

REQUEST FOR PROPOSALS

Hyporheic Study of Hanford Reach of the Columbia River

Confederated Tribes of the Umatilla Indian Reservation
Energy and Environmental Sciences Program
Department of Natural Resources

CONTRACTORS INVITED TO SUBMIT A PROPOSAL: **All individuals with and without Indian preference.**

Section 1 Point of Contact Sheet:

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Critical Dates

RFP Issued:	March 06, 2024
Clarification Request Deadline:	March 29, 2024
Proposal Submission Deadline:	April 8, 2024, 5:00 pm PST
Award Selection Notification (est.):	April 23, 2024
Target Project Start (est.):	May 21, 2024
Target Project Deadline:	September 31, 2025

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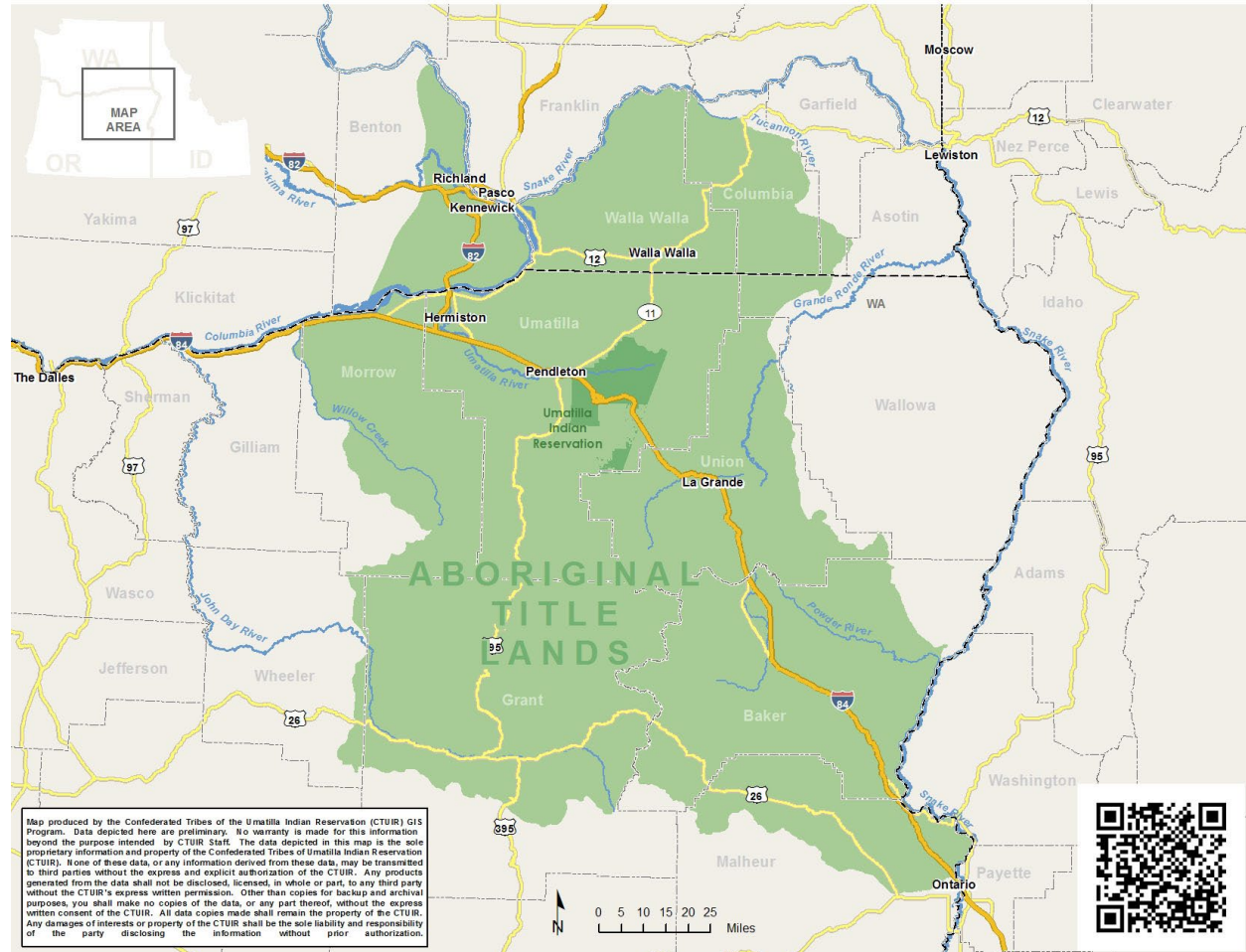
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Section 2 Background and Project Purpose

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) is in northeastern Oregon. Figure 1 shows the Aboriginal Title Lands and current Reservation boundaries.

Figure 1. Aboriginal Title Lands (CTUIR GIS Program)



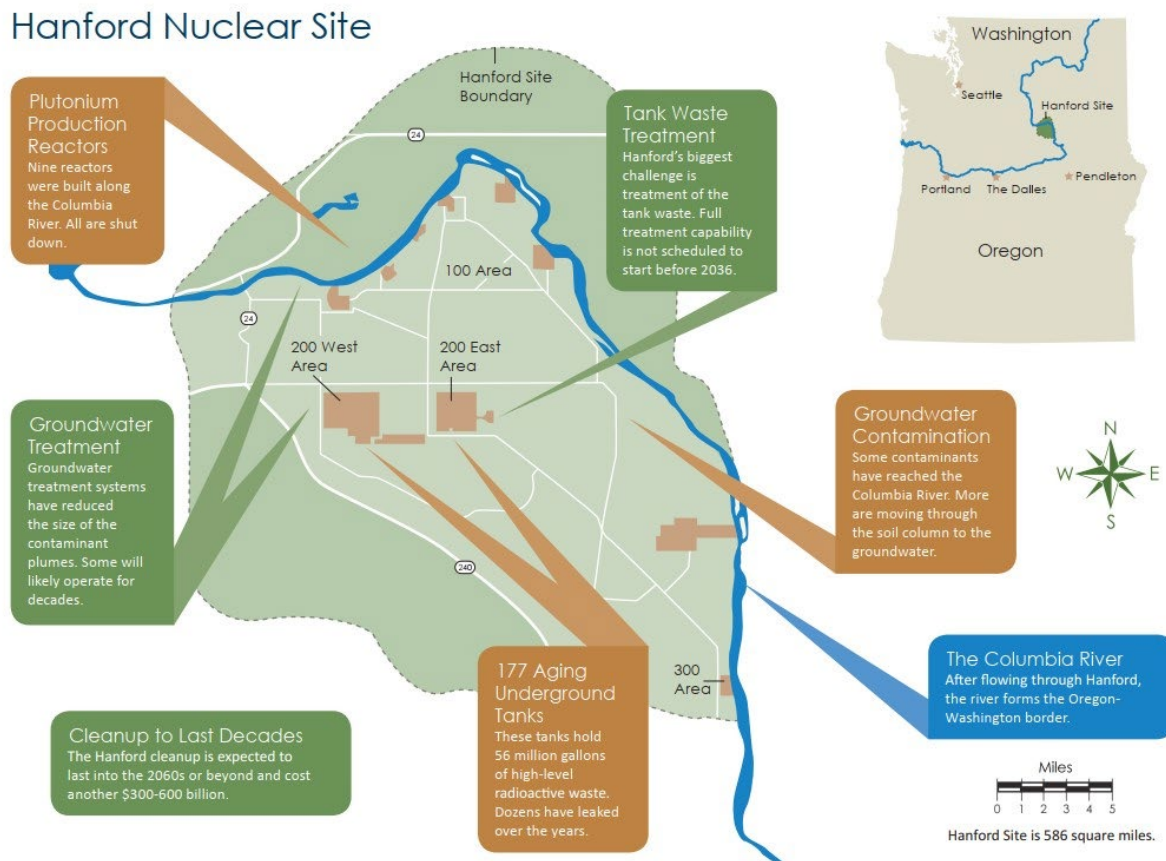
In 2007, the CTUIR Department of Natural Resources (DNR) adopted the following mission:

To protect, restore, and enhance the First Foods – water, salmon, deer, cous, and huckleberry – for the perpetual cultural, economic, and sovereign benefit of the CTUIR. We will accomplish this utilizing traditional ecological and cultural knowledge and science to inform: 1) population and habitat management goals and actions; and 2) natural resource policies and regulatory mechanisms.

To aid in achieving the mission, the CTUIR River Vision (Jones et. al, 2008) and Upland Vision (Endress et. al, 2019) describe the necessary touchstones for ensuring healthy, resilient, and dynamic ecosystems for the benefit of the First Foods. The documents describe the reciprocity and connectivity of these systems and the necessity to manage both uplands and the river system for First Foods which support a healthy functioning river.

The CTUIR is initiating a study that will focus on characterizing how contamination from the Hanford Site (Figure 2) are affecting First Foods that utilize the hyporheic zone (i.e., the saturated area or ecosystem beneath the bed of a river or stream that supports invertebrate fauna) of the Columbia River. This effort aims to demonstrate river and upland connectivity and understand the impact from upland contamination on the river environment, which will protect the Tribes' treaty-reserved resources. Primary components of the study will include the development of predictive flow, fate, and transport simulations using the most current P2R model and the collection and analysis of samples from the Hanford Site's hyporheic zone to assess genotoxicity impacts from radionuclide upwelling.

Figure 2. Map of Hanford Nuclear Site (Oregon Department of Energy)



This Request for Proposal (RFP) solicits proposals from various candidate organizations and provides the information necessary for proposal development. A fair and extensive evaluation of proposals will be conducted based on the criteria and review processes listed herein. The candidate that submits the highest scoring proposal and who best represents the goals and objectives of the CTUIR will be selected.

Section 3 Proposal Guidelines

This RFP represents the requirements for an open and competitive process. Proposal submissions to the address on the Point of Contact Sheet (POCS) on the cover of this RFP will be accepted by mail, email, and fax until the Proposal Submission Deadline (date and time) shown. Any proposals received after this date and time will not be reviewed; the sender will be

notified as such. Submission of a proposal constitutes the contractor's affirmation that all terms and conditions contained in the proposal constitute a binding offer that shall remain firm for a period of ninety (90) days from the Proposal Submission Deadline. All proposals must be signed by an official agent or authorized representative of the contractor submitting the proposal.

The CTUIR shall not be held liable for any expenses incurred by RFP respondents prior to and during the selection process. This includes and is not limited to, preparing and submitting proposals and participating in contract negotiations.

Contractors must submit written requests for clarification, in email, by the Clarification Request Deadline on the cover of this RFP. The CTUIR will not consider any requests submitted after the time period specified. Questions regarding this RFP and/or requests for clarification shall be sent to the administrative contact listed in the POCS. All respondents will be given access to CTUIR responses to questions. CTUIR may request clarification from RFP respondents on any portion of their proposal during the evaluation period.

If the organization submitting a proposal must subcontract any work to meet the requirements contained herein, it must be clearly stated in the proposal. Additionally, all costs included in the proposal must be all-inclusive for any work that will be subcontracted. Any proposals that call for subcontracting work must include the name and description of the organization(s) being subcontracted, or clearly describe the approach that will be implemented for hiring subcontractor(s) following project initiation. See RFP Section 0 (Subcontracting Process) for details.

Proposals must contain all information requested in this RFP. The CTUIR will not consider additional information submitted after the Proposal Submission Deadline and may reject incomplete proposals. Refer to RFP Section 8 for specifics regarding proposal submission.

Contract terms and conditions will be negotiated upon selection of the winning bidder for this RFP. All contractual terms and conditions will be included in a Professional Services Agreement (template attached) subject to review by the CTUIR Office of Legal Counsel.

Required Proposal Components:

1. Cover Letter
2. Executive Summary
3. Respondent Background and Qualifications - Individuals (e.g., consultants), organizations, and teams shall describe, at a minimum:
 - a) ownership structure
 - b) quantity of staff (part time and full time)
 - c) contractor/project partner network
 - d) area(s) of expertise and experience with similar projects
 - e) length of time in the industry
 - f) financial stability.
4. Scope Statement and Approach: Provide a plan for how the project would be performed and discuss the work for each scope task, respective deliverables, assumptions, and constraints. The level of detail should be sufficient for reviewers to assess the feasibility of the proposed approach and gauge the bidder's level of project understanding. This RFP intends for the contractor to design the study (see Task 3 in Section 3).

5. Schedule: Provide a Gantt Chart or similar figure indicating the relative order of execution and duration of each project activity. Refer to RFP Section 5 (RFP and Project Timeline) for additional information.
6. Budget: The project budget must include all individual costs with a clear description summarized on a per task basis. Refer to RFP Section 6 (Budget) for additional information.
7. Project Team - Specifically for staff that make up the project team, respondents shall provide, at a minimum:
 - a) biosketch and/or resume
 - b) respective project roles
 - c) full-time equivalents (FTEs) respective staff will dedicate to the project. Communications protocol that will be employed by project staff (internally, with project stakeholders, etc.) should also be addressed.
8. Quality Assurance Statement: Provide a description of the protocols, measures, and processes that will be implemented to ensure all final deliverables are completed to the highest degree of quality possible.

Section 4 Project Scope

This project aims to understand how the contaminated areas on the Hanford Site affect First Foods that utilize the hyporheic zone. Reports and studies conducted thus far have demonstrated that contamination from the Hanford Site is present in the Columbia Plateau, but there is limited information on the upwelling of contamination to the Columbia River. This study aims to overcome this challenge and data uncertainty by demonstrating connectivity between the Hanford Site uplands and the Columbia River using biological and inorganic sampling and data analysis.

In addition to studying connectivity, the project will also examine the potential role of groundwater upwelling and storage as a necessary tool for surface water cooling and nutrient transport to the hyporheic zone.

The hyporheic study should accomplish the following goals:

1. Establish upland to Columbia River connectivity at the Hanford Site.
2. Demonstrate the applicability of the Hanford P2R Model for this study.
3. Examine the potential role of groundwater upwelling and storage as a necessary tool for surface water cooling and nutrient transport to the hyporheic zone.
4. Establish potential impacts of contamination on aquatic hyporheic microorganisms that support First Foods and/or establish potential impacts of contamination on Aquatic First Foods, including lamprey, mussels, resident fish, and salmonids, within the Columbia River.

Project Tasks

The hyporheic study will include the following tasks.

Task 1 – Administration and Task Management

1. Adhere to the Hanford Site technical and physical safeguard policies.
2. Submit progress reports and updates to the project committee monthly.
3. Inform the project team of changes to project plans or timeline promptly.
4. Coordinate with the internal team for regular reviews and feedback implementation.
5. Maintain all necessary documentation, licensing, and permits through the project duration as required.
6. Ensure strict confidentiality and data protection throughout the project.

Task 2 – Hanford P2R Model Review

The Plateau to River (P2R) Model is a groundwater flow and contaminant fate and transport simulation model developed to support remedial activities at the Hanford Site. The development and calibration of the most current P2R Model are documented in CP-57037, *Model Package Report: Plateau to River Model Version 8.3* (CH2MHILL 2020). The selected contractor will review the Hanford P2R Model and verify its applicability and completeness for tracking contamination from the central plateau to the Columbia River. This will include identifying and reporting on the criteria necessary to update the model.

The review will be performed through the lens of the CTUIR River Vision (Jones et. al, 2008) and Upland Vision (Endress et. al, 2019) and will evaluate the model's applicability for a) characterizing the connection between the central plateau and the Columbia River, and b) predicting the impacts of contaminated areas on First Foods.

Task 3 – Examination of Groundwater Upwelling and Storage

After the Hanford P2R Model Review, there will be an in-depth examination conducted by the contractor to study the role of groundwater upwelling and storage in supporting surface water cooling and nutrient transport to the hyporheic zone. This task requires a comprehensive analysis that incorporates findings from various literature sources, including but not limited to Arrigoni et al. (2008), Jones et al. (2008), Poole et al. (2004), and the recent work by Suffridge et al. (2023).

The contractor will also review DOE and Washington Ecology methods of tracking and managing contaminant flow, and ongoing CTUIR river management projects that utilize the River Vision and Upland Vision. The temperature impact of using the hyporheic exchange as a management tool will be tracked in this review. This data analysis will identify differences in management scenario outcomes and impacts between the DOE/Ecology and CTUIR for the Columbia River. The contractor will evaluate the relevance of groundwater upwelling and storage mechanisms at the Hanford Site and their impact on the Columbia River's health, particularly concerning First Foods.

Task 4 – Study Design and Sampling and Analysis Plan

Following the Hanford P2R Model Review and Examination of Groundwater Upwelling and Storage, the contractor will develop a Study Design and a Sampling and Analysis Plan (SAP) in collaboration with CTUIR. The SAP should include the contractor's proposed Quality Assurance and Assessment Program (QAAP).

The Study Design will focus on modeling and data analysis efforts to best accomplish the goals of this hyporheic study. The Study Design must include project milestones with target completion dates. The SAP will outline data and sample collection efforts for this study and must follow U.S. Environmental Protection Agency (EPA) guidelines.

A proposed project schedule, including key milestones, is required for this task.

Task 5 – Predictive Flow Simulations in MODFLOW

The contractor will use the most current version of the Hanford P2R Model, if determined to be applicable in Task 2, to develop predictive fate and transport simulations of select contaminants from the central plateau to the Columbia River. Contaminants of interest must include but are not limited to, the radionuclides carbon-14 [C-14] and technetium [Tc-99].

1. Use the current P2R Model to characterize the fate and transport of radionuclides in groundwater from multiple sources within a downgradient reach.
2. Use MODFLOW/MT3DMS software and sampling results as needed for predictive groundwater flow, fate, and transport simulations with the P2R Model to meet the project goals.
3. Validate the model using samples collected from upwelling sites (see Task 4).

Task 6 - Data and Sample Collection

Contractors will collect data and samples from the Hanford Site's hyporheic zone to assess genotoxicity impacts from radionuclide upwelling, specifically from releases that have occurred since 1986, in the Columbia River and compare to zones upriver and downriver from the Hanford reach. Other mutagenetic contaminants may also be considered as necessary in order to categorize different rates of movement through the exchange zone.

1. Adhere to EPA field sampling guidelines.
2. Collect samples from both upriver and downriver sites.
3. Ensure a sufficient number of upwelling sites to validate the model's characterization of connectivity between the central plateau and the Columbia River. The number of sites chosen should achieve statistical significance of the data.
4. Collect biological samples to demonstrate DNA damage to organisms in the hyporheic zone and Columbia River. Biological samples may include, but are not limited to, hyporheic microorganisms, lamprey, mussels, resident fish, and salmonids, emphasizing hyporheic zone species that impact First Foods and First Foods species.

Task 7 – Data Analysis

Contractor will determine laboratory and data analysis methods to be used for samples collected in Task 6.

Contractor is responsible for completing any necessary laboratory analysis for samples collected in Task 6.

Contractor will use methods like the comet assay to detect DNA damage in local organisms, such as lamprey, mussels, resident fish, and salmonids, emphasizing hyporheic zone species and First Foods species.

Contractor will develop necessary modeling criteria and update the model for predicting contaminant behavior and impacts on natural resources including First Foods.

All data results and data products should be made available to CTUIR.

Task 7 - Publication

Results from this study must be useful and publishable to enter this study into the administrative record. This task includes producing any publications that result from the study. Publications that focus on CERCLA-related aspects of the study are a desired outcome from this study. At a minimum the study results must be published on the DOE Science Exchange website.

1. Submit a Draft Hyporheic Study Report for review.
2. Submit a Final Hyporheic Study Report for administrative record.
3. Collaborate with CTUIR to draft a peer-reviewed publication.

Task 8 – Permitting

Contractor will be responsible for compliance with all applicable regulations throughout the study. These may include, but are not limited to, NEPA, ESA, AAHPA, Section 404 and 401, and any applicable Hanford Site requirements.

Contractor will be responsible for obtaining any permits required for sampling efforts. Contractor will also be required to coordinate sampling events with CTUIR cultural resources staff as needed. CTUIR will be responsible for obtaining any permits internal to CTUIR.

Deliverables

Table 1 summarizes the deliverables to be produced through completion of the tasks within the Project Scope.

Table 1. Hyporheic Study Deliverables

Task	Associated Deliverable(s)
1	<ul style="list-style-type: none"> • Monthly Progress Reports
2	<ul style="list-style-type: none"> • Documented Hanford P2R Model Review • Model Update Criteria Report
3	<ul style="list-style-type: none"> • Study Design and Proposed Schedule • Sampling and Analysis Plan • Quality Assurance Assessment Program
4	<ul style="list-style-type: none"> • Predictive Flow, Fate, and Transport Simulations Report
5	<ul style="list-style-type: none"> • Data Packages and Laboratory Reports
6	<ul style="list-style-type: none"> • DNA Damage Report
7	<ul style="list-style-type: none"> • Draft Hyporheic Study Report • Draft Contaminant Model Update • Final Hyporheic Study Report • Peer-Reviewed Publication
8	<ul style="list-style-type: none"> • Permit Applications (as required)

Subcontracting Process

In cases where the selected prime contractor will solicit services from qualified subcontractors, the prime shall use an RFP developed with CTUIR input. A complete subcontractor RFP packet will also be prepared and provided to the CTUIR for consideration. Complete subcontractor RFP packets will contain the subcontractor RFP, no less than three (3) acceptable (i.e., complete) respondent proposals along with companion scores and reviewer notes, plus a written summary of proposal scores with selection recommendation for CTUIR consideration. Written authorization from the CTUIR must be provided before subcontractor costs are incurred.

Section 5 Timeline

RFP Timeline

The closing date for proposal submissions will be **April 5, 2024, 5:00 pm Pacific Standard Time (PST)**. Evaluation of proposals will be conducted within two (2) weeks of the Proposal Submission Deadline. If additional information or discussions are needed with any bidders during the proposal evaluation period, those bidder(s) will be notified.

The winning bidder will receive a Tentative Award Selection Notification issued no later than the date indicated on the cover of this RFP. Bidders not selected will be notified within two (2) weeks of the Award Selection Notification date. Upon notification, contract negotiations with the winning bidder will begin immediately and conclude as soon as practically possible with intent to initiate project work no later than the Target Project Start Date indicated on the cover of this RFP. The CTUIR may terminate negotiations with the highest ranked bidder if a mutually agreeable contract is not completed within a reasonable timeframe. The CTUIR will then enter into negotiations with other RFP respondents in order of next highest-ranking proposal. However, if negotiations continue to fail, the CTUIR may formally terminate the solicitation.

Project Timeline

Project work is anticipated to begin **May 2024, with completion by September 31, 2025.**

The Target Project Start Date has been set in consideration of the RFP process and internal contracting procedures as set forth in CTUIR Fiscal Management Policy Part VII (Procurement). The Target Project Deadline was set based on the estimated amount of time required to complete all scope tasks.

Section 6 Budget

There is no award ceiling for this project. All proposals must include individual costs for completing all tasks described in the project scope summarized on a per task basis. Specifically, individual costs to include in proposed budgets for each task are:

1. hourly rates for staff,
2. estimated task completion time (e.g., number of hours),
3. salaries/labor total,
4. travel expenses, and
5. other/miscellaneous expenses (e.g., supplies and materials, overhead, etc.).

Additionally, proposal budgets shall be accompanied by a supplementary budget narrative clearly describing costs associated with each task.

Section 7 Bidder Qualifications

Qualifications of individuals, organizations, and teams responding to this RFP will be evaluated primarily based on proposal content and must be deemed adequate. Using the list of Required Proposal Components found in Section 3, make sure to include the following items where applicable.

- Information on the ability to perform biological and inorganic data analysis, QA/QC, and the associated permitting processes needed for this study.
- Description of experience working with Alaska Native and/or Native American Tribes and culturally sensitive species.
- Proof of successful and timely completion of past projects with scope similar to that of this RFP, including past relevant publications.
- Contact information for at least one past client who may serve as a reference (more are preferred).

Section 8 Proposal Evaluation Criteria and Submission Instructions

Proposals will be evaluated based on the following criteria (100 total points available). Key factors influencing scores include quality and comprehension, feasibility, identification of and solutions to potential challenges and risks, and overall value. The proposal scoring rubric is provided in Table 2.

Table 2. Proposal Scoring Rubric

Proposal Component	Points
Respondent Background and Qualifications	20
Scope Statement and Approach	30
Schedule	10
Budget	10
Project Team	20
Quality Assurance Statement	10
Total Points Available	100

Proposals must be submitted no later than the Proposal Submission Deadline (date and time) PST shown on the cover of this RFP to be accepted. Submit proposals in PDF format electronically via email to the CTUIR administrative contact shown on the cover of this RFP with the subject containing the name of the candidate prime recipient followed by “Response to RFP for Hyporheic Study of Hanford Reach of the Columbia River.

Section 9 References

- Arrigoni, A. S., G. C. Poole, L. A. K. Mertes, S. J. O'Daniel, W. W. Woessner, and S. A. Thomas. 2008. Buffered, lagged, or cooled? Disentangling hyporheic influences on temperature cycles in stream channels. *Water Resources Research* 44:W09418.
- CH2MHILL. February 2020. Model Package Report: Plateau to River Groundwater Model Version 8.3 Revision 2. Prepared for U.S. Department of Energy.

- Endress, B.A., Quaempts, E.J., and Steinmetz, S., 2019. First Foods Upland Vision. Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Department of Natural Resources (DNR).
- Jones, K.L., Poole, G.C., Quaempts, E.J., O'Daniel, S., and Beechie, T., 2008. The Umatilla River Vision. Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Department of Natural Resources (DNR).
- Poole, G. C., J. B. Dunham, D. M. Keenan, S. T. Sauter, D. A. McCullough, C. Mebane, J. C. Lockwood, D. A. Essig, M. P. Hicks, D. J. Sturdevant, E. J. Materna, S. A. Spalding, J. Risley, and M. Deppman. 2004. The case for regime-based water quality standards. *Bioscience* 54:155-161.
- Suffridge, C. P., Shannon, K. C., Matthews, H., Johnson, R. C., Jeffres, C., Mantua, N., Ward, A. E., Holmes, E., Kindopp, J., and Colwell, F. S. 2024. Connecting thiamine availability to the microbial community composition in Chinook salmon spawning habitats of the Sacramento River basin. *Applied and Environmental Microbiology* 90: e01760-23.