Establishment of the Central Oregon ter Bank o Increase Drought Resiliency in the Deschutes River Basin

Proposal submitted by:
Deschutes River Conservancy
in partnership with the
Deschutes Basin Board of Control

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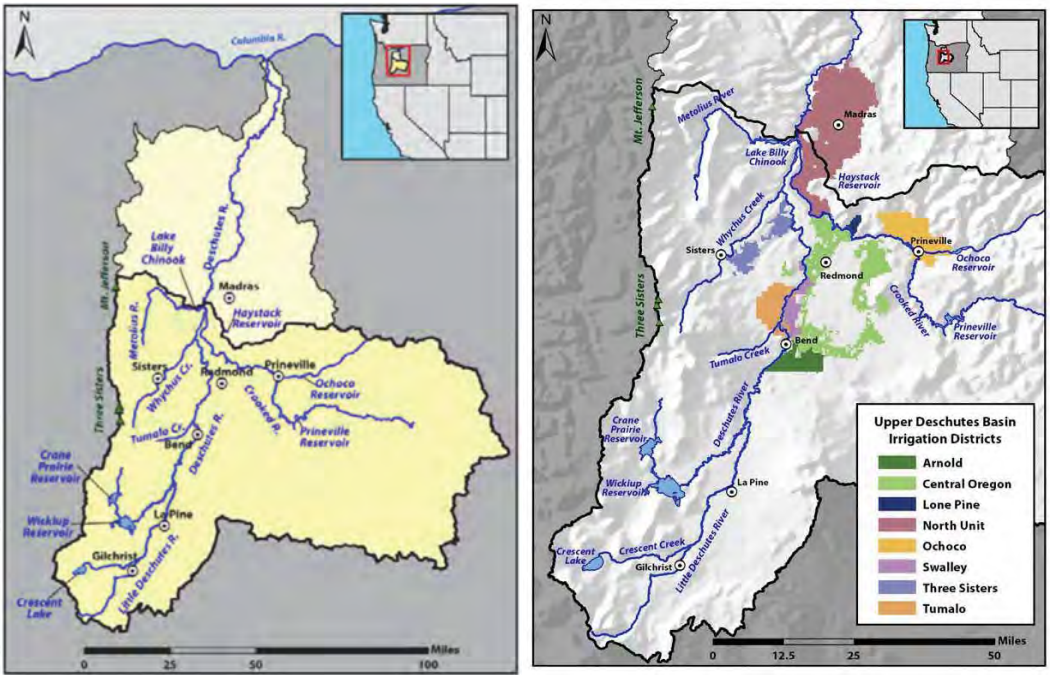
TEC N CAL PROPOSA AND EVALUATION CRITER A

EXECUTIVE SU ARY

The Deschutes River Conservancy (DRC), a 501(c)(3) non-profit organization a Category B applicant, in partnership with a Category A applicant, the Deschutes Basin Board of Control (DBBC) in Central Oregon, seeks WaterSMART Drought Resiliency Project funds to create and administer a water bank (Bank) to enable flexible, voluntary, market-based reallocation of water, particularly during drought conditions. Central Oregon is currently in a drought of historical significance. The extraordinarily low precipitation levels, coupled with record-setting heat waves, and compounded by several years of drought prior to this, have resulted in devastation to the agricultural communities, critical impacts to fish and wildlife throughout the basin including several listed under the Endangered Species Act, declining regional groundwater levels, and increased uncertainty for municipalities trying to secure future drinking water supplies. Various collaborative planning efforts have been undertaken within the Basin for many years, culminating most recently in a Reclamation-funded Upper Deschutes River Basin Study (Basin Study) and the Deschutes Basin Habitat Conservation Plan signed in 2020. Additional collaborations are on-going, including through the recently-formed Deschutes Basin Water Collaborative. Central Oregon Irrigation District (COID) and DRC are in the third and final year of developing a water marketing strategy through a Reclamation WaterSmart grant. This proposal builds on this work to formalize and operate a water bank that can respond more flexibly to drought conditions to meet water needs in the basin. Previous studies estimate that the Bank can result in up to 164,000 acre-feet of water voluntarily reallocated to support critical instream, agricultural and municipal needs. This strategy is supported by the Basin Study as well as drought actions identified in COID and North Unit Irrigation Districts' Water Management Conservation Plans. Developing and operating a water bank, particularly to address drought impacts in Central Oregon, requires enhanced metering and monitoring of water diversions, the ability to better forecast climate conditions and drought impacts on reservoir and river levels, and a strategy to tie these forecasts to needed responses. Central to this project is an urgent, focused effort to implement cooperative agreements between water users, water managers, stakeholders, and others to underpin Water Bank operations. These agreements are foundational to establishment of Bank governance, administration, transparency, finance, and day-to-day operations. The bank will be set up to optimize transactions during drought years to facilitate the voluntary reallocation of water on an adaptive basis. Bank activities will be designed to increase the water supply reliability for junior agricultural producers, ensure sufficient water for fish and wildlife, and secure reliable water supplies for growing cities. The project area includes Reclamation's Deschutes Project, ties directly to improving operations in Wickiup Reservoir and North Unit Irrigation District, Reclamation facilities, and will support goals associated with the ESA-listed Oregon spotted frog Habitat Conservation Plan agreements and Section 7 consultations. This project is proposed to initiate on October 1, 2022 and complete on September 30, 2025.

PRO ECT OCATION

The Project location is the Deschutes Basin of Central Oregon (UC 10 number: 1707030511). The initial map below shows the basin within the region, and the boundaries of the entire Deschutes, as well as the Upper Deschutes River. The following map indicates the Irrigation Districts within the Basin.



TECHN CAL PRO ECT DESCRIPT ON

The proposed Central Oregon Water Bank (the Bank) will facilitate reallocation of water as a drought response tool by building on existing, voluntary, market-based transactions. The priority of the Bank will be to work with the DBBC, its member irrigation districts, municipalities, quasi-municipal entities, and other stakeholders to deploy a suite of time and resource-efficient mechanisms to move water between users and uses to meet the resource needs, particularly urgent drought-related resource needs. The Bank will serve as a hub for this activity; as opposed to multiple individual efforts to reallocate water on an ad-hoc basis; a centralized institution will ensure transparency, credibility, and strategic coordination.

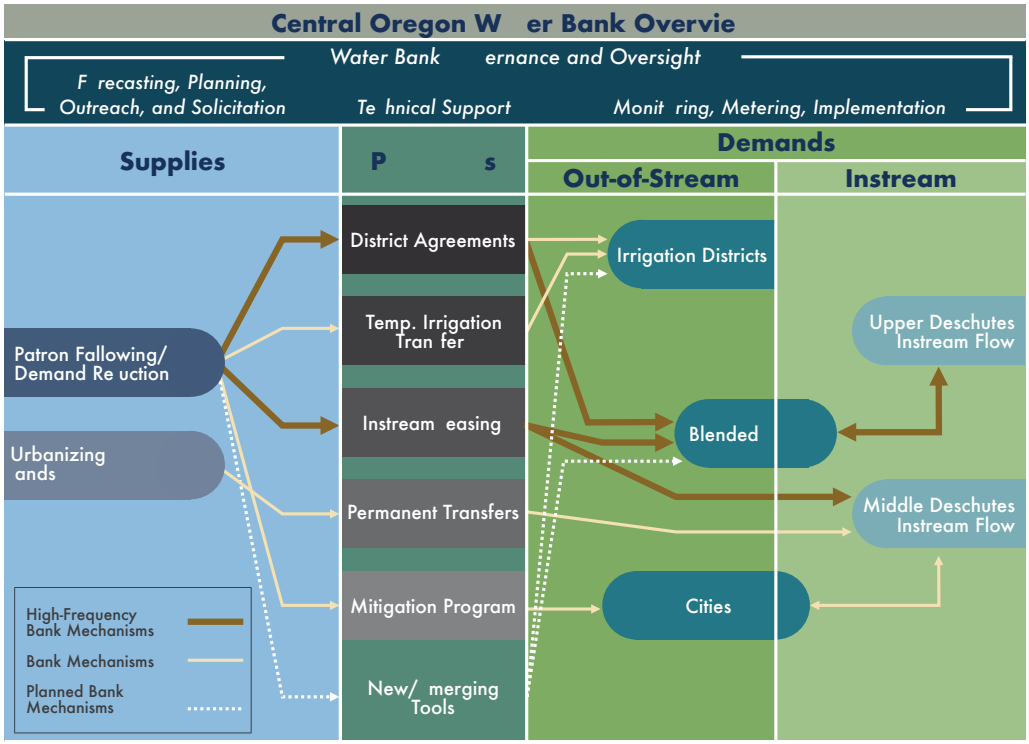
Market-based mechanisms offer several advantages over more rigid approaches to managing scarcity such as across-the-board surface and groundwater cut-backs. Banking (marketing/trading) provides incentives to water users who have rights to more ample supplies and lower-value uses to sell or lease water to those with more limited supplies and higher-value uses in agriculture, cities and towns, and the environment. By creating a path for water to find its highest-value uses, transfers through a Bank can lessen the costs of temporary shortages during droughts and potentially support long-term shifts in water use patterns – creating a

more drought resilient region. The Bank will provide a basin-wide operational (contractually managed) overlay to the current allocation of water right between districts and specific tracts.

A critical part of Bank development, and success at increasing resilience to drought conditions, will be increasing the accuracy of measurement and forecasting of climate, river flow, and reservoir conditions; reliable and accurate access quantity of water supplies available for transfer; and continued support of the Bank and its participants through adaptable governance and implementation. This project combines early drought detection and planning with proactive resource management to ensure water availability, thus enabling Central Oregon's drought-prone farms and communities to become more effective managers, replacing reactive and expensive short-term assistance measures with a framework for long-term drought resilience. The use of *in situ* sensors, coupled with remote sensing data will aid in improving estimates for rainfall and surface water availability, and will assist in the development and/or application of model(s) for water supply and demand forecasting. Existing models to be utilized include: RiverWare, OpenET, and GSFLOW. Beyond modeling and forecasting efforts, the Bank framework will include increased real-time monitoring of reservoirs and river flows through additional gaging, as well as more accurate measurements of irrigation canal distributions via improved data collection with the installation of Supervisory Control and Data Acquisition (SCADA) systems at various locations throughout the basin. Currently SCADA is deployed in the Three Sisters and North Unit Irrigation Districts and has proven effective in regulating the flow distribution, resulting in increased efficiency and conservation. Marrying modeling efforts/results with available GIS data for land and water uses, and real-time flow conditions/controls, will provide the Basin stakeholders and therefore, the Bank, with the needed information to make effective and efficient water management decisions. Incorporating this collection of data into a web-based decision support platform ("Dashboard") will provide Districts, municipalities, and those managing ecological flows for the river and listed species, with the best and most accurate water resources data in the Deschutes Basin.

Previous studies in the Deschutes Basin assessing projected water supplies and demands through 2050 indicate an overall 230,000 acre-feet unmet annual average demand, including agricultural, in-stream flow, and groundwater (municipal) needs. Stakeholders completed a comprehensive Basin Study in 2018, evaluating strategies to reduce this gap, including irrigation district efficiencies, water transactions, storage optimization, and legal/policy pathways to facilitate the movement of water between users and uses. Additionally, completion in December 2020 of the Habitat Conservation Plan (HCP), developed by the DBBC and the City of Prineville, in partnership with the US Fish and Wildlife Service and National Marine Fisheries Services, identified an accelerated need to restore flows in the Upper Deschutes River, addressing habitat issues for the ESA-listed Oregon spotted frog, as well as additional measures to support listed Mid-Columbia steelhead in the Crooked River and Whychus Creek. The 2018 Basin Study report also identified a significant volumetric opportunity to develop water transactions at relatively low cost, resulting in a study focused on a transactions program, as well as a Pilot Project in development between two of the Irrigation Districts. Acknowledging the potential economic, environmental, and community benefits of a Water Bank to manage such transactions across the Basin has led to this request for funding for this entity.

Below is a conceptual model of how the Bank would move water to meet needs of junior irrigators and the river:



To implement this project and meet all the goals for the development and utilization of the Water Bank the following Tasks are anticipated:

- Establishment of the Water Bank
    - Develop Memorandums of Understanding, identifying roles and goals of participants
    - Formalize an advisory board including DRC, DBBC, Central Oregon Cities Organization (COCO), legal advisors, financial and managerial consultants, and state/federal agencies
    - Coordinate with legal support on most effective and appropriate organizational structure
    - Develop Business Plan - DRC, DBBC, consultants, COCO
- Set Up Governance of Bank (Develop a Charter, i.e. a Deschutes Basin Drought Resilience Agreement)
    - Develop and record the Charter, Bylaws, and Board members/structure - DRC, DBBC, consultants, COCO, quasi-municipal entitles (Avion, Roates, Deschutes Valley Water District, Confederated Tribes of Warm Springs)

    - Intra-district agreements developed by DRC, DBBC, consultants, legal support
    - Set a monthly and annual meeting schedule for Advisory Board and Stakeholders - DRC
- Establish schedule for operations planning (annual) – including evaluation of drought situation and development/revision of Annual Resilience Plans - DRC, DBBC, consultants, COCO
    - Establish, evaluate, and maintain tools to optimize Water Bank and improve resiliency in dry years – DRC with consultants and agencies
- Establish modeling efforts for current conditions and forecasting, develop drought year alternatives, and calibrate with real-time data through existing and enhanced metering/data collection
    - Coordinate the modeling analyses and forecast to an Annual Resilience Plan specific to each year, allowing for the hydrology to trigger the appropriate response
    - etering – on-going
    - odeling – on-going
- Water accounting and allocation procedures - Develop accounting framework and process for transparency of water transfers
    - monthly meetings to transparently review the bank activities and ensure a shared understanding where operations need to vary
- Outreach - DRC and DBBC
    - On-going engagement with patrons within Districts, as well as other participants for educational and organizational purposes
- Establish Platform/Digital Infrastructure – DRC, consultants, DBBC
    - Create a website for communications and marketing purposes,
    - Provide open access to display and explain the Bank activity clearly and transparently.
- On-going/Annual Bank Operations – DRC
    - Reporting, developing, and revising Annual Plan, monitoring and documentation, and adaptive focus on drought management/resiliency - DRC

PERFORMANCE EASURES

Performance measures are a method of quantifying the outcomes/benefits of a proposed project once it is implemented. Quantifying project outcomes/benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of the project. With this in mind, DRC and DBBC will employ the following

data collection and analyses on the performance and effectiveness of the Bank, particularly during drought conditions. Reviewing performance measures allows for adaptive management of the Banking mechanism to ensure the best possible long-term outcomes.

Pre-project estimations of baseline data:
Collect pre-project monthly data for water resources that are included within the Bank, such as ground water pumping, water diversions, consumption, cropping information, water quality (temperature and dissolved oxygen), and stream flows, using measuring devices and/or historical data.

Post-project methods for quantifying benefits of water marketing projects:

- Track monthly diversions, by year and type of use (Agriculture, Municipal, Environmental, etc.) for both the buyer and seller of the marketed water and compare to pre-project diversions.
- Crop shifting or idling transfers:
    - Track monthly diversions by year and type of use and/or crop, before and after project implementation for both the buyer and seller of the marketed water.
    - Compare cropping records by year and crop type
    - Compare pre- and post-project records for seller of the marketed water.
    - Devise a field monitoring procedure to verify that fields remain fallowed.
    - Utilize remote sensing technology and/or modeling that employs this data (such as OpenET) to verify fallowed fields, crop water consumption and uniformity of crop water consumption on seller's fields.
- Other Transfers:
    - Compare pre-water market stream flow measurements with stream flow measurements during the water market period.
    - Compare pre- and post-water market effects in terms of the length of the irrigation season. Determine whether water marketing helped extend the irrigation season, particularly in drought years.
    - Compare pre- and post- water balances that are associated with the seller's transfer where the differences were used or stored. The water balance should include all water supplies, uses and losses associated with the water that was transferred.
    - Measure the benefits resulting from the application of the transferred water. Including: how many acres were irrigated that could not otherwise have been irrigated or whether the transfer had environmental benefits, such as providing flows for endangered fish or aquatic species or maintaining wetland areas.

- Compare pre-water market stream water quality measurements with measurements during the water market period. This may include pre/post changes in water temperature and dissolved oxygen.

- Document local economic impacts of transfer.

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Evaluation Criterion A— roject Benefit (30 point)

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

The proposed project is considered eligible for funding through this opportunity as a Task B project, by improving water management. The proposed project is comprised of the development of the Water Bank, and associated water marketing and management practices. These actions, as well as the Bank itself, provide long-term drought resilience via more accurate measurements, allowing improved forecasting of drought conditions; providing legal and administrative mechanisms for water transfers; and coordination with Irrigation Districts, municipalities, and representatives of instream flow concerns regarding the supply and demands of water within the Basin. The described data acquisition and evaluation increases the accuracy of available water. Acquiring this information and providing access to water resources that are accessible for transfer, informs the end users and allows for more efficient and resilient land use planning and water consumption rates. Presenting all of the information in an easily accessible and comprehensive web-based platform allows for real-time management and planning activities, as well as tracking of the drought conditions and forecasts. While the requested funding is for three (3) years, DRC and DBBC anticipate that once the Bank is established and the appropriate mechanisms are in place for transfers and accounting, the Bank may operate indefinitely into the future. It is anticipated that additional sources of "Banked" water will be incorporated as the Bank develops and is utilized.

Will the project make additional water supplies available? Yes.

If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? The 2018 Basin Study estimated that market-based tool could provide up to 164,000 ac-ft to address long standing issues and, which may be further optimized through on-farm conservation water and voluntary duty reductions. This estimate was generated through an analysis of past water marketing activities in the basin and included a survey of potential future activities through identifying irrigation district patron willingness to lease water. The Study estimated the average cost of this water to be $398/acre-ft (converted to a 75-year timeframe), providing a cost-effective and flexible option alongside more expensive canal piping solutions.

The breakdown of the water "available" within the Basin, as well as Demands, are as follows:

Total Annual Inflows to the Basin

• 860,000 to 2.3 million AF

Instream Demand

• Median shortages associated with meeting instream water rights and existing irrigation demands are approximately 130,000 AF. Shortages range up to 300,000 AF in dry years.

• To meet higher flows identified as necessary to support listed species, median shortages are approximately 200,000 AF, ranging up to 400,000 AF in dry years.

rrigation Demand

• Average annual surface water diversion for major irrigation districts is 724,000 AF

- Goal of maintain existing water supply reliability
- ore challenging for "junior" irrigation districts

unicipal Demand

• Current annual diversion (mostly groundwater): 40,000 AF

• Projected 50-year municipal demand will require 16,000 AF of water dedicated instream for groundwater mitigation

Provide this quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years). The bank would be designed to integrate with ongoing conservation in the basin to support a base reallocation of 130,000 acre-feet in average years. It would accelerate temporary market-based reallocation in drought years, on the scale of an additional 100,000 acre-feet. The average annual benefit over ten years is estimated to be 160,000 acre-feet.

What percentage of the total water supply does the additional water supply represent? How was this estimate calculated? Estimated 8-20% of the available water supply for a given year, using the range of values presented in the Basin Study of 860,000-2.3mil AF.

Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies. The additional water supplies the Bank will facilitate will increase reliability to junior users (who are engaged in the highest value commercial agriculture in the basin); allow for additional flow restoration and the associated positive benefits to habitat and susceptible species; create positive economic benefits associated with more reliable water for agriculture, more sustainable development within municipalities, and enhanced river-focused recreational opportunities. Other benefits include protection of existing water rights, while maximizing the flexibility of water users and rights holders/Districts. The scale of the opportunity comes close to matching estimated shortages in average and wet years and greatly improves conditions for agriculture and rivers in drought years. For example, 160,000 acre-feet of senior water rights reallocated to North Unit Irrigation District represents eighty percent of the Wickiup Reservoir storage it depends on, allowing instream flow goals to be met for the Oregon spotted frog. If the utility of the bank can be maximized, it will contribute significantly and materially to alleviating shortages and impacts of drought.

Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)? Yes**.**

If so: How will the project increase efficiency or operational flexibility?
What is the estimated quantity of water that will be better managed as a result of this project? The goal is to improve management of the total 724,000 acre-feet diverted annually in the basin, with an emphasis on the ~300,000 acre-feet diverted by senior irrigation districts that have more ample opportunity to improve management and to lease water.

How was this estimate calculated? The Basin Plan supports this level of improved management using a combination of water conservation and water marketing activities, all of which could be coordinated through the Bank.

Provide this quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years). The bank would be designed to integrate with ongoing conservation in the basin to support a base reallocation of 130,000 acre-feet in average years. It would accelerate temporary market-based reallocation in drought years, on the scale of an additional 100,000 acre-feet. The average annual benefit over ten years is estimated to be 160,000 acre-feet.

What percentage of the total water supply does the water better managed represent? How was this estimate calculated? Estimated 8-20% of the available water supply for a given year, using the range of values presented in the Basin Study of 860,000-2.3mil AF.

Provide a brief qualitative description of the degree/significance of anticipated water management benefits. The proposed project water management benefits include enhancing short and long-term drought resilience via more accurate measurements, allowing improved modeling and forecasting of drought conditions; providing agreeable legal and administrative mechanisms for water transfers; and coordination with Irrigation Districts, municipalities, and representatives of instream flow concerns regarding the supply and demands of water within the Basin. Overall improvements to the management of water resources within the Basin, particularly in times of drought, have measurable improvements (as described above), improve resilience of all sectors of the local economy and environment, and move the Basin towards long-term solutions through cooperation and innovation.

Will the project make new information available to water managers? If so, what is that information and how will it improve water management? Yes, new information will be available to managers and other end users. This information includes: the improved forecasting of drought conditions, more accurately measuring the amount of water potentially available through transfers, the market pricing of available transfers, and the amount of water available for various uses (i.e. irrigation, ground water mitigation, instream flow). Access to this information improves management of water resources in various ways, including allowing agricultural users in need to better plan for the coming growing season, allowing municipalities to more effectively plan for growth, allowing those involved in the HCP to account for available instream flow to meet habitat requirements, and allowing for managers of the reservoirs to plan release schedules and times of additional storage requirements.

If the proposed project includes any of the following components, applicants need to provide the additional information requested below for the specific project type. This additional information will be used in evaluating and scoring the proposal.

New Water Marketing Tool or Program. How does the new tool or program increase the flexibility of acquiring water on the open market? What is the scope of water users and uses that will benefit? Are there any legal issues pertaining to water marketing that could hinder project implementation (e.g., restrictions under Reclamation or state law or contracts, or individual project authorities). The DRC currently runs an Annual Water Leasing Program that voluntary reallocates irrigation water rights instream on a temporary basis. The DRC also runs the temporary Deschutes Groundwater Mitigation Program that secures temporary mitigation credits for groundwater users under the Deschutes Basin Groundwater Mitigation Program through leasing surface water rights instream. DBBC and COCO currently participate in both water marketing programs. The proposed Bank builds on these activities to provide a common governance structure to move water more flexibly between irrigation districts and to the river, as well as to more easily secure temporary and permanent mitigation credits for groundwater users and drinking water providers. Additionally, the main mechanism by which the proposed Bank increases flexibility is through quickly responding to changing needs and reallocating water through the market. With multiple demands for water for junior irrigators, cities, and instream needs for listed species, a transparent and inclusive governance structure ensures balance and credibility and reduces the risks of speculation and hoarding. State water law supports many proposed activities of the Bank. If policy constraints are identified in the quest to optimize the Bank, the partners will work closely with OWRD to resolve these. Reclamation authorities in Wickiup Reservoir limit the use of stored water to irrigation purposes, but Section 7 consultation on ESA issues allows for some flexibility in storage releases to support listed species under the Habitat Conservation Plan. Partners will work closely with Reclamation to address any unresolved issues related to this.

Evaluation Criterion B— ustainability and upplemental Benefit (20 points)

Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution, increase resilience to the impacts of climate change, protect public health, and conserve our lands, waters, oceans, and biodiversity. Examples in which proposed projects may contribute to climate change adaptation and resiliency, may include but are not limited to the following:

In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods? No

Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as, but not limited to, reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water? Yes.

Does this infrastructure complement other green solutions being implemented throughout the region or watershed? The creation of the Bank allows for applying water usage where it is needed versus for the sake of maintaining water rights and access.

The marketing also complements other 'green solutions' in so far as it enables the region to leverage ongoing piping investments. On-farm/District conservation work, such as piping of irrigation canals, has allowed for more efficient conveyance of water within districts, freeing up additional supplies. The marketing allows that supply to be allocated to the highest value uses dynamically in response to changing needs as informed by the forecasting and metering infrastructure. Because these needs will change, flexible banking mechanisms are preferable to permanent administration reallocation in meeting needs over time, particularly in drought conditions.

Will the proposed project establish and use a renewable energy source? Yes. The Bank and related marketing of water supplies supports the Central Oregon Irrigation District's existing hydropower projects, where existing water rights run through in-conduit hydropower. Allowing for the trading/transfers of water to continue to optimize the use of these facilities.

Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution? Yes. Low stream flows are a limiting factor for higher stream temperatures and associated decreased levels of dissolved oxygen. Implementation of the Bank, and resulting increased flows, will assist in mitigating the negative impacts from higher stream temperatures.

Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation? Yes. Improved in stream flow levels will enhance the riparian buffers and allow for more successful streamside vegetation restoration projects. This increased vegetation growth and related improvement in streamside soils and hyporheic exchanges, will sequester carbon beyond current levels.

Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses? Yes. This project does encourage the protection of water supplies and associated uses through the efficient management allowable via a Banking Instrument. Additionally, accurate forecasting and metering of existing and future supplies allows for more effective planning for all sectors, including agriculture, municipal, and environmental. Specifically, healthy agricultural practices provide soil retention and increased productivity, improved riparian buffer conditions reduce or eliminate soil loss due to bank erosion, and avoiding extremely low level of water within the reservoirs decreases turbidity and improves water quality.

Does the proposed project contribute to climate change resiliency in other ways not described above? A more sustainable, well-managed approach to distribution/marketing of water supplies contributes to climate change resiliency. As documented in a scholarly article from Case Western, climate change, and its projected effects on water use and supply, requires a fundamental reexamination of water institutions. It is suggested that market-based

institutions are well suited to address the additional pressures on water supplies due to climate change. The flexibility of water markets, as well as their decentralized nature and ability to create and harness economic incentives, make them particularly well suited for uncertain future water supplies. Development of water marketing/banks and appropriate pricing of the resource will offer additional options for management of water supplies, and ideally, ensure more efficient allocation of available water supplies.

Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities.

Will the proposed project serve or benefit a disadvantaged or historically underserved community? Yes. Improvements and increased reliability to water supplies for the predominantly agricultural communities, such as those within Jefferson County, will benefit the residents, laborers, and businesses that rely on the agricultural economy. Jefferson County has a significantly higher percentage of the Hispanic and native American population than the rest of Central Oregon or than the state at large. Specifically, Jefferson County is 19.9% Hispanic/Latino and 18.3% Native American. This compared to 8.3% and 1.1% respectively for Deschutes County, or 13.4% and 1.8% respectively for the state. Source:https://www.census.gov/quickfacts/fact/table/deschutescountyoregon,jeffersoncountyoregon,OR/PST045219

Jefferson county meets applicable state criteria or meets the definition in Section 1015 of the Cooperative Watershed Act (defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the state): https://www.census.gov/quickfacts/fact/table/deschutescountyoregon,jeffersoncountyoregon,OR/PST045219 With $53,277 in median family income vs. $62,818 statewide.

Tribal Benefits:
Does the proposed project support tribal resilience to climate change and drought impacts or provide other tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities? Yes. The Confederated Tribes of Warm Springs have been experiencing an on-going drinking water crisis. A portion of their drinking water is taken directly from the Lower Deschutes River, into their water treatment plant. By increasing reliability of river flows and improved water quality, the CTWS will directly benefit and experience an improved resiliency to climate change impacts related to drought conditions and lower/impaired river flows.

Does the proposed project support Reclamation's tribal trust responsibilities or a Reclamation activity with a Tribe? Yes. The Confederated Tribes of the Warm Springs' reservation lies within the Deschutes Basin and most of the Deschutes Basin is within the ceded lands of the CTWSR, giving them the rights to traditional fishing, hunting, and gathering on these lands. The tribes are a co-manager on all public lands within the ceded lands.

Ecological Value:

Does the project seek to improve ecological climate change resiliency of a wetland, river, or stream to benefit to wildlife, fisheries, or habitats? Do these benefits support an endangered or threatened species? Yes. The goal and intent of providing/returning flows to the Deschutes River through water transfers/transactions between users, through a reduction in accessing stored water, allows for releases to occur from reservoirs during critical periods of time for listed Threatened/Endangered Species. Increasing in-stream flows in various reaches of the Deschutes River, through leasing and permanent transfers (as part of the Bank), will directly benefit three Listed species: Oregon spotted frog, Mid-Columbia steelhead and bull trout, as well as non-listed redband Trout, Chinook Salmon and Sockeye Salmon. The river, and species who inhabit it, will benefit from the more reliable and increased stream flow – creating a more climate change resilient environment. The HCP, completed in Dec 2020, and its implementation, will improve the habitat for these species, as the irrigation districts and other stakeholders endeavor to achieve their associated requirements. Implementation and utilization of the Bank will assist in meeting these goals.

What are the types and quantities of environmental benefits provided, such as the types of species and the numbers benefited, acreage of habitat improved, restored, or protected, or the amount of additional stream flow added? How were these benefits calculated?

The following streamflow goals, set by state and federal resource agencies based on fish and wildlife needs, have been identified in priority stream reaches in the Deschutes basin:

- Increased flows in the Upper Deschutes River > of 400 cfs to support Oregon spotted frog and redband trout (existing flows are 105 cfs). These flows increase fish habitat and enable reconnection with floodplains, maximizing spotted frog habitat.
- Minimum flows in the middle Deschutes of 250 cfs to support redband trout (existing flows are 60-130 cfs).
- Minimum flows of 32 cfs in Tumalo Creek to support redband trout (existing flows are 18 cfs).
- Minimum flows of 33 cfs in Whychus Creek to support Mid-Columbia steelhead and redband trout (existing protected flows are 20 cfs).
- Target flows of 80 cfs in the lower Crooked River to support Mid-Columbia steelhead, redband trout and bull trout.

The proposal partners and the broader Deschutes Basin Water Collaborative are working on a comprehensive basin water management plan now that aims to meet the goals above, building on the foundation of the Habitat Conservation Plan. Bank activities will provide incremental progress towards these goals. Streamflow progress is monitored through an existing gage system. Associated water quality, habitat improvement, and ecosystem improvements are being documented and assessed through the HCP as well as work with state and federal agency partners in the basin.

Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status? Yes, improvements to the habitat of the listed species mentioned above (Oregon spotted frog, Steelhead, and Bull Trout) will provide an opportunity for the fish and amphibians to thrive and ideally, stabilize their populations, with an ideal outcome being future de-listing. As the Upper Deschutes is the stronghold of the Oregon spotted frog throughout its range, restoration efforts here have particularly influential benefits to this species. Streamflow restoration will also benefit redband trout, listed as a state species of concern, decreasing the changes of a future federal listing.

Other Benefits: Will the project address water sustainability in other ways not described above? Yes.

Will the project assist States and water users in complying with interstate compacts? No

Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)? Yes. The project will directly benefit all stakeholders within the Deschutes Basin, including Agriculture, Municipalities, Environmental Concerns, Recreation, and others. The creation and operation of the Water Bank will allow more farmers to have access to reliable water, even during drought conditions. The Bank will also provide much needed Groundwater Mitigation opportunities for Municipalities and others. More releases from stored water and more reliable flow throughout the Basin will directly benefit Environmental interests, as well as Recreation. The Bank operations will have a positive measurable impact on each of these segments of the local economy.

Will the project benefit a larger initiative to address sustainability of water supplies? Yes. Forty basin stakeholders are involved with the Deschutes Basin Water Collaborative, whose goals are to meet long-term water needs for rivers, agriculture and municipalities. The Collaborative is in the midst of developing a Comprehensive Basin Water Management Plan, scheduled to be complete within 2 years. The Water Bank is central to this plan alongside large canal piping infrastructure projects and potential relocation of storage. The water marketing components of the plan increase the cost-effectiveness of the plan and help to accelerate implementation timelines.

Evaluation Criterion C—Drought lanning and reparedne (15 point)

For purposes of evaluating this criterion, please:
Attach a copy of the applicable drought plan, or sections of the plan, as an appendix to your application. These pages will not be included in the total page count for the application.
Please see attached excerpts from the Central Oregon Irrigation District and North Unit Irrigation District Water Management and Conservation Plans, Drought Management Plans, and the 2018 Upper Deschutes River Basin Study. These are found in Appendix A.

Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for and address drought will receive more points under this criterion.

The Central Oregon Irrigation District (COID), largest of the District partners in the region, developed a Drought Management Plan in 2016. Additionally, North Unit Irrigation District (NUID) submitted a Drought Mitigation Plan as part of their WMCP in 2020. These Plans directly addresses how the District will mitigate operating during a drought, how it will better forecast drought conditions, and acknowledges vulnerabilities to be addressed to best facilitate drought management. Each district is required to submit a Water Management Conservation Plan to the state every five years, which includes drought measures. Additionally, the Upper Deschutes River Basin Plan identifies shortages and water management solutions in wet and dry years and incorporates climate change projections.

Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process? The WMCPs reflect collaborative work with partners and go through public comment through the Oregon Water Resources Department. The Basin Study was a collaborative effort with forty stakeholder groups represented and participating.

Does the drought plan include consideration of climate change impacts to water resources or drought? Yes.

Describe how your proposed drought resiliency project is supported by and existing drought plan. Both COID and NUID include in the potential drought mitigation measures, the concept of transferring water between users within a District and between Districts. The formation and implementation of the Bank will assist in making these transfers more straightforward and accessible, so that water may be more easily "moved" to where it is needed – particularly in times of drought. Also, the Basin Study described above, completed in 2018, lists water marketing as the most cost-effective and viable long-term solution to water shortages within the Basin, particularly to respond to drought years.

Does the drought plan identify the proposed project as a potential mitigation or response action? The Basin Study extensively reviews the potential benefits of a water marketing program within the Basin and includes it as one of three reviewed alternatives. Water marketing/the Bank resulted in being the most cost-effective way to achieve the goals of more effective and efficient water management. The Drought Plans from the Irrigation Districts call out temporary intra-district water transfers as viable solution to water shortages due to drought conditions.

Does the proposed project implement a goal or need identified in the drought plan? Yes. Establishment of the Bank creates a stable, legal, accessible method of allowing for water transfers. Additionally, moving towards meeting the instream flow goals of the HCP will be achievable via implementing transfers, allowing for flow released from Reservoirs and returned to the river.

Describe how the proposed project is prioritized in the referenced drought plan? The development of a water marketing program/Bank was prioritized during the collaborative Basin Study process. As mentioned above, the Basin Study extensively reviewed the potential benefits of a water marketing program within the Basin and includes it as one of three reviewed alternatives. Water marketing/the Bank resulted in being the most cost-effective way to achieve the goals of more effective and efficient water management. Also, the Drought Plans from the Irrigation Districts specifically call out temporary intra-district water transfers as viable solution to water shortages due to drought conditions. Also mentioned in the Drought Plans are improvements to head-gate operations and conservation practices through on-farm efficiency projects.

Evaluation Criterion D— everity of Actual or otential Drought Impact to be addre ed by the roject (15 point)

Describe the severity of the impacts that will be addressed by the project:
What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts?
Most municipal water use relies on groundwater, and persistent drought impacts groundwater levels (decline), which could create issues with municipal wells over time. Within the Deschutes River basin, there is a strong, documented surface water and groundwater connection, such that changes in one impacts the other. The City of Bend is one municipality that relies on both surface water (Tumalo Creek) and groundwater and would be impacted more severely than other municipal water providers due to the surface water component. Rapid population growth in central Oregon, coupled with persistent drought conditions, could further impact municipal water supplies over time. A water market/the Bank would help redistribute water to cities and provide access to needed groundwater mitigation credits.

There is also a public health concern with the development of algal blooms in reservoirs. This health concern resonates most significantly with recreation, as these reservoirs are not relied upon for public drinking water.

As mentioned in information provided above, the Confederated Tribes of Warm Springs (CTWS) acquire their drinking water from the Lower Deschutes River and its tributaries. Decreased river flows and reduced water quality directly impact the Tribes' ability to acquire the needed quantity and quality of water for treatment.

Does the community have another water source available to them if their water service is interrupted?.
No.

Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat).

Rivers have been experiencing "drought" via over-appropriation for over a century. Flow restoration projects have improved flows, but in times of shortage, these protected flows are reduced proportionally along with the out of stream uses. Persistent drought creates more stress on an already impacted river environment. As mentioned in text above, there are varying minimum flow conditions required for habitat for different species. River flows further reduced during drought conditions struggle (or are unable) to meet these minimum flow conditions, thereby harming listed species and their habitats.

Whether there are local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future (e.g., business, agriculture, reduced real estate values).
The increased frequency and intensity of drought has had great impact on Jefferson County agriculture as drought persists. In 2021, 50% of Jefferson County farms were fallowed and it is likely that struggling farms may begin to fail. Since the economy in Jefferson County is heavily influenced by agriculture and contributes $260M to the local economy, this will have a ripple effect on associated businesses.

If available flows continue to decline due to drought and out-of-stream pressures, existing in-conduit hydropower could be impacted. This In-conduit hydropower in piped irrigation district systems can improve clean power supply during irrigation season, but these projects are dependent on and impacted by, water availability.

Recreation and Tourism is a $1.28 billion dollar per year impact on the local economy 2019-VCO-Annual-Report.pdf (visitcentraloregon.com). Persistent drought could impact certain segments of this economic driver (fishing, water recreation, rafting, river and lake use).

There are potential negative impacts to property values in junior irrigation districts, which have been receiving a reduced allotment of water, or no water for a full season for the past 2 years (2020-2021).

Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict). There are tensions over water between the 50,000 plus acres of senior water in Deschutes County and the 50,000 plus acres of junior water serving commercial agriculture in Jefferson County. So far, the tensions have been manageable, but increase with each new consecutive year of drought.

Describe existing or potential drought conditions in the project area:
Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Yes.

Please describe existing or recent drought conditions, including when and the period of time that the area has experienced drought conditions (please provide supporting documentation, [e.g., Drought Monitor, droughtmonitor.unl.edu]).

Current drought conditions in the Region include:

- Severe to Exceptional drought in Deschutes/Crook County area in 5 of the last 8 years, and 4 of last 8 years for Jefferson County
- 4th driest year on 127 year record for Deschutes/Crook County and 6th driest on record for Jefferson County
- Early irrigation district turn offs (mid-August – North Unit Irrigation and Arnold Irrigation Districts) – 2020, 2021 and likely in 2022
- Reduced deliveries (North Unit, Arnold, Tumalo, and Central Oregon Irrigation Districts)
- Drought impacts especially severe in Junior districts and with commercial agricultural producers in North Unit
- Drought conditions expected to persist into 2022 and beyond

Additional drought condition information:

- Periodic dry reaches in the Crooked River in 2021
- Reduced flows in the middle Deschutes River in 2021
- Impacts to recreation – lakes/rivers, including boating, rafting, and fishing
- Algal blooms in low water/warm reservoirs
- ncreased turbidity in water released from low reservoirs
- Per OWRD, the Deschutes River basin has had lowest natural streamflow (summer 2021) since the Irrigation Districts first started using Wickiup Reservoir in 1949

Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability and climate change. Provide support for your response (e.g., reference a recent climate informed analysis, if available).
It has been determined by OWRD that even with average or above average snowfall/precipitation during the winter months, Wickiup Reservoir will be unable to fill to capacity for several years to come. This Reservoir is the source of irrigation for the North Unit Irrigation District, the most junior of the Districts in the Deschutes basin. Additionally, insufficient filling of this reservoir will prevent ideal winter flow releases for habitat requirements. The excessive drawdown is due to irrigation needs/pressures resulting from the on-going drought conditions. With drought conditions expected to continue and climate change impacts increasing evapotranspiration and average temperature, the likelihood of the reservoirs returning to maximum capacity is greatly reduced for some time. Climate change projections show a change of precipitation from snow to rain, affecting timing of run-off with implications for agricultural users and drier streams in mid-late summer.

Evaluation Criterion E— roject Implementation (10 point)

Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: design, environmental and cultural resources compliance, permitting, construction/installation.

Below is a Gantt diagram of the proposed project schedule, based on project initiation in the second quarter of Fiscal Year 2022. Dates will be adjusted accordingly if start date is to occur at a later date.

rojec Componen	pecific ask	2022			2022				2023				2024
		2	3	4	1	2	3	4	1	2	3	4	1
Outreach	General public outreach												
	Landowner/s akeholder m gs.												
	Develop wa er bank websi e												
Water Bank Forma ion	Develop												
	esearch corpora e struc ures												
	Develop business plan (opera ions, finances, etc.)												
	Incoporate/formalize water bank												
Formalize Wa er Bank Governance	Draf bank char er												
	Draft intra-dis ric agreemen												
	Formalize oversigh /advisory board												
	Finalize bank char er and intra-												
	Adopt bank char er												
	ign in ra-district agreemen												
Ongoing Bank Opera ions (os - Bank Forma ion)	Landowner outreach												
	Bank supply acquisi ion and coordina ion												
	Bank supply sales												
	arke racking												
	Annual repor ing												
Develop and Deploy Tools o Op imize Bank Opera ions and Improve esliency	Develop new and hone exis ing reservoir level and o her forecas ing ools												
	Develop moni oring plan												
	Implement monitoring plan												
	Develop wa er accounting and alloca ion procedures based on forecas ing and moni oring												

Describe any permits that will be required, along with the process for obtaining such permits. No known permits required.

Identify and describe any engineering or design work performed specifically in support of the proposed project. Locating and installation of SCADA enhanced water controls may require engineering and/or design efforts.

Describe any new policies or administrative actions required to implement the project. t is the goal and intent of the DRC and DBBC to work within existing state policies, however new agreements between water users/Districts will likely be required and will be drawn up and

executed as part of the Project implementation. Additionally, the creation of the Bank itself will warrant a Charter between participating members.

Evaluation Criterion F— exus to eclamation (10 point)

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider the following:
Does the applicant have a water service, repayment, or O&M contract with Reclamation?
If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means? Yes. See below.

Will the proposed work benefit a Reclamation project area or activity?
The Deschutes Project is a Reclamation facility and is the primary focus of this work. Principle features include Wickiup Dam and Reservoir, Crane Prairie Dam and Reservoir, Haystack Dam and Reservoir, North Unit Main Canal and lateral system, and the Crooked River Pumping Plant. The project supports a full supply of irrigation water for about 50,000 acres of land within the North Unit Irrigation District, and a supplemental supply for more than 48,000 acres in the Central Oregon Irrigation District, Arnold Irrigation District and Lone Pine Irrigation District. This project directly benefits and works in concert with Reclamation's Deschutes Project, including Section 7 ESA issues related to the Oregon spotted frog and the operation of Wickiup Reservoir.

The proposed Bank will be designed to mitigate supply shortfalls that are central to the Deschutes Project. Crane Prairie and Wickiup Reservoirs drive management of the Upper Deschutes River, which experiences significant flow restoration issues. Reclamation manages these reservoirs to supply irrigation water to four irrigation districts in the basin. The proposed banking strategy will develop a program to move water between irrigation districts, reduce reliance on stored water, and allow flows to be restored to the Upper Deschutes River. The development and implementation of the Water Bank will directly benefit Reclamation and the Deschutes Project by providing tangible solutions to water supply shortfalls that reduce conflict and threats of further litigation.

Currently, COID and DRC are partnered with Reclamation to create a Prioritization Toolbox for the conversion of irrigated lands to more efficient practices. Engineers and scientists at Reclamation's Technical Services Center (TSC) in Colorado are assisting in analyses of innovative solutions to water and power resource issues. Their technical assistance and training in hydrology and modeling will be critical to the toolbox building efforts of COID and DRC.

s the applicant a Tribe? No, however this work is in the direct interest of the Confederated Tribes of Warm Soring Reservation's priorities for clean and sufficient water and quality salmon habitat. They are a partner in this work, and chair of the Deschutes Basin Water Collaborative and DRC board.

PRO ECT BUDGET

FUNDING P AN AND ETTERS OF COM TMENT

A funding plan for the required matching funds is presented in Appendix A, as a Letter of Commitment from DRC.

BUDGET PROPOSA

Table 1.

URCE	AMOUNT
Costs to be Reimbursed with the Requested Federal Funding	$1,370,473.00
Costs to be Paid by the Applicant	$1,370,500.00
Value of Third-Party Contributions	$0.00
TOTAL PROJECT COST	**$2,740,973.00**

Table 2.

FUNDING SOURCES	AMOUNT
on-Federal Funding Entities	
Deschutes River Conservancy (DRC)	$1,370,450.00
Non-Federal Subtotal	$1,370,450.00
Requested Reclamation Funding	**$1,370,473.00**

Table 3. Proposed Budget

BUDGET TE DESCR PT O	CO PUTAT O		Qua tity Type	Total WaterS ART Gra t Fu di g Request	Match	TOTA PRO ECT COSTS
	$/U it	Quantity				
Salaries and Wages						
Executive Direct r, ate Fitzpatrick	$57.66	1520		$57,660.00	$30,000.00	$87,660.00
r grams Director	$43.27	1693		$43,270.00	$30,000.00	$73,270.00
C mmunicati ns Director	$38.68	967		$17,406.00	$20,000.00	$37,406.00
Seni r r gram anager	$41.42	1209		$31,065.00	$19,000.00	$50,065.00
r gram anager	$40.00	875		$20,000.00	$15,000.00	$35,000.00
r ject anager	$28.85	1370		$24,522.50	$15,000.00	$39,522.50
Fri ge Benefits						
Executive Direct r, ate F	$28.83	1520		$28,830.00	$15,000.00	$43,830.00
r grams Director	$21.64	1693		$21,635.00	$15,000.00	$36,635.00
C mmunicati ns Director	$19.34	967		$8,703.00	$10,000.00	$18,703.00
Seni r r gram anager	$20.71	1209		$15,532.50	$9,500.00	$25,032.50
r gram anager	$20.00	875		$10,000.00	$7,500.00	$17,500.00
r ject anager	$14.43	1370		$12,261.25	$7,500.00	$19,761.25
Equipme t						
Water etering Equipment - SCADA	$25,000.00	4		$100,000.00		$100,000.00
Travel						
n-basin Travel t Districts and Reserv irs	$0.50	5000	miles	$2,500.00		$2,500.00
C nference Registrati n Fee - resent ro ject Results	$800.00	2		$1,600.00		$1,600.00
C nference Travel - Airfare, per Diem	$700.00	2		$1,400.00		$1,400.00
Supplies and Materials						
utreach Materials - Office and Distributi n	$2,500.00	1		$2,500.00		$2,500.00
Data C llection Supplies - del Calibrati n	$4,500.00	1		$4,500.00		$4,500.00
Other						
Bank Water Transactions Funding				-	$760,000.00	$760,000.00
Consultants						
Deschutes Basin B ard of C ntr l (DBBC) Staff	$100.00	1000		$100,000.00	$55,000.00	$155,000.00
A nsights - Water Transacti ns Management	$150.00	1350		$202,500.00	$112,000.00	$314,500.00
GSI S luti ns - Water Rights C nsultant for Central reg n Cities Organizati n	$120.00	500		$60,000.00		$60,000.00
C nsultant - Develop Bank Dashboard/Web Access	$150.00	750		$112,500.00	$62,000.00	$174,500.00
C nsultant - Develop F recasting/Dr ught Analysis/ deling Eff rts	$150.00	850		$127,500.00	$60,000.00	$187,500.00
Summit - Financial G vernance	$150.00	1350		$202,500.00	$110,000.00	$312,500.00
utreach Services	$125.00	300		$37,500.00	$18,000.00	$55,500.00
SUB-TOTA PRO ECT D RECT COSTS				$1,245,885.00	$1,370,500.00	$2,616,385.00
ndirect Costs						
DRC de minimus TDC	10%			$124,588.00	-	-
TOTA ESTI ATED PRO ECT COSTS				**$1,370,473.00**	**$1,370,500.00**	**$2,740,973.00**

BUDGET NARRAT VE

The attached budget provides the breakdown of costs by type and organization for this proposed project. The funding term requested is three (3) years.

alaries & Wages:

Employees, including the Executive Director for DRC and others, are listed in the Proposed Budget, as well as consultants. All Staff of the DRC listed in this proposal will be actively working on the project for the duration, and in a variety of capacities from Project Management, Coordination of Partners, Boards, and Stakeholders, Public Outreach, Data Collection and Analyses, Program/Bank Development and Oversight, and Reporting to Reclamation as per provided direction on reporting requirements, including final project and evaluation reports.

Fringe Benefits:

Regarding the listed salaries and associated fringe benefits, each employee has a different fringe rate, due to longevity, rate of pay, and other factors. The rate also changes from year to year, with adjustments in rate of pay and which benefits are being utilized. For the budget, we took a weighted average to fit the proposed budget format. We weighted the rates based on proposed hours to get to the 50% of the hourly rate included in the budget. Fringe benefits include medical and dental insurance, retirement contributions, FICA/Medicare, unemployment insurance, and workers' compensation insurance.

ravel:

Most travel associated with this project will be in-basin and by car. It is anticipated that DRC personnel will require travel to and from meetings, monitoring locations, and other related events during the project. The DRC staff have also allocated a portion of the travel budget for attending one (1) out of State professional conference to present Project related data and results. Without the ability to currently register for such an event, estimates have been made for possible needed airfare, per diem, and conference registration fees.

Equipment:

For the purposes of collecting data and for effectively managing irrigation facilities during drought conditions, DRC has included the installation of 4 SCADA operated facilities. The associated improved efficiency of water movement and delivery will assist in supporting the efforts of the Bank and the goals of better utilizing the existing water resources in times of scarcity. Additionally, for the purposes of calibrating hydrological models and improving drought forecasting within the basin, DRC may elect to install in-stream gages and/or other methods of collecting more accurate flow level data.

Contractual:

There are many aspects of this project that will include the employment and participation of various consultants. The consultant descriptions, hourly rates, and hours are included in the proposed budget. DRC has identified various potential consultants for the specific needs of the

project and will follow the stated Procurement process for selection and hiring of consultants (*2CFR §200.320 – Methods of procurement to be followed*)

The participation of consultants is woven throughout the project tasks and schedule, and includes the following activities (as described in more detail in the Project Description section):

- Establishment of the Water Bank
- Set Up Governance of Bank
- Establish, evaluate, and maintain tools to optimize Water Bank and improve resiliency in dry years
- Water Accounting and Allocation Processes/Procedures
- Establish Platform/Digital Infrastructure

Indirect Costs

DRC includes 10% *de minimus* rate for Indirect expenses and includes the following in this designation: administrative salaries and fringe benefits associated with overall financial and organizational administration, operation and maintenance costs for facilities and equipment, and payroll and procurement services.

ENV RONMENTA AND CU TURAL RESOURCES COMPL ANCE

It is not anticipated by DRC and DBBC that the work proposed with this project will require extensive Environmental and Regulatory Compliance costs. A consultant is not being secured to perform any compliance actions.

REQU RED PER TS AND/OR APPROVALS

There are no known permits or approvals necessary for this project at this time.

EXIST NG DROUG T CONTINGENCY PLAN

Please see attached sections of the previously mentioned Drought Plans from the Irrigation Districts in Appendix B.

LETTERS OF SUPPORT AND LETTERS OF PARTNERS P

Please see attached letters of support from various stakeholders within the Deschutes River Basin in Appendix C. Also included in Appendix C is the Letter of Partnership for DRC from the DBBC.

OFFICIAL RESOLUT ON

An Official Resolution is being presented to the DRC Board at the Oct. 10, 2021 meeting and will be forwarded to BOR following submittal of this proposal.

APPENDIX A – ETTER OF SUPPORT/FUND NG PLAN

DESCHUTES RIVER
CONSERVANCY

October 5, 2021

To Whom it May Concern:

This letter confirms the Deschutes River Conservancy's commitment to secure match funding for the Development of a Water Bank for Central Oregon to improve drought resiliency in the amount of $1,370,500 over three years, or $456,833 per year. The DRC has a successful and stable track record securing state and foundation grants. The table below identifies the DRC's match funding plan by funder. The DRC has consistently raised the identified funding amounts from these donors in the past and we expect the listed donors to enthusiastically invest in the development and capitalization of a water bank to accelerate flow restoration and water management improvements in the basin.

The DRC feels confident that it can secure Year 1 funding prior to executing an agreement with Reclamation. We also feel confident, based on our funding track record and the available annual grant opportunities, that we can continue to secure funding for years 2 and 3 and would be willing to demonstrate this at the beginning of each year.

Source	Year 1	Year 2	Year 3	Total	Notes
Bella Vista Foundation	$ 53,333	$ 53,333	$ 53,333	$ 160,000	Consistent with current and past annual investment
Meyer Memorial Trust	$ 60,000	$ 60,000	$ 60,000	$ 180,000	Consistent with current annual investment
Oregon Water Resources Department	$ 173,500	$ 173,500	$ 173,500	$ 520,500	Highly likey given OWRD budget and state priorities
Oregon Watershed Enhancement Board	$ 100,000	$ 100,000	$ 100,000	$ 300,000	Highly likely given past successs with OWEB grant opportunities
Bonneville Environmental Foundation	$ 70,000	$ 70,000	$ 70,000	$ 210,000	Consistent with current annual investment
Total	**$ 456,833**	**$ 456,833**	**$ 456,833**	**$ 1,370,500**	

Warmly,

Kate Fitzpatrick

Kate Fitzpatrick

Executive Director

APPENDIX B – DROUGHT MANAGEMENT PLAN

APPENDIX C – LETTERS OF SUPPORT

UPPER DESCHUTES
WATERSHED COUNCIL

Bureau of Reclamation
1150 North Curtis Road
Boise, ID 83706-1234

September 28, 2021

Re: BOR Drought Resilience Grant Proposal – Water Bank of Central Oregon

Dear Grant Review Team:

The Upper Deschutes Watershed Council encourages support for the proposal from the Deschutes River Conservancy DRC and the Deschutes Basin Board of Control DBBC for the Bureau of Reclamation WaterSMART Drought Resilience funding opportunity. The DRC and DBBC endeavor to utilize these funds to implement a Water Bank for Central Oregon the Bank), serving those in the Deschutes River Basin. The Bank will facilitate water transfers and govern the voluntary and orderly reallocation of water to where it is most needed, and develop tools to improve forecasting and measurement of drought conditions and magnitude.

The recently completed Deschutes Basin Study, the current work of the Deschutes Basin Water Collaborative, and the forthcoming implementation of a Water Marketing Pilot Program are all moving the Basin forward in drought resilience planning and preparation. The Upper Deschutes Watershed Council participates as a current member of the Deschutes Basin Water Collaborative. The Bank, made possible through this funding, will be a next important step in sustainably meeting the Deschutes Basin water demands and water management goals. The Bank will provide a mechanism to meet the demands of the Basin, implement the Habitat Conservation Plan HCP and in doing so, provide reliable water for agriculture and municipalities, while restoring critical stream flows – particularly during significant drought conditions.

We support the DRC and DBBC in requesting this grant to establish of the Water Bank of Central Oregon.

Thank you for your consideration.

Sincerely,

Kris W. Kight

Kris Kright
Executive Director
Upper Deschutes Watershed Council

THE CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON

Warm Springs, Oregon 97761 / 541-553-1161

Bureau of Reclamation
Columbia-Pacific NW Office
1150 North Curtis Road
Boise, ID 83706-1234

October 4, 2021

Re: BOR Drought Resilience Grant Proposal – Water Bank of Central Oregon

Dear Grant Review Team:

On behalf of the Confederated Tribes of Warm Springs, Branch of Natural Resources.

We strongly encourage you to support the proposal from the Deschutes River Conservancy (DRC) and the Deschutes Basin Board of Control (DBBC) for the Bureau of Reclamation WaterSMART Drought Resilience funding opportunity. The DRC and DBBC endeavor to utilize these funds to implement a Water Bank for Central Oregon (the Bank), serving those in the Deschutes River Basin. The development and operation of the Bank is a critical component to ensuring a more drought resilient region. The Bank will facilitate water transfers and govern the voluntary and orderly reallocation of water to where it is most needed, and develop tools to improve forecasting and measurement of drought conditions and magnitude.

The recently completed Deschutes Basin Study, the current work of the Deschutes Basin Water Collaborative, and the forthcoming implementation of a Water Marketing Pilot Program are all moving the Basin forward in drought resilience planning and preparation. The DRC and DBBC feel that the Bank, made possible through this funding, will be the next, and most important step, in sustainably meeting the Deschutes Basin water demands and water management goals. The Bank will provide a mechanism to meet the demands of the Basin, implement the Habitat Conservation Plan (HCP) and in doing so, provide reliable water for agriculture and municipalities, while restoring critical stream flows – particularly during significant drought conditions.

We support the DRC, DBBC, this proposal, and the establishment of the Water Bank of Central Oregon.

Thank you for your consideration.

Sincerely,

Robert A. Brunoe,
General Manager Branch of Natural Resources
Confederated Tribes of Warm Springs

CENTRAL OREGON CITIES ORGANIZATION

Bend, Culver, La Pine, Madras, Maupin
Metolius, Prineville, Redmond, Sisters

Bureau of Reclamation
Columbia-Pacific NW Office
1150 North Curtis Road
Boise, ID 83706-1234

October 4, 2021

Re: BOR Drought Resilience Grant Proposal – Water Bank of Central Oregon

Dear Grant Review Team:

Please accept this letter of support from The Central Oregon Cities Organization (COCO). COCO was established in 2002 and includes the cities of Bend, Culver, La Pine, Madras, Maupin, Metolius, Prineville, Redmond and Sisters. COCO's purpose is to effectively and efficiently promote common interests of the cities in Central Oregon for issues such as transportation, economic development, school funding, tax reform, and ***water***. COCO has specifically established a water subcommittee that meets regularly to engage in basin-wide water issues; several members of COCO hold groundwater rights that require mitigation mitigation credits) under the Deschutes Basin Groundwater Mitigation Program. COCO is also an active participant in the Deschutes Basin Water Collaborative.

We encourage you to support the proposal from the Deschutes River Conservancy (DRC) and the Deschutes Basin Board of Control (DBBC) for the Bureau of Reclamation WaterSMART Drought Resilience funding opportunity. We understand that the DRC and DBBC will use these funds to implement a Water Bank for Central Oregon (the Bank), serving those in the Deschutes River Basin. In addition to ensuring a more drought resilient region, a well-functioning Bank is crucial for COCO members (and others) in order to have a location where temporary and permanent mitigation credits can be established, held and traded. Such a Bank would allow for orderly and efficient long-term municipal water supply planning, diminish water rights and mitigation credit speculation, and alleviate mitigation credit scarcity.

The recently completed Deschutes Basin Study and the on-going efforts of the Deschutes Basin Water Collaborative continue to move the Basin forward in drought resilience planning and preparation. A well-functioning Bank, made possible through this funding, will be another key milestone in sustainably meeting the Deschutes Basin water demands and management goals including the demands of COCO members that require mitigation credits and drought resiliency). The Bank can also be a tool to help implement the Habitat Conservation Plan

Chair Richard Ladeby
Central Oregon Cities Organization
Email: rladeby@ci.madras.or.us

Doug Riggs, Lobbyist
NW Grassroots & Communications
(503) 702-5120 doug@ngrc.com

(HCP) and in doing so, provide reliable water for agriculture while restoring critical stream flows – particularly during significant drought conditions.

We support the DRC and DBBC's proposal for the establishment of the Water Bank of Central Oregon.

Thank you for your consideration.

Sincerely,

Michael Buettner
Co-Chair, COCO Water Subcommittee

Chair Richard Ladeby
Central Oregon Cities Organization
Email: rladeby@ci.madras.or.us

Doug Riggs, Lobbyist
NW Grassroots & Communications
(503) 702-5120 doug@ngrc.com

Bureau of Reclamation
Columbia-Pacific NW Office
1150 North Curtis Road
Boise, ID 83706-1234

September 27, 2021

SUBJECT: Bureau of Reclamation Drought Resilience Grant Proposal – Water Bank of Central Oregon

Dear Grant Review Team:

This letter is in support of the Deschutes River Conservancy's DRC and the Deschutes Basin Board of Control's grant application to the Bureau of Reclamation BOR for WaterSmart Drought Resilience funding. The Deschutes Redbands Chapter of Trout Unlimited TU has 720 members who are committed to preserving the cold-water fisheries in the Deschutes Basin. For us and many other Central Oregonians, our rivers, and particularly the Deschutes, are the reason we're here. No single act will restore the Deschutes, however, the ability to allocate water to where it is most needed is a critical management tool. We believe water banking is an important component of this.

Therefore, we strongly encourage you to support the proposal from the DRC and DBBC for WaterSMART Drought Resilience funding. These organizations will use the funds to implement a Water Bank for Central Oregon (Bank), serving those in the Deschutes River Basin. The development and operation of the Bank is critical to ensure a more drought resilient region. The Bank will facilitate water transfers and govern the voluntary and orderly reallocation of water to where it is most needed. It will also be an important tool to improve forecasting and measurement of drought conditions.

The recently completed Deschutes Basin Study, the current work of the Deschutes Basin Water Collaborative and the forthcoming implementation of a Water Marketing Pilot Program are all moving the Basin forward in drought resilience planning and preparation. The DRC and DBBC feel that the Bank, made possible through this funding, will be a critical step in sustainably meeting the Deschutes Basin's water demands and water management goals. The Bank will provide another tool to meet the demands of the Basin, implement the Habitat Conservation Plan HCP and provide reliable water for agriculture and municipalities, while restoring critical stream flows – particularly during significant drought conditions.

For these compelling reasons, The Deschutes Redbands Chapter of Trout Unlimited supports this grant proposal to BOR and the establishment of the Water Bank of Central Oregon.

Thank you for your consideration.

Shaun Pigott, President
Deschutes Redbands Chapter – Trout Unlimited
16 NW Kansas Ave.
Bend, OR 97703

Bureau of Reclamation
Columbia-Pacific NW Office
1150 North Curtis Road
Boise, ID 83706-1234

September 28, 2021

Re: BOR Drought Resilience Grant Proposal – Water Bank of Central Oregon

Dear Grant Review Team:

The Oregon Water Resources Department's mission is to "serve the public by practicing and promoting responsible water management." I believe that the Deschutes River Conservancy is the organization that holds a unique position to create a balanced, inclusive water bank that can address drought resiliency as well as protect stream flow and out of stream needs.

We strongly encourage you to support the proposal from the Deschutes River Conservancy (DRC) and the Deschutes Basin Board of Control (DBBC) for the Bureau of Reclamation WaterSMART Drought Resilience funding opportunity. The DRC and DBBC endeavor to utilize these funds to implement a Water Bank for Central Oregon (the Bank), serving those in the Deschutes River Basin. The development and operation of the Bank is a critical component to ensuring a more drought resilient region. The Bank will facilitate water transfers and govern the voluntary and orderly reallocation of water to where it is most needed, and develop tools to improve forecasting and measurement of drought conditions and magnitude.

The recently completed Deschutes Basin Study, the current work of the Deschutes Basin Water Collaborative, and the forthcoming implementation of a Water Marketing Pilot Program are all moving the Basin forward in drought resilience planning and preparation. The DRC and DBBC feel that the Bank, made possible through this funding, will be the next, and most important step, in sustainably meeting the Deschutes Basin water demands and water management goals. The Bank will provide a mechanism to meet the demands of the Basin, implement the Habitat Conservation Plan (HCP) and in doing so, provide reliable water for agriculture and municipalities, while restoring critical stream flows – particularly during significant drought conditions.

We support the DRC, DBBC, this proposal, and the establishment of the Water Bank of Central Oregon.

Thank you for your consideration.

Kyle Gorman

Kyle Gorman
Region Manager – Oregon Water Resources Department

Deschutes Basin Board of Control

September 27, 2021

To: Bureau of Reclamation grant review team

The Deschutes Basin Board of Control (DBBC), comprised of eight Irrigation Districts including: Arnold, Central Oregon, Lone Pine, North Unit, Ochoco, Swalley, Three Sisters and Tumalo, provides this Letter of Partnership with the Deschutes River Conservancy (DRC), in support of the DRC's proposal for the 2022 Bureau of Reclamation Drought Resiliency Grant Funds to create and sustain the Water Bank of Central Oregon.

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 DRC is an Oregon not-for-profit corporation dedicated to improving water quantity and quality in the Deschutes Basin through the use of market-based mechanisms. Cooperatively, these two organizations, as well as the individual Districts themselves, have pursued and implemented numerous water efficiency, habitat improvement, and conservation projects. The Districts have also included Drought Resiliency measures in the development of their Water Management and Conservation Plans, and are currently aggressively working on conservation measures related to a recently-signed Habitat Conservation Plan

The DBBC and DRC see the development of a Water Bank as the logical and necessary next step to facilitate the expansion of incentive-based tools to voluntary reallocate water in drought years with transparency, accountability and sufficient assurances for participating irrigation districts and district patrons.

Managing water to balance in and out of stream needs during a drought requires the flexibility to move water between users and uses in a transparent, efficient way that protects water rights. This proposal asks for funding to develop a Central Oregon Water Bank to catalyze flexibility and meet Central Oregon's needs in the face of drought and long-term water supply uncertainty. Developing a water bank involves:

1. Data: widespread, accurate, real-time measurement of flows, diversions, and water use paired with forecasting tools and reservoir, surface water, and groundwater models.

2. Collaborative Institutional Arrangement: a "water bank" that serves as the hub where data, forecasts, and models are deployed to design and adaptively implement voluntary movement of water between users and uses as conditions dictate.

3. Tools: a suite of policy and water management tools, agreements, and other relevant approaches that the water bank can use to facilitate moving water and adaptively managing for drought and long-term scarcity and uncertainty (note, existing tools will be used where possible, new tools may be considered/proposed that fill gaps related to the basin's specific needs).

Box 919 - Madras, OR 97741

DBBC 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 -Craig Horrell, 541-548-6047; chorrell@cod.org

4. Governance: collaborative and representative water bank oversight to guide transactions and enhance credibility and trust in the data, institution, and overarching purpose of the water bank.

Specifically, this partnership endeavors to achieve this resilience to drought conditions through operation of the Bank, and resulting in the following:

l. Secure and maintain a reliable and affordable supply of water to sustain agriculture

2. Secure and maintain improved instream flows and water quality to support fish and wildlife

3. Secure a safe, affordable, and high-quality water supply for urban communities within the Basin.

The DBBC welcomes this partnership and the support it brings for a more drought resilient basin and water supply.

Sincerely,

Craig Horrell
DBBC President