bureau of Reclamation (USBR) and three irrigation districts operating in the Deschutes River Basin. The lawsuit alleged that the operations of three water storage reservoirs in the Upper Deschutes were significantly impacting the habitat of the Oregon spotted frog, which had recently been listed as a threatened species by the U.S. Fish and Wildlife Service in 2014. In April 2016, the court ordered that settlement meetings be conducted prior to any litigation. The settlement meetings involved five irrigation districts which source water from the Deschutes River system, the USBR, and the two environmental organizations. A temporary settlement agreement was reached on October 28, 2016 and extends until July 31, 2017. The agreement dismisses the environmental lawsuit in exchange for a modified flow release schedule from the basin reservoirs.

In addition to the most-recent spotted frog controversy, the Deschutes River Basin is also home to other threatened and endangered species that are directly impacted by water management decisions, including bull trout, Middle Columbia River steelhead, and sockeye and chinook salmon. These species are collectively being studied under a Multi-Species Habitat Conservation Plan for the Deschutes River Basin that is currently being developed by the Deschutes Basin Board of Control (comprised of the 8 irrigation districts in Central Oregon), and is intended to help provide a long-term solution to the current conflict among irrigation and environmental water uses in the basin. Most recently, additional concerns have arisen in the Lower Deschutes River and illustrate the widespread water management issues that currently exist in the Deschutes Basin.

North Unit Alternative Supply Concept

Following from the recommendations of the Marketing Plan, the WSPWE started discussions with NUID in March 2016 regarding the feasibility of a cooperative project to provide NUID with an alternative source of water supply from Lake Billy Chinook through the Tribe's off-Reservation water rights. The project concept was to maintain water supplies for NUID while at the same time enhancing water availability in the Upper Deschutes Basin to address environmental water needs for streamflow and habitat for threatened and endangered species. The Tribes and NUID reached a cost-sharing agreement in June 2016 to proceed with an initial investigation of the conceptual project. The study report was completed in November 2016 and is attached to this application. The Phase 1 study provided preliminary appraisal-level cost estimates for two different alternatives for utilizing the Tribal water right under a lease agreement with NUID, and also analyzed the market price for a Tribal water lease and the potential need to incorporate other beneficiaries in the





Deschutes Basin. The Phase 1 study identified several important policy considerations as well, but did not identify any fatal flaws with the project concept.

Need for the Proposed Project

This project is being proposed because it represents a market-based effort to provide some relief to the current water management pressures in the Deschutes River Basin. The water marketing project has been developed to date through considerable investment by both the Tribes and NUID, and represents perhaps the best opportunity for the Tribes to utilize their off-Reservation water right and to realize benefits associated with this component of their 1997 settlement agreement. In addition, the water marketing project presents a considerable opportunity for the Basin as a whole, because of its scale. The project proposes to reduce Upper Deschutes Basin and/or Crooked River deliveries by as much as 72,000 acre-feet per year. Such a large volume of positive impact to the Basin is a rarity among other water management projects that have been proposed and implemented in the past.

The proposed project will build upon work completed to date by answering engineering, economic, legal, and policy questions associated with the Tribes' water marketing project. The project fits squarely within the stated purposes and objectives of the Water Market Strategy grants program by addressing water use conflicts through market-based mechanisms.

Past Work with Reclamation

The Tribes have worked alongside Reclamation and other Deschutes Basin stakeholders on several water management planning efforts over the years. This includes current efforts under the Deschutes Basin Study. The North Unit Irrigation District, who is a partner on the proposed project, has a long-standing relationship with Reclamation as part of the Deschutes Project. In 2007, under a Congressional bill and contract modification that was initiated and funded by NUID, the District was authorized to participate in conserved water projects. Previously, NUID could not participate in conserved water projects as a result of conditions of their contract with Reclamation. Since 1995, NUID, in partnership with Reclamation and others, has successfully implemented nearly \$3.9 million in district projects as a result of various Reclamation funding programs. This includes canal lining and piping projects funded under the WaterSMART program.





Figure 1: Overview Map of the Deschutes Basin and Project Location





Project Description

The proposed project targets the required elements of the grant, as described in the following paragraphs. Project activities are described in more detail in the scope of work section of the proposal. The Phase 1 study identified two different alternatives for marketing Tribal water rights: (1) a direct delivery of Tribal water from Lake Billy Chinook to the NUID service area, or (2) an indirect use of Tribal water to satisfy mitigation requirements associated with groundwater pumping along the NUID Main Canal route. In addition, the basin stakeholders are interested in exploring a “no action” type of alternative that assumes agricultural water supply deliveries from the Upper Deschutes Basin would be reduced to meet environmental flow targets. The proposed project intends to evaluate these alternatives in the scoping and planning activities element, which will inform the development of a robust water marketing strategy.

Element 1 – Outreach and Partnership Building

The Tribal water marketing project represents a new concept to address long-standing and well-known water management conflicts in the Deschutes River Basin. The outreach element of the project will be critical to successfully implementing the project. This element of the project will consist of the following activities:

- Host a local workshop dedicated to the Tribal water marketing project.
- Present the project to key basin stakeholders, such as water users and managers.
- Present the project to local, state, and Federal politicians and agency leaders.

Element 2 – Scoping and Planning Activities

The project will involve a significant amount of water market analysis, in the form of hydrologic, economic, and legal studies to help define the most feasible Tribal water marketing project. This element of the project will consist of the following activities:

- Hydrologic analysis of water marketing impacts and opportunities.
- Economic and financial analysis of water marketing alternatives from both buy and sell side perspectives.
- Legal analysis of administrative, legislative, and regulatory requirements to implement Tribal water marketing.

Element 3 – Development of a Water Marketing Strategy

The strategy component of this project is targeted at the specific mechanisms to implement a water delivery contract between the Tribes and NUID. This element of the project will consist of the following activities:

- Identifying the best transactional framework from an economic, legal, and administrative standpoint.
- Drafting Tribal water marketing contracts and/or agreements.
- Developing an implementation plan to get the Tribal water marketing project constructed and operating.





Scope of Work

The elements of the project are briefly described above. This section provides a chronological summary of the project tasks. This work scope includes the development of required project documents, including the work plan, communication plan, and technical report.

Task 1: Development of Project Work Plan

As required, the project will start with the development of a work plan that will guide the completion of the project. The work plan will provide a detailed work schedule of project tasks, including technical analyses, meetings, and progress reporting. The work plan will detail how the required elements of the grant will be met through the project. The work plan will be submitted for USBR review and comment.

Task 2: Scoping and Planning Activities

This task will include various activities aimed at analyzing the hydrologic, economic, and legal aspects of the Tribal water marketing project. A significant amount of work has already been done to date under a Phase 1 study (attached to this application), but important technical and legal questions remain to be answered through the proposed project. The project proposes the following sub-tasks as scoping and planning activities:

Task 2a - Hydrologic Analysis

A hydrologic analysis will be completed to simulate the impacts to river flows and lake levels in the Deschutes Basin as a result of operating the Tribal water marketing project. The analysis will identify changes in flow regime which can be used to understand positive and negative aspects of the project. Hydrologic analysis will likely involve the following activities:

- Compile hydrologic datasets from USGS, OWRD, and other agencies.
- Analyze and modify existing hydrologic models of the Deschutes River Basin to enable simulation of project alternatives.
- Simulate operation of each alternative and calculate impacts on flows and lake levels.
- For groundwater pumping, existing modeling tools will be utilized and/or a simple analytical method will be used to simulate river impacts from groundwater pumping.
- Evaluate how river flow and lake level changes affect issues of concern, such as spotted frog habitat, habitat for various fish species, and hydropower production.
- Evaluate how river flow and lake level changes affect availability of water rights for other Basin water users.

Task 2b - Financial and Economic Analysis

A financial and economic analysis will be completed which evaluates all costs and benefits of the water marketing project in net present value terms. A standard discount rate will be used across all project elements. This analysis will likely involve the following activities:

- Review and modification (as necessary) of capital and annual OM&R costs generated under the Phase 1 study, such as discounting capital costs over the construction timeline
- Estimation of other costs, such as lost or retimed hydropower generation at Pelton-Round Butte
- Estimation of project benefits based on available agricultural crop and sales data for NUID, referenced to benefits received under a “no action” alternative if a Tribal water





- lease was not implemented; and also evaluate benefits that accrue to other stakeholders in the Deschutes Basin based on Task 2a hydrologic results.
- Definition of a water delivery payment from NUID to the Tribe for use of the Tribal water right based on past Deschutes Basin water marketing activity and standard valuation methods.
 - Development of a financial model that provides participant payments and payback periods.
 - Development of an economic benefit-cost ratio for each project alternative.

Task 2c - Legal and Regulatory Review

The project alternatives each have legal and regulatory considerations that will need to be evaluated as part of the study. Some of the regulatory questions associated with the Tribal water marketing project have been identified in the Phase 1 study. Issues that will need to be evaluated include:

- Conditions for exercise of the 200 cfs Tribal water right for use off-Reservation as provided for in the water rights settlement agreement.
- Options and concerns regarding the existing water rights of NUID and how those can be preserved while not being fully exercised.
- Administrative and regulatory process for the generation of groundwater credits from the Tribal water right.
- Federal and State permitting requirements for each of the project alternatives.

Task 3: Development of a Communication and Outreach Plan

The technical and legal studies under Task 2 will provide an important baseline to begin the outreach component of the project. This task will define how the project team will engage stakeholders in the Deschutes River Basin. There are a multitude of water planning studies currently occurring within the basin, and it will be important to define how the proposed project intersects with each planning effort and how to best communicate the project to certain stakeholders and planning consultants. The Communication and Outreach Plan will include the development of presentation and outreach materials, establishing a meeting schedule that will include both individual entity and public forum meetings, and a brief report on how the Tribal water marketing project intersects with each planning effort in the Deschutes River Basin.

Task 4: Outreach and Partnership Building

Following from Task 3, the project team will implement the outreach plan by hosting a workshop dedicated to disseminating information about the project, and by meeting with various stakeholders in the basin, which are anticipated to include:

- Confederated Tribes of the Warm Springs Reservation
- Deschutes Basin Board of Control
- Irrigation districts and ditch companies
- Federal agencies, including USBR and USFWS
- Oregon Water Resources Department
- Environmental groups, including Deschutes River Conservancy and Oregon Water Watch
- Local, state, and national political leaders





The goal of the outreach effort will be to first communicate the concept and benefits of the Tribal water marketing project, and second to gather feedback and criticism of the project so that a more robust water marketing strategy can be developed. The Tribes intend to be able to begin implementing the project if a consensus can be built around regulatory and financing aspects. This outreach effort is absolutely critical to building such a consensus.

Task 5: Development of a Water Marketing Strategy

The scoping and planning activities under Task 2 will provide essential information for developing a water marketing strategy that is technically and legally sound. The outreach activities under Task 4 will ensure that the proposed water marketing project has been vetted by water management stakeholders in the Deschutes River Basin. This task will build from the Task 2 analyses and Task 4 outreach by defining the best Tribal water marketing project alternative for implementation. The objective will be to develop a water marketing strategy that can be effectively communicated to funding sources and efficiently integrated into ongoing basin-wide planning activities. The following activities are proposed under this task:

- Identifying the best transactional framework between the Tribes and NUID, and/or between the Tribes and various water users. The best framework will be selected based on an evaluation of project costs, Tribal water marketing revenues, administrative complexity, and stakeholder participation.
- Drafting contracts and/or agreements that support the selected transactional framework. The type of contract or agreement will depend upon which framework is selected. The template contracts will be sufficient for the Tribes to utilize to implement the program.
- Drafting an implementation plan that identifies the specific steps required to implement the Tribal water marketing project. The implementation plan is anticipated to evaluate and describe activities such as: permitting requirements, Federal funding assistance, local stakeholder funding and approvals, and required State legislation.

Task 6: Drafting Technical Report

The project team will draft a technical report that summarizes all work undertaken for the project and important findings under Tasks 2 and 4. The technical report will include data tables, graphs, and map figures to explain the motivating issues behind the project, and a full analysis of the potential water marketing alternatives evaluated. The technical report will also summarize the outreach activities conducted and responses from basin stakeholders. The presentation materials developed under the communications plan will be included in the technical report. The technical report will also include a stand-alone water marketing strategy which describes the selected transactional framework, and provides a copy of draft contracts and the implementation plan. The technical report will be provided for USBR review at least 60 days prior to the project end date.

Task 7: Project Management

The project will be managed by Warm Springs Power and Water Enterprises. Some of the individual tasks will be managed by project contractors, all of which have been long-time consultants to the Tribes on water management and water marketing issues. This task is included to dedicate staff time to providing progress reports, reviewing budgets and project objectives, and conducting telephone and in-person meetings among the project team members.





Project Timeline

A project work plan will be developed as the first task under the project. The work plan will describe project schedules and milestones in more detail. This proposal is seeking funding assistance under Funding Group I, and therefore all project tasks will be completed within 24 months from the date of award. Figure 2 provides an anticipated schedule for the project, which is expected to require the full 24 months to complete. The project timeline includes milestones (shown in red) which represent the completion of specific elements of the project. Project team meetings have been scheduled at or around these milestones. Semi-annual progress reports will be provided to the USBR grant officer to ensure that the project stays on track and within budget.

Figure 2: Anticipated Project Completion Schedule

Task	Sub-Task	Month																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Work Plan		█	█																						
2. Scoping Activities	Hydrologic Analysis	█	█	█	█	█	█	█	█	█															
	Economic Analysis			█	█	█	█	█	█	█	█	█													
	Legal & Regulatory Review	█	█	█	█	█	█	█	█	█															
3. Outreach Plan											█	█													
4. Outreach	Workshop												█												
	Meetings												█	█	█	█	█	█	█	█					
5. Water Marketing Strategy	Identify framework																			█					
	Draft contracts																				█				
	Implementation plan																				█	█	█	█	
6. Technical Report												█	█	█						█			█	█	█
7. Project Management	Project team meetings		█		█				█			█		█		█			█					█	
	Progress reports						█						█						█						█





Evaluation Criteria

This section provides a detailed description of how and why the proposed project aligns with the goals, objectives, and criteria for the Water Marketing Strategy grant program.

Criterion A – Water Marketing Benefits

- *Explain whether the water market/activity will address a specific water supply shortfall and describe the extent of benefits to different sectors, including agricultural, municipal/industrial, tribal and environmental sectors, including:*

- *Will the water marketing strategy address a specific water supply shortfall?*

Yes, the proposed project addresses a specific water supply shortfall, which can be defined as the shortage in streamflow in the Deschutes River (and tributaries) to sufficiently meet environmental flow targets and protect habitat of threatened and endangered species. More broadly, the shortfall can be described as insufficient natural flow supplies to meet the volume and timing requirements of agricultural, municipal, and environmental water demands in the Deschutes Basin.

- *What is the nature and severity of the shortfall and which sectors are affected? Please describe the shortfall (e.g., nature and extent of impacts) and provide support for your response.*

The nature of the water supply shortfall is described in the above response. The severity of the shortfall has been estimated in past (2013) water supply and demand studies as 230,000 acre-feet per year of average annual unmet demand by the year 2050. The demand includes water for agricultural, municipal, and instream uses. All water use sectors in the Deschutes River Basin are affected by the shortfall, as evidenced by the 2015 lawsuit filed by Oregon Water Watch and the Center for Biological Diversity against USBR and three major irrigation districts in the Basin.

- *How and to what extent will the water market/water marketing activities, once implemented, address the shortfall? Please describe the expected benefits (e.g., how water users will benefit) and provide support for your response.*

The intent of Tribal water marketing project is to help all water use sectors who rely upon the Upper Deschutes Basin water supply, by reducing irrigation deliveries from Wickiup Reservoir (in the Upper Basin) to the North Unit Irrigation District (NUID). The Tribal water right represents an alternative source of supply for NUID, thus directly addressing the shortfall by reducing demand on the available Upper Basin supplies. The Tribal water right provides for up to 200 cfs which is estimated to provide an irrigation-season supply of approximately 72,000 acre-feet per year if fully utilized. This represents about 30% of the total shortfall estimated to occur by 2050.

- *Will the water market/water marketing activities benefit multiple sectors (e.g., agricultural, municipal, tribal and environmental) and/or types of water uses (e.g., hydropower generation, recreation, irrigation)? If so, to what extent and which sectors and water uses will benefit? Provide support for your response.*

The proposed project, and marketing activity, will benefit multiple sectors. The Tribes will directly benefit from annual water marketing revenues for use of their water right. The Phase 1 study included a preliminary estimate of \$1.8M per year of Tribal revenue based on a unit price of \$25





per acre-foot delivered to NUID. It is important to note that the Tribal water marketing project being proposed represents one of the best (and only) current opportunities for the Tribes to realize a benefit from their off-Reservation use right that was provided under the 1997 settlement agreement. The agricultural sector will directly benefit because it is currently being pressed from environmental advocacy groups to reduce water use, and it is likely that all or most of the major irrigation districts in the Deschutes Basin would have to significantly reduce future water deliveries in the absence of this Tribal water marketing project, in order to maintain habitat for threatened and endangered species. More specifically, NUID would be able to maintain current irrigation deliveries to its landowners but would be able to reduce annual average withdrawals from either the Upper Basin or Crooked River by up to 72,000 acre-feet per year, which represents about 37% of current water supply deliveries to NUID. The municipal sector will indirectly benefit because the project proposes to alleviate water supply-demand stress in the Upper and Middle Deschutes reaches (where the cities of Bend and Redmond are located), and thereby facilitate future water supply acquisitions. The environmental sector will directly benefit because the proposed project intends to reduce annual releases (deliveries) from Wickiup Reservoir to the NUID Main Canal, thereby increasing the water supply available in the Upper Deschutes to be managed for environmental purposes.

- *Explain how and to what extent the proposed water market or water marketing activities will improve water supply sustainability in general in the area upon implementation of the strategy (address all that apply):*
 - *Increasing resiliency to drought*

From a basin-wide standpoint, the proposed Tribal water marketing project would help increase resiliency to drought by providing a new source of supply to help meet demands. Currently, the Tribal water right for off-Reservation uses is not a source of supply that is utilized by basin water demands. The source of the Tribal water right, either Lake Billy Chinook or groundwater mitigated by Lake Billy Chinook, is located downstream of major basin water demands. The proposed project would expand the water supply available to meet current and future uses, by utilizing this downstream supply. More specifically, the project would provide a source of water supply to NUID that is less affected by hydrologic variation and drought conditions. Currently, NUID takes surface water from the Crooked River and Wickiup Reservoir, both of which can be severely impacted by prolonged drought conditions. The alternative supply sources envisioned in the Tribal water marketing project would be Lake Billy Chinook and bedrock groundwater aquifers, both of which are much less affected by drought conditions.

- *Providing instream flows for ecological purposes, species, recreation or water quality objectives*

The proposed project targets instream flows for ecological purposes and species protection. The Tribal water marketing project was originally conceived because of environmental issues in the Upper Deschutes and has been recently motivated by environmental lawsuits. The project seeks to reduce Upper Deschutes water demands by 72,000 acre-feet per year, thereby improving the balance of water available for environmental purposes. The exact nature, extent, location, and timing of environmental flow benefits will be determined as part of the proposed project, and in cooperation with existing basin water planning studies.





○ *Sustaining agricultural communities while still reducing diversions*

This criterion is a central tenet of the proposed project. The water supply available to NUID (and other irrigation districts in the Deschutes Basin) is at risk due to increased environmental water demands. To sustain agricultural production within NUID, the District has been an active supporter of studies to investigate the Tribal water marketing project. NUID funded a significant portion of the Phase 1 study, and was an equal partner in further developing the concept alongside the Tribes. The proposed project would seek to maintain the same volume of water deliveries to NUID while reducing diversions from Wickiup Reservoir, which is critical habitat for the Oregon spotted frog.

○ *Reducing the likelihood of conflicts over water*

The Deschutes Basin has been embroiled in water use conflicts for many years. The basin water supply has been fully allocated since the early 1900s and ecological habitat continues to be impacted by agricultural and municipal water diversions. The conflict between extractive and instream water demands has shown itself both in cooperative basin-wide planning studies and (more recently) in lawsuits and litigation. The conflict will persist absent innovative and cooperative solutions. This was the impetus behind USBR funding for the Basin Wide Study of the Upper Deschutes in 2014, and is motivation for the proposed project to utilize the Tribal water right as a benefit to the entire basin.

○ *Demonstrating a water marketing approach that is innovative and which may be applied by others*

The proposed water marketing approach is innovative in that it will explore a project that could provide basin-wide benefits at a magnitude far greater than any past water conservation initiatives. The exact transactional framework will be determined in the course of the project, but the overall concept is important for several reasons: (1) it demonstrates how a Tribal water right can be utilized to benefit both the Tribes and basin-wide interests, and (2) the project concept takes a basin-wide spatial perspective to exchange water supply sources and alleviate imbalances in critical areas. The basic ideas of the project concept are transferrable to other Western U.S. river basins that are experiencing conflicts due to water supply-demand imbalances, and/or basins that have under-utilized Tribal water rights.

- *Explain the extent to which the water market/activity will be ready to proceed upon completion of the strategy, addressing each of the following (note: Funding Group I proposals will be evaluated separately from Funding Group II proposals, to ensure fairness):*
 - *Describe your plans and timeline for implementing the strategy upon its completion.*

The project will include the development of an implementation plan as part of the water marketing strategy. The proposed Tribal water marketing project is complex in that it will have significant costs and potentially significant regulatory and administrative hurdles. Upon completion, the costs and hurdles will be known in detail, and the implementation plan will include specific steps to address the issues. The implementation plan will include action items on permitting requirements, Federal funding assistance, local stakeholder funding and approvals, and required State legislation.



The timeline for implementing the Tribal water marketing project is currently estimated to be five years, which includes legislation, administrative approvals, permitting, and construction.

- *Are there complex issues, including issues of law or policy, that would need to be resolved before the strategy could be implemented?*

Yes, the primary legal issue involves the Tribal water right for off-Reservation uses. The Tribes have never exercised this right and the 1997 settlement agreement did not fully resolve the details around how the Tribes would exercise this right. The proposed project is significant, because it would press State and Federal parties to better define the Tribes' off-Reservation use rights. The resulting administrative rules will have benefit to the Tribes far beyond the proposed project, and even if the project is not fully implemented. In addition, if the Tribal water marketing project were to be designed around mitigation of groundwater pumping, there is significant complexity around state water law and policy for an expanded mitigation credit program in the Deschutes Basin.

- *Explain whether previous planning, outreach and/or water marketing activities have been completed, including work on any of the required Project elements (1), (2), and (3), described above.*

A significant amount of work has been completed by the project applicants. A Phase 1 study was completed in 2016 and is attached to this proposal. The Phase 1 provided important information to both the Tribes and NUID in terms of preliminary costs and identification of fatal flaws. Importantly, both the Tribes and NUID are committed to further studying and advancing the Tribal water marketing project after reviewing the results of the Phase 1 study. The Phase 1 study included work on Element 2 (scoping and planning) by completing initial design and cost estimates for the project alternatives, and work on Element 3 (water marketing strategy) by defining a potential Tribal water marketing rate. The Phase 1 study did not involve outreach under Element 1. In addition, the Tribes completed a Water Marketing Plan in 2014 that defined potential uses of the off-Reservation water rights granted to the Tribes under the 1997 settlement agreement. The proposed project concept was initially identified in this 2014 Tribal Water Marketing Plan and represents one of the best uses of the Tribal water right.

Criterion B—Level of Stakeholder Support and Involvement

- *Identify stakeholders in the planning area who have committed to be involved in the planning process.*
 - *Describe their commitment, e.g., will they contribute funding or in-kind services or otherwise engage in the planning process?*
 - *Please explain whether the project is supported by a diverse set of stakeholders (appropriate given the types of interested stakeholders within the watershed and the scale, type and complexity of the proposed strategy). For example, is the project supported by entities representing environmental, agricultural, municipal, tribal, or recreation uses?*

The most involved stakeholders in the proposed project will be the Tribes, acting through WSPWE, and NUID. Both have previously committed funds for the Phase 1 study and will commit funding to meet the cost-share requirements of the WaterSMART grant. The Tribes and NUID represent the two parties who are anticipated to be signatories to a water delivery contract or





agreement for use of the Tribal water right. Other basin stakeholders have voiced support for the project (see below), but are not financially committed.

- *Describe stakeholders in the planning area who have expressed their support for the planning process, whether or not they have committed to participate. Support can include letters of support from stakeholders or a description of feedback from interested stakeholders; such letters should identify the stakeholder's specific interest.*

The Deschutes Basin has diverse stakeholders, but the two primary groups who have been leading water management efforts are the Deschutes River Conservancy, which represents environmental interests, and the Deschutes Basin Board of Control, which represents the 8 irrigation districts operating in the basin. Both of these stakeholder groups have expressed support for the proposed project, and letters from each are attached to this application.

- *Is there opposition to the proposed strategy? If so, describe the opposition and explain how it will be addressed. Opposition will not necessarily result in fewer points.*

There is currently no opposition to the proposed water marketing strategy, because the strategy has not been actively communicated to Deschutes Basin stakeholders. In the course of preparing this application, the Deschutes River Conservancy (DRC) voiced some concern about competing applications under this grant program. Both WSPWE and NUID believe that the proposed Tribal water marketing strategy is unique and innovative, and does not overlap with past or planned activities of the DRC which have focused on smaller volume projects, such as canal lining and non-diversion agreements.

- *Do any separate planning efforts express support for the proposed water market/transaction? Or, will the proposed water marketing strategy complement other ongoing or recent planning efforts within the area? Other relevant planning efforts could include:*

- *WaterSMART Basin Study*

A Basin Study for the Upper Deschutes River Basin was initiated in 2014, contracted by USBR in May 2015, and is currently in progress, with completion scheduled for May 2018. The Basin Study intends to analyze the basin water supply-demand imbalance and develop a trade-off analysis of collaboratively-developed options. The Basin Study “*will not propose any specific project, program, or plan, [but] it will provide a current and broadly-shared basis for future water management.*” In addition, the proposed Tribal water marketing project is not listed as a specific activity to be evaluated under the Basin Study Plan of Study (Task 3, Options to Meet Future Water Supply Needs). The proposed Tribal water marketing project is therefore complementary to the current Basin Study, as it seeks to analyze and further develop a unique and innovative solution basin water issues. The project team intends to leverage and utilize all of the work that is being completed under the Basin Study to make the proposed project more cost effective and relevant. The Tribes will also be in communication with the Basin Study Work Group to share the project concept and make sure it can be evaluated alongside other project options.

- *Water management plan*

The Deschutes River Basin has been the subject of several water management plans over the past two decades. Past plans include: a 1993 *River Management Plan* for the Lower Deschutes drafted



by the BLM, a 1996 *Comprehensive Management Plan* for the Upper Deschutes Wild and Scenic River and State Scenic Waterway led by USFS, a 2004 *Deschutes Subbasin Plan* developed by the Northwest Power and Conservation Council, a 2006 *Deschutes River Basin Water Management Convening Assessment Process* organized by the Oregon Consensus Program at Portland State University, a 2012 WaterSMART Cooperative Watershed Management Program grant awarded to the Deschutes River Conservancy to conduct a *Water Planning Initiative* for the Upper Deschutes Basin, and a 2014 *Integrated Basin-Scale Opportunity Assessment Initiative* completed by Pacific Northwest National Laboratory (PNNL). As stated above, a USBR Basin Study project for the Upper Deschutes is being completed. The list of plans and studies provided above may not be exhaustive, but it is clear that the Deschutes River Basin has been the subject of numerous past studies focused on water management. The proposed project does not intend to replicate or reproduce past and present water management plans. Instead, the proposed project is focused on developing a large-scale water marketing project that will address the basin water supply shortfalls that have been well-documented for many years.

- *Water conservation plan*

The Deschutes River Conservancy (DRC) has been a leader in implementing water conservation projects in the Deschutes River Basin. The efforts of the DRC are not guided by any single water conservation plan, but have been guided by multiple initiatives and partnerships. Water conservation projects over the past 20 years have improved instream flows by approximately 200 cfs from projects that include canal piping and lining projects, water right leases, and water rights transfers. The 2015 DRC Strategic Plan acts as a water conservation plan for the Deschutes Basin, and includes a specific statement on the potential opportunity provided by the Tribes' off-Reservation water rights. The proposed project is a detailed investigation of such an opportunity. More specifically, NUID has a Water Management and Conservation Plan for the district.

- *Drought contingency plan*

A drought contingency plan was developed for NUID as part of their Water Management and Conservation Plan. As described in this proposal, NUID is a cost-share partner on the proposed project and is the largest agricultural water user in the Deschutes Basin. The drought plan provides a description of the water supply risks faced by NUID, particularly due to the junior-priority status of their direct flow water rights.

- *State water plans*

The Oregon Integrated Water Resources Strategy was adopted in 2012. The Strategy contains numerous recommended action items, which include: (9a) undertake place-based integrated water resource planning, (9c) partner with federal agencies, tribes, and neighboring states in long-term water resources management, (10a) improve access to built storage, and (10d) reach environmental outcomes with non-regulatory alternatives. The proposed project captures each of these listed Strategy recommendations.

- *Other planning efforts*

There are other water resource planning efforts that are going on in the Deschutes River Basin that relate to the proposed project. The most significant of the other planning efforts is the Multi-Species Habitat Conservation Plan (HCP) which is being funded by the Deschutes Basin Board of





Control, City of Prineville, and the USFWS. The goal of the HCP is to “*maintain and improve habitat for the federally-listed species in the Upper Deschutes Basin, while meeting current and future irrigation and municipal water needs in a balanced, economically viable, and sustainable manner*”. Information and planning items developed through the HCP will be incorporated into the proposed project, and the benefits of the proposed project will be evaluated against HCP metrics. The Farmers Conservation Alliance is currently developing System Improvement Plans for all of the major irrigation districts in the Deschutes River Basin, including NUID. The other significant and relevant planning effort is the 2014 Tribal Water Marketing Plan, which investigated opportunities for the Tribes to utilize their off-Reservation water right. The Plan specifically identified the proposed project as one of the best and most-feasible ways for the Tribes to realize a benefit from their water right.

- *Describe what efforts that you will undertake to ensure participation by a diverse array of stakeholders in developing the water marketing strategy. If specific stakeholders have not yet been identified, or if some sectors are not yet represented, explain how you will accomplish this in the first few months after an award. Support could include a description of key stakeholder interests in the planning area and what efforts that you will undertake to engage them in the planning process, including outreach to stakeholders or collaborating with other groups or partners.*

The Tribes and NUID (project applicants and funders) have been key stakeholders in basin-wide water planning and management efforts for many years. The Tribes and NUID have developed close working relationships with basin water users and organizations (such as the DRC and DBBC). For the proposed project, the Tribes will actively engage basin stakeholders once scoping and planning studies have been completed. Engagement will be more-specifically defined in a communications and outreach plan, but is expected to include a workshop dedicated to the Tribal water marketing project and individual meetings with key basin water users and stakeholders. Meetings will also be scheduled with political representatives and government agency leaders. Diversity in stakeholder engagement will be achieved by casting a wide net inviting local interests to the workshop, and in setting up meetings with all water use sectors and interests. Unlike many rural areas, the Deschutes Basin represents a mature audience in terms of water management where stakeholder interests and viewpoints are well known and documented. The goal of the proposed project will not be to reiterate such interests, but rather to make sure these interests are evaluated as part of the scoping element and included (invited) as part of the outreach element.

Criterion C—Ability to Meet Program Requirements

- *Describe how the three elements of a water marketing strategy will be addressed within the required timeframe. Please include an estimated project schedule that shows the stages and duration of the proposed work including major tasks, milestones, and dates.*

The project is anticipated to require 24 months to complete, which is within the two year time frame for projects under Funding Group I. A project timeline is provided in a previous section of this proposal, detailing the duration of proposed tasks and dates of deliverables. The three required elements of the water marketing strategy are tied to the project tasks as described previously, and therefore completion of the scope of work will ensure that the three elements have been fulfilled as described in this proposal.



- *If prior planning work will be relied on to meet any of the required elements of a water marketing strategy, please explain this and briefly describe that work that will be relied on.*

A significant amount of prior work has both motivated this project proposal and will be relied upon to provide a knowledge base for the proposed project. The Phase 1 study and other previous studies that will be utilized are listed under Criterion A above. While the project will draw upon previous work, the proposed project will address all three required elements.

- *Describe the availability and quality of existing data and models applicable to the proposed water marketing strategy.*

The project will benefit substantially from existing data and models in the Deschutes River Basin. An expansive list of the available data and models is provided in the Plan of Study for the Upper Deschutes Basin Study. The hydrologic analysis under Task 2a will utilize the existing MODSIM model for the Upper Deschutes and/or the RiverWare model developed by PNNL for flow accounting, and the MODFLOW and GSFlow models developed by the USGS for modeling groundwater flows and surface water interactions. All of these models are undergoing improvements as part of the Basin Study project, and the project team will utilize the most recent versions for the proposed project. The economic analysis under Task 2c will utilize the *Waterlitix* database of water transfers in Deschutes River Basin to help price the Tribal water delivery contract. In terms of quality, the proposed project will benefit from the fact that the Deschutes Basin has been heavily modeled and studied over the past two decades, and an expansive set of technical tools are currently available for analyzing the proposed Tribal water marketing project.

- *Identify staff with appropriate technical expertise and describe their qualifications. Describe any plans to request additional technical assistance from Reclamation, or by contract.*

The project will involve staff of WSPWE and NUID, as well as staff of three contractors who have been working on the proposed project concept for the past two years. The following paragraphs provide a brief statement of qualification for the project contractors.

WestWater Research, LLC. Founded in 2001, WestWater Research is the leading economic consulting firm providing valuation, market analysis, planning, and transaction advisory services to the water resources sector. Our reputation has been earned through completing over \$700 million in transaction advisory and valuation services. The WestWater team has over fifty years of experience in the water sector, and has significant past experience working in the Deschutes River Basin on water transaction projects. WestWater worked with the Tribes to develop a Water Marketing Plan in 2014 and completed the Phase 1 study of the proposed project in 2016.

Natural Resources Consulting Engineers, Inc.. NRCE is a civil, environmental, and water resources consulting firm that has been providing a wide variety of professional services for nearly 30 years. NRCE staff include experts in the fields of irrigation and agricultural engineering, surface and groundwater hydrology, hydraulic engineering, and civil engineering design. NRCE staff have been water rights and water resources consultants to the Tribes since 1995 and helped shape the



1997 settlement agreement. NRCE has a wealth of modeling and other professional technical experience in the Deschutes Basin.

Karnopp Petersen, LLP. Karnopp Petersen is an Oregon law firm that takes a multi-disciplinary approach to legal and business issues, rethinking the conventional to employ customized, creative solutions that get results. The firm has a deep understanding of the local culture and the laws that affect our region locally and nationally. Karnopp has been providing legal representation to the Tribes since 1955 on a range of matters, including water rights. The firm has also represented key stakeholders in the Deschutes Basin, including the Deschutes River Conservancy.

Criterion D—Nexus to Reclamation

- *Is there a Reclamation project, facility, or activity within the planning area?*

Yes, the proposed project involves the USBR Deschutes Project which was authorized in 1937 and constructed by 1943. Wickiup Reservoir is a primary component of the Deschutes Project and provides water supply to the North Unit Irrigation District.

- *Is the planning area in the same basin as a Reclamation project, facility, or activity?*

Yes, the planning area is in the Deschutes River Basin, which includes the Deschutes River Project and Crooked River Project developed and/or operated by Reclamation.

- *In what way will the proposed Project benefit a basin where a Reclamation project, facility, or activity is located?*

The proposed project will provide direct benefits to the Deschutes River Basin by evaluating and pursuing a Tribal water marketing project that will help to alleviate the water supply shortfall in the Upper Deschutes Basin and address ongoing conflicts between agricultural and environmental interests. The proposed project will seek to reduce agricultural demands from Wickiup Reservoir by up to 72,000 acre-feet per year.

- *Will the Project help Reclamation meet trust responsibilities to any tribe(s)?*

Yes, the project applicant is Warm Springs Power and Water Enterprises, which is an organization of the Confederated Tribes of the Warm Springs Reservation. The proposed project stems from a Tribal effort to realize greater benefits from their hard-fought water right settlement in 1997. Starting with a Water Marketing Plan in 2014, and a Phase 1 study in 2016, the Tribes have shown great initiative in pursuing promising water marketing opportunities. Funding of the proposed project would help USBR meet its trust responsibilities to the Tribes by providing cost-share funding so that the Tribes can continue to pursue such opportunities and try to realize benefits from their water rights.

- *Does the proposed Project support implementation of an Interior initiative? Or, does the Project support a complementary initiative of another Interior agency?*

Yes, the proposed project will support several Federal initiatives, including: (1) USBR Upper Deschutes Basin Study, (2) NOAA Columbia Basin salmon recovery program and related Columbia Basin Water Transactions Program, (3) USFWS Multi-Species Habitat Conservation Plan for the Upper Deschutes Basin, and (4) potentially other programs.





WARM SPRINGS WATER MARKETING PROJECT PROJECT BUDGET

Funding Plan

The project is proposed to be funded by both a Water Marketing Strategy Grant award and monetary contributions from two non-Federal cost share partners: (1) Warm Springs Power and Water Enterprises (WSPWE) and (2) North Unit Irrigation District (NUID). These cost share partners are committed to funding 50% of the project budget. Letters of commitment from both WSPWE and NUID are attached to this proposal. Table 1 summarizes the proposed budget and funding sources.

Table 1: Summary of Non-Federal and Federal Funding Sources

Funding Sources	Amount
Non-Federal Entities	
1. Warm Springs Power and Water Enterprises	\$86,031
2. North Unit Irrigation District	\$86,031
Non-Federal Sub-Total	\$172,062
Other Federal Entities	
None	\$0
Other Federal Sub-Total	\$0
Requested Reclamation Funding	\$172,062

The following paragraphs respond to the Funding Plan questions outlined in the FOA.

- *How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).*

The cost share requirement will be provided as monetary contributions by WSPWE and NUID. Both organizations maintain several reserve accounts which they will utilize as a source of funds to support the contributions.

- *Describe any in-kind costs incurred before the anticipated Project start date that you seek to include as costs.*

The project does not propose to include and account for any in-kind costs as part of the project budget; however both WSPWE and NUID will be actively involved in the project and their staff will be providing in-kind services for assistance with project work plan development, project management, participation in all outreach components of the project, and a review of the project deliverables.





- *Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.*

The project will include funding from both WSPWE and NUID. Letters of commitment are attached to this proposal.

- *Describe any funding requested or received from other Federal partners.*

The project will not utilize any funding received from other Federal partners.

- *Describe any pending funding requests that have not yet been approved, and explain how the Project will be affected if such funding is denied.*

There are no pending funding requests associated with NUID or WSPWE that would affect the proposed project. The Tribes may seek other grant funds, such as the Oregon Water Resources Department (OWRD) SB1069 funds to help cover non-Federal costs under the proposed project.

Budget Proposal

Table 2 provides a table summary of the proposed project budget. As shown, the project budget is entirely comprised of contracts with WestWater Research (economic), Natural Resources Consulting Engineers (hydrologic), and Karnopp Peterson (legal). The budget narrative provided below explains the budget proposal in more detail.

Table 2: Budget Proposal

Budget Item	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
Salaries and Wages				
None	-	0	hrs	\$0
Fringe Benefits				
None	-	0	hrs	\$0
Travel				
None	-	0	trips	\$0
Equipment				
None	-	-	-	\$0
Supplies & Materials				
None	-	-	-	\$0
Contractual				
WestWater Research	\$153,595	1	Lump Sum	\$153,595
NRCE	\$123,154	1	Lump Sum	\$123,154
Karnopp Peterson	\$67,375	1	Lump Sum	\$67,375
Total Direct Costs				\$344,124
Indirect Costs				
None	-	-	-	\$0
Total Estimated Project Costs				\$344,124

Note: A detailed budget for each contractor is provided in a separate table.





Budget Narrative

The proposed project represents a collaboration between WSPWE and NUID. Both entities have been actively involved in Deschutes Basin water management issues and have been working on the proposed project since March 2016. While these two cost-share applicants will continue to be actively involved in developing the water marketing strategy, the project budget is dedicated to retaining three contractors to provide critical information on the economic, hydrologic, and legal aspects of the proposed strategy. In addition, the contractors will help to manage the project and produce high-quality deliverables. The following paragraphs provide more detail on the proposed budget.

Salaries and Wages

The Project Manager for the proposed project is Jim Manion, who is Director of WSPWE. Staff of both WSPWE and NUID intend to be actively involved in the project but are not seeking any Federal funds to support their salaries and related expenses.

Fringe Benefits

Staff of WSPWE and NUID intend to be actively involved in the project but are not seeking any Federal funds to support their salaries or related expenses such as fringe benefits.

Travel

The proposed project will include a number of trips for WestWater Research and NRCE as contractors. These costs are itemized in a separate budget table below. The other meetings required as part of the proposed project, such as outreach to stakeholders in the Deschutes Basin, represent local trips and the applicant is not seeking any compensation under this proposal.

Equipment

No equipment will be purchased to complete the proposed project.

Materials and Supplies

No materials and supplies will be purchased to complete the proposed project.

Contractual

The project budget is intended to fund WestWater Research (WestWater), Natural Resources Consulting Engineers, Inc. (NRCE), and Karnopp Peterson (Karnopp) as contractors to WSPWE. All three contractors have been working together and with WSPWE since 2014 on innovative and forward-thinking water marketing efforts to maximize the benefits of the Tribes' off-Reservation water right. The proposed project represents a continuation of these efforts. In respective order, Tables 3, 4, and 5 provide detailed budgets for WestWater, NRCE, and Karnopp.



WaterSMART Water Marketing Strategy Grant

Table 3: WestWater Research Project Budget

Task	Sub-Task	Clay Landry		Harry Seely		Brett Bovee		Research Analyst		Admin Staff		TOTAL
		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	
1. Develop Work Plan	Draft Work Plan	1	\$275	1	\$220	8	\$1,600	0	\$0	4	\$260	\$2,355
	Respond to Comments	0	\$0	0	\$0	4	\$800	0	\$0	0	\$0	\$800
2. Scoping & Planning	Review of capital and O&M costs	0	\$0	2	\$440	4	\$800	0	\$0	1	\$65	\$1,305
	Cost of hydropower loss	0	\$0	0	\$0	8	\$1,600	24	\$2,280	0	\$0	\$3,880
	Benefits of continued Ag	0	\$0	8	\$1,760	8	\$1,600	24	\$2,280	0	\$0	\$5,640
	Define lease payments	0	\$0	8	\$1,760	8	\$1,600	24	\$2,280	0	\$0	\$5,640
	Develop financial model	8	\$2,200	16	\$3,520	8	\$1,600	40	\$5,000	0	\$0	\$12,320
	Develop B/C for each alternative	8	\$2,200	24	\$5,280	8	\$1,600	40	\$5,000	0	\$0	\$14,080
3. Develop Communication Plan	Draft Plan	8	\$2,200	8	\$1,760	16	\$3,200	0	\$0	4	\$260	\$7,420
	Respond to Comments	0	\$0	0	\$0	16	\$3,200	0	\$0	0	\$0	\$3,200
4. Outreach	Workshop	4	\$1,100	16	\$3,520	16	\$3,200	0	\$0	1	\$65	\$7,885
	Private meetings	0	\$0	40	\$8,800	40	\$8,000	0	\$0	0	\$0	\$16,800
	Review of comments	8	\$2,200	8	\$1,760	16	\$3,200	0	\$0	0	\$0	\$7,160
	Identify best framework	16	\$4,400	16	\$3,520	24	\$4,800	0	\$0	0	\$0	\$12,720
5. Water Market Strategy	Draft contracts / agreements	8	\$2,200	0	\$0	8	\$1,600	16	\$2,160	2	\$130	\$6,090
	Draft implementation plan	24	\$6,600	16	\$3,520	16	\$3,200	24	\$3,240	0	\$0	\$16,560
6. Draft Report	Draft Report	4	\$1,100	8	\$1,760	24	\$4,800	28	\$2,660	4	\$260	\$10,580
	Respond to Comments	0	\$0	0	\$0	8	\$1,600	0	\$0	0	\$0	\$1,600
7. Management	Team Meetings	0	\$0	0	\$0	24	\$4,800	0	\$0	24	\$1,560	\$6,360
	Progress Reports	0	\$0	0	\$0	8	\$1,600	0	\$0	0	\$0	\$1,600
Labor Total												\$143,995
Travel Expenses												\$9,600
Project Total												\$153,595





Table 4: Natural Resources Consulting Engineers Project Budget

Task	Subtask	Description	Cost
2a	1	Compile datasets from USGS, et al.	\$5,865
	2	Study existing models & results, recommendations	\$15,939
	3	Collect new data for models (as necessary)	\$10,856
	4	Study NUID water delivery scheduling	\$5,589
	5	Apply surface water models	\$26,565
	6	Apply ground water models	\$45,000
	7	Obtain DEM of LBC: elev vs. volume & surface area	\$1,702
	8	Determine expected physical impacts	\$11,638
Total:			\$123,154

Table 5: Karnopp Peterson Project Budget

Task	Activities	Hours	Fees
2. Scoping & Planning	Assess legal feasibility of Tribal water marketing and groundwater mitigation credits	125	\$30,625
3. Develop Communication Plan	Review communications plan	5	\$1,250
4. Outreach	Work with Warm Springs water rights settlement intergovernmental board and assist with basin stakeholder meetings	54	\$13,125
5. Strategic Plan	Identify key terms and conditions for Tribal water delivery contract	75	\$18,375
6. Technical Report	Prepare legal sections of Technical Report	16	\$4,000
TOTAL		275	\$67,375

The three contractors included in this application have long-standing relationships with the Tribes, and bring a unique and unparalleled level of knowledge and experience regarding the Tribe’s water rights, Deschutes Basin water management issues, and water markets. Karnopp has provided legal counsel to the Tribe since 1955, including the years leading up to the 1997 water settlement agreement and in the years of Deschutes Basin water conflicts since then. NRCE has been consulting with the Tribe on water resources and water rights issues since the mid-1990s and was the lead technical expert on the 1997 water settlement agreement. NRCE has conducted many studies on the hydrology of the Deschutes Basin and has helped to develop several hydrologic models in the Basin. WestWater has been assisting the Tribe with water marketing initiatives since 2014 and brings an important perspective on implementing water leasing agreements. WestWater was the author of the Phase 1 study which preceded the proposed project.

Other Expenses

No other expenses are requested for the project.

Indirect Costs

Staff of WSPWE and NUID intend to be actively involved in the project but are not seeking any Federal funds to support their salaries or indirect costs.

Total Costs

The total project costs are budgeted to be \$344,124. The funding partners WSPWE and NUID propose to fund 50% of the project budget. The project requests a total of \$172,062 from Reclamation under the WaterSMART Water Marketing Strategy grant program.





WARM SPRINGS WATER MARKETING PROJECT ENVIRONMENTAL & CULTURAL RESOURCE COMPLIANCE

The proposed project will not involve any measurement, monitoring, or field work. Existing measurement data collected under existing Tribal, State, and Federal programs will be utilized to complete the project.

- *Will the proposed Project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?*

No, the project will not impact the environment. The project is an analytical desktop study.

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the area? If so, would they be affected by any activities associated with the proposed Project?*

Yes, there are Federal threatened and endangered (T&E) species in the area of the Michaud Unit and Fort Hall Reservation. Species listed for Deschutes and Jefferson counties in Oregon include: Oregon spotted frog, Yellow-billed Cuckoo, Northern spotted owl, Whitebark pine, Bull trout, Gray wolf, and North American wolverine. In addition, the Middle Columbia River steelhead, sockeye salmon, and Chinook salmon are federally-listed species in the Deschutes Basin. The proposed project will not have any adverse impact on local T&E species or critical habitat. The project has the potential to benefit both the Oregon spotted frog and salmon recovery efforts by reduced irrigation demands from the Upper Deschutes Basin and thereby enhancing the water supply available for environmental purposes.

- *Are there wetlands or other surface waters inside the Project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.*

The project will not have any impact on Waters of the United States.

- *When was the water delivery system constructed?*

The Deschutes Project was authorized for construction in 1937 and was completed in 1943. Irrigation deliveries to the North Unit Irrigation District started in 1947.

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

The proposed project will include some infrastructure components that will tie into the existing NUID irrigation delivery system. The proposed project is not anticipated to result in any immediate modification of or impacts to the existing NUID irrigation system.





- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

The proposed project will not involve any measurement, monitoring, or field work. A review of potential features listed on the National Register of Historic Places was not completed.

- *Are there any known archeological sites in the proposed area?*

The proposed project will not involve any measurement, monitoring, or field work. An inventory of known archeological sites was not completed for this proposal.

- *Will the proposed Project have a disproportionately high and adverse effect on low income or minority populations?*

No, the proposed project should not have an adverse effect on low-income or minority populations. The project is intended to have a beneficial effect on the Confederated Tribes of the Warm Springs Reservation which have historically had a large population of low-income members. The project is also intended to have a beneficial effect on farmers throughout the Deschutes Basin by providing long-term certainty to ongoing water supply conflicts.

- *Will the proposed Project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

No, the project will not affect the Tribes' access to sacred and ceremonial sites.

- *Will the proposed Project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No, the project will not contribute to noxious weeds or invasive species.



WHEREAS, Warm Springs Power and Water Enterprises (“WSPWE”) is a chartered business enterprise of the Confederated Tribes of the Warm Springs Reservation of Oregon (“Tribe”), operating under a Sixth Amended Plan of Operation approved by Tribal Council Resolution 10,607; and,

WHEREAS, The Tribe, the United States, and the State of Oregon entered into The Confederated Tribes of the Warm Springs Reservation Water Rights Settlement Agreement, dated November 17, 1997, and the First Amendment to the Confederated Tribes of the Warm Springs Reservation Water Rights Settlement Agreement, dated November 19, 2001 (collectively, “Water Rights Settlement Agreement” or “Agreement”), whose primary purpose is to determine fully and forever the scope and attributes of the Tribe’s federally reserved Indian water right for lands within the Warm Springs Indian Reservation held in trust by the United States (“Tribal Reserved Water Right”); and,

WHEREAS, The Water Rights Settlement Agreement provides that the Tribal Reserved Water Right consists of certain categories of water in amounts described in the Agreement to satisfy Treaty purposes, including in part, subject to instream flow limitations and other restrictions, water in amounts up to 200 cubic feet per second (“cfs”) from the Deschutes and Metolius Rivers and the Pelton Lakes combined (of which not more than 25 cfs may be diverted from the Metolius River before it enters Lake Billy Chinook) that may be used off of the Warm Springs Reservation; and,

WHEREAS, Under the Sixth Amended Plan of Operation, a purpose and objective of WSPWE is to develop and implement a Tribal water marketing plan that exercises the water right described and quantified by the Water Rights Settlement Agreement; and,

WHEREAS, The Sixth Amended Plan of Operation further clarifies that managing the implementation of such a water marketing plan is delegated to WSPWE in terms of the pecuniary interests in such water but that there are other interests in managing the Tribe’s water rights including the Tribe’s ownership interests as a whole and the natural resource and regulatory interests of the Tribe; and,

WHEREAS, WSPWE does not have any authority to alienate or encumber the Tribe’s water rights without approval from the Tribe by vote of the people; and,

WHEREAS, On February 28, 2017, Tribal Council held a Deschutes Basin Water Summit during which WSPWE and its consultant, WestWater Research LLC, presented an update on the Alternative Water Source Project that WSPWE is exploring with North Unit Irrigation District (“Project”); and,

WHEREAS, Tribal Council expressed its support, via motion, for WSPWE to continue investigating the feasibility of the Project; and,

WHEREAS, In furtherance of the feasibility study for the Project, WSPWE and North Unit Irrigation District have explored (and continue to explore) grant funding opportunities from various sources, including Water Marketing Grants from the U.S. Bureau of Reclamation WaterSMART program; and,

WHEREAS, The Board of Directors of WSPWE has been apprised of the Project and believes that it is in the best interests of WSPWE, in coordination with other relevant tribal enterprises and departments and necessary consultants and advisors, to further pursue grant funding opportunities to underwrite at least part of the costs of the feasibility study for the Project; now, therefore,

BE IT RESOLVED, That the Board of Directors of WSPWE pursuant to the Sixth Amended Plan of Operation of WSPWE hereby authorizes the General Manager, in consultation with legal counsel, to apply for grant funding that the General Manager determines in his discretion is needed or desirable to complete the feasibility study for the Project.

CERTIFICATION

The undersigned, as Secretary/Treasurer of the Board of WSPWE, hereby certifies that the Board of Directors of WSPWE is composed of 5 members of whom 4 constituting a quorum, were present at the meeting thereof, duly called, noticed, convened and held this 31st day of March, 2017; and that the foregoing resolutions were passed by the affirmative vote of 4 members and that said resolutions have not been rescinded or amended in any way.



Jim Manion, Secretary/Treasurer
WSPWE Board of Directors



WARM SPRINGS POWER & WATER ENTERPRISES
P.O. BOX 960 · WARM SPRINGS, OR 97761
OFFICE: (541) 553-1046

April 17, 2017

To U.S. Bureau of Reclamation

Dear Reclamation,

Warm Springs Power and Water Enterprises (WSPWE) is a wholly-owned enterprise of the Confederated Tribes of the Warm Springs Reservation, a federally recognized Indian tribe (Tribe). The Tribe occupies the Warm Springs Indian Reservation and is the successor to the Indian signatories of the Treaty With the Tribes and Bands of Middle Oregon of June 25, 1855, 12 Stat. 963 ("Treaty of 1855").

The Deschutes River and its adjacent lands are located entirely within the Tribe's aboriginal lands, which were used by the Tribe from time immemorial. The Tribe's aboriginal lands include those lands it ceded to the United States in the Treaty of 1855, reserving for itself the Warm Springs Reservation and sovereign rights in the ceded area. The Deschutes River forms the eastern boundary of the Reservation.

The Tribe is a party to the Confederated Tribes of Warm Springs Reservation Water Rights Settlement Agreement ("WRSA"), which determines the scope and attributes of the Tribe's federally reserved Indian water right. The WRSA includes a federal reserved water right for instream flows in the Deschutes and Metolius Rivers for the benefit of the aquatic ecosystem of the Reservation. Subject to certain limitations, the WRSA also includes a federal reserved water right for out-of-stream water uses, including the use off of the Reservation of up to two hundred cubic feet per second (200 cfs) of water from the Deschutes and Metolius Rivers, and the Pelton Lakes, combined.

The Tribe has delegated to WSPWE the responsibility of developing opportunities for the Tribe to put that portion of its federally reserved right to use water out of stream off the Reservation. The Tribe's Tribal Council retains ultimate authority to approve any such use for the Tribe.

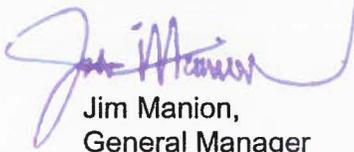
Since early 2016, WSPWE and North Unit Irrigation District (NUID) have been exploring the feasibility of the Tribe entering into a long-term contract with NUID for the delivery of water. Under such a transaction, the Tribe would retain ownership of the water right but it would agree to deliver water to NUID on mutually agreed-upon terms and conditions for an agreed-upon period of time. NUID's motivation to enter into a contract with the Tribe for water derives from its likely need to adjust its management of its existing water rights to address the biological needs of the Oregon spotted frog. The Tribe's objectives in potentially entering into a contract to deliver water to NUID is to assist in improving the surface water flows throughout the Deschutes Basin for ecological purposes and to put its federally reserved water right to economically productive use.

WSPWE and NUID have completed an initial fatal flaw analysis, which did not reveal any insurmountable challenges. The Tribe's Tribal Council has been presented with that analysis and has authorized WSPWE to continue investigating a potential water supply contract. NUID's leadership has provided similar authorization and direction to NUID staff. For those reasons, WSPWE and NUID are applying for funding from this WaterSMART Water Marketing Strategy grant program.

WSPWE intends to commit \$86,031 to the proposed project as a 25% cost share of the overall project budget cost. The remaining cost share will come from NUID. These funds will be available immediately for expenditure, and there are no time constraints on the availability of funds. WSPWE will utilize its general budget to fund the cost-share component, and the cost-share contribution will not be sourced from any Federal funds.

WSPWE appreciates the opportunity to submit this grant application and we look forward to continuing to build our working relationship with Reclamation through this project. Please don't hesitate to contact me with any questions or concerns regarding the funding commitment or any other aspect of our application.

Sincerely,



Jim Manion,
General Manager
Warm Springs Power and Water Enterprises



2024 N.W. Beech Street
Madras, Oregon 97741

(541) 475-3625
(541) 475-3652
Fax (541) 475-3905
nuid@northunitid.com

April 17, 2017

Dear Reclamation,

The North Unit was authorized for construction by Reclamation in 1937. The North Unit was planned as part of the Deschutes Project. Construction of the North Unit started in 1938, and was largely complete by 1948. The North Unit lands were first purchased by homesteaders in 1943 and irrigation deliveries started the spring of 1946. The North Unit Irrigation District (NUID) has faced many challenges over the years since the project was constructed. Probably our most pressing challenge is related to seemingly intractable conflict between environmental needs and irrigation water deliveries out of the Upper Deschutes River Basin. This came to a head last year when lawsuits were filed seeking to shut down or substantially alter Reclamation operations of Wickiup Reservoir, which is our main source of water supply. The lawsuit has been temporarily settled, but the underlying conflicts remain. The Basin needs new and innovative ideas and large-scale projects to respond to such conflicts. With this in mind, NUID has started to explore an important project with the Confederated Tribes of Warm Springs. The project would provide NUID with an alternate source of supply utilizing the Tribal water rights through a long-term lease agreement. We helped to fund a Phase 1 study last year which provided sufficient information to motivate us to continue to look at this project. We are now hoping to continue the efforts, with funding assistance from Reclamation through the WaterSMART Water Marketing Strategy grant. We believe this project targets the specific objectives of the grant program by exploring new and innovative approaches to solving basin-wide water conflicts.

NUID will commit \$86,031 to the proposed project as a 25% cost share of the overall project budget cost. The remaining cost share will come from the Tribes as the project applicant. These funds will be available immediately for expenditure, and there are no time constraints on the availability of funds. NUID will utilize its general budget to fund the cost-share component, and the cost-share contribution will not be sourced from any other Federal funds.

Along with the NUID board of directors, I appreciate the opportunity to be a partner in this grant application and we look forward to continuing our close working relationship with the local and regional Reclamation offices. Please don't hesitate to contact me with any questions or concerns regarding this funding commitment, or any other aspect of the WaterSMART grant application.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Britton".

Mike Britton
General Manager



April 13, 2017

To: U.S. Bureau of Reclamation

Re: Support for WaterSMART Water Marketing Strategy Project of Confederated Tribes of Warm Springs

Dear Reclamation,

In the Deschutes Basin, porous volcanic geology, unmet existing water needs and increased municipal water demand contributes to a range of water management challenges. Over the past 20 years, the Basin has met these challenges with collaborative and innovative solutions that balance both instream and out-of-stream needs. These projects have made great headway, but significant work remains to balance existing and future demands on the available water supply. The Tribe's proposed water marketing strategy will explore solutions to water management challenges by building on past and current collaborative work in the Basin, and will complement a comprehensive strategy developed through the Upper Deschutes River Basin Study (Basin Study) to meet needs through conservation, water marketing and optimized storage.

The Deschutes River Conservancy (DRC) restores streamflow and improves water quality in the Deschutes Basin using a coordinated, collaborative and voluntary approach. Founded in 1996 as a consensus-based, multi-stakeholder organization, the DRC's Board of Directors includes diverse representation including irrigated agriculture, hydro-power, tribal and environmental interests as well as federal, state and local government interests. Since 2006, the DRC and its partners have collaborated to engage instream, agricultural, and municipal interests in a process to identify their unmet water needs and to develop and analyze water management strategies to address those needs. Currently, the DRC conducts this process through the Deschutes Basin Study, a collaborative effort that will identify alternative approaches for meeting the goals of irrigation, municipal, and instream interests in the basin, including district piping, storage optimization and leasing water between districts and to the river.

The Tribe's proposed water marketing strategy builds on the work of the Basin Study by exploring the partial transfer of one of the largest water demands in the upper basin watershed to a new source of supply, allowing for greater flexibility in the management of water in the basin. This tailored and important project realizes even greater benefits when combined with Central Oregon Irrigation District's development of a water marketing strategy, which explores the creation of a large-scale temporary water trading program between senior districts, junior districts and instream needs. These two water market strategies are complementary pieces of a comprehensive plan to meet significant water needs in the basin by mobilizing a full set of collaboratively designed solutions.

The DRC expressly supports the WaterSMART Water Marketing Strategy Grant project proposed by the Warm Springs Tribe in partnership with the North Unit Irrigation District, and encourages Reclamation to fund this important study.

Sincerely,

A handwritten signature in black ink, appearing to read "Tod Heisler". The signature is fluid and cursive, with a prominent initial "T" and a long, sweeping underline.

Tod Heisler
Executive Director



Date: April 10, 2017

To: U.S. Bureau of Reclamation

Re: Support for Warm Springs Tribe's WaterSMART Water Marketing Strategy Project

Dear Reclamation,

The Deschutes River Basin has seen a myriad set of water management challenges over the past 20 years, as well as unique and innovative responses to those challenges. The Basin has been one of the focal points in the Western U.S. on water marketing strategies for meeting environmental objectives and for building collaborative water management partnerships. While these projects have proven successful, there remains significant work to be done to balance demands on the available water supply. The proposed project will build off of past work in the Basin, by continuing to explore voluntary, market-based solutions to water management challenges.

For over a century irrigation districts in Central Oregon have played a pivotal role in the Deschutes Basin's development and growth. Collectively they convey water to over 150,000 acres of productive farms and ranches as well as local cities, parks, and schools. The Districts have also undertaken unprecedented steps in collaboration with local, state and federal agencies, conservation groups and others to conserve water, and improve fish and wildlife habitat in the Deschutes River and its tributaries.

The Deschutes Basin Board of Control (DBBC) is comprised of eight Irrigation Districts including Arnold, Central Oregon, Lone Pine, North Unit, Ochoco, Swalley, Three Sisters and Tumalo Irrigation Districts.

Through the DBBC, formed in 2002, the Districts coordinate and share their respective resources and management assets to conserve water, improve their services for farm and ranch families, and enhance river conditions for wildlife species and recreational opportunities. The proposed project by the Warm Springs Tribe, in partnership with North Unit ID, further exemplifies the collaborative nature of the Deschutes Basin by working together to find creative solutions to complex and difficult issues faced by basin partners today.

The proposed project has the potential to make a significant impact on Deschutes Basin water management by partially transitioning one of the largest water demands in the Upper Basin watershed to a new source of supply. The project concept currently has many unanswered questions, but that is why the proposed work is so important, because it will both answer technical and legal questions and engage basin stakeholders in the development of the project from concept to implementation. In addition, the project has the potential to provide an important benefit to the Confederated Tribes of the Warm Springs Reservation, who have been an active member of basin water management efforts.

PO Box 919 - Madras, OR 97741

Deschutes Basin Board of Control Member Districts

Arnold Irrigation District • Central Oregon Irrigation District • Lone Pine Irrigation District • North Unit Irrigation District

Ochoco Irrigation District • Swalley Irrigation District • Three Sisters Irrigation District • Tumalo Irrigation District

DBBC President - Mike Britton. 541-475-3625; mbritton@northunitid.com

The DBBC expresses its support for the WaterSMART Water Marketing Strategy Grant project being proposed by the Warm Springs Tribe in partnership with the North Unit Irrigation District, and encourages Reclamation to fund this important study.

Sincerely,



Mike Britton
President
Deschutes Basin Board of Control