



January 12, 2021

Subject: Request for Information (RFI) for applying NASA capabilities to address water management needs in the Columbia River Basin

The Jet Propulsion Laboratory (JPL) is a Federally Funded Research and Development Center (FFRDC) managed for NASA by Caltech. JPL is a unique national research facility that carries out robotic space and earth science missions by implementing programs in planetary exploration, earth science, space-based astronomy and technology development while applying its capabilities to technical and scientific problems of national significance.

## 1.0 Background

The NASA Western Water Applications Office (WWAO), <https://wwao.jpl.nasa.gov> headquartered at the JPL, is requesting interested parties to describe their processes, technical capabilities, and demonstrated experience in applying NASA capabilities to address water management needs in the Columbia River Basin.

- 1) The WWAO's mission is to support advances in water management in the western U.S. through the use of NASA data, technology, and tools in partnership with water managers and decision makers. In 2019, the WWAO conducted a Needs Assessment for the Columbia River Basin that identified high priority data gaps and information needs for water resources management in the Basin at [https://wwao.jpl.nasa.gov/documents/10/Water\\_Needs\\_Assessment\\_Report\\_-\\_Columbia\\_River\\_Basin\\_-\\_2020.pdf](https://wwao.jpl.nasa.gov/documents/10/Water_Needs_Assessment_Report_-_Columbia_River_Basin_-_2020.pdf)
- 2) This assessment highlighted 14 specific data needs and associated use cases related to management of water resources for agriculture, monitoring and management of water quality and water supplies, and assessment of watershed health.

Many water managers recognize the value of NASA's remote-sensing research and data for decision support, but they also find it challenging to use operationally. In many cases, water management office/agencies may lack the scientific and technical resources to access, process, or analyze the information for decision-making. The WWAO seeks to bridge this gap by developing needs-driven solutions.

Through this Request for Information (RFI), the WWAO is seeking descriptions from qualified entities on current and planned activities to develop or deploy tools and services that use NASA data and technologies that could address the specific data gaps and high priority information needs identified in the 2019 Columbia River Needs Assessment. Examples of projects that are a priority for the RFI include: management of water supply, monitoring water use, understanding water quality and watershed health.

## 2.0 Scope

The activities described in each RFI response should address a water-resource management challenge and may range from water management for individual fields to the full Columbia River Basin. The activities described may include, but are not limited to:

1. Workshops and meetings to develop partnerships, refine remote sensing application concepts and user requirements, system architecture plans, and develop/evaluate early prototypes;
2. Applied research to quantify the uncertainty of remote sensing derived data products specifically for the Columbia River Basin to verify that new data products meet end user specifications and requirements;
3. Applied research and software engineering to advance the Applications Readiness Level (ARL) of a NASA information product, technology, or tool that supports water-resource management in the Columbia River Basin;
4. Integration of a remote sensing variable(s) into an existing Columbia River Basin water management decision support tool or workflow; or,
5. Focused workshop(s) and outreach activities to advance information products or technologies to sustained use by water resources decision makers in the Columbia River Basin.

Responses to the RFI are due on **February 26, 2021**. All RFI's will be reviewed by the WWAO Program Management Organization and the Acquisition Organization to determine the activities that are highly aligned with the programmatic objectives described in this RFI. These RFI's could lead to RFPs and eventually to Subcontracts in the range of \$25K to \$100K with a period of performance of one (1) year.

## 3.0 Requirements for Responses

Responses to this RFI should:

3.1 Describe concepts that apply NASA data and technology to address data and information needs for water management in the Columbia River Basin. Responses should clearly reference high priority needs and user requirements described in the WWAO Columbia River Basin Needs Assessment Report.

3.2 Clearly identify (i) the data or information need to be addressed; (ii) the NASA data or technology that will be used in the solution; (iii) the operational partner role and responsibilities for water-resource management in the Columbia River Basin; (iv) the role of the operational water-resource management partner in the proposed project, and, (v) the water-resource management decisions that are targeted by the solutions concept.

3.3 Clearly articulate past experience working with NASA data.

3.4 RFI responses where the respondent already has ties to water management organizations in the Columbia River Basin are of strong interest.

3.5 All responses require one or more letters of support from the water management partner entity that include a description of expected benefits for their agency.

3.6 Describe a concept that is currently at an ARL of 2 or higher. Detailed descriptions of NASA ARLs are available at:  
<https://www.nasa.gov/sites/default/files/files/ExpandedARLDefinitions4813.pdf>

3.7 Describe a scope of work that would advance a solution concept or application by at least one ARL.

3.8 Responders are asked to identify the current ARL of the solution concept, and the expected ARL of the solution at the completion of the activities described in the RFI response.

Responses should include the following elements:

Element Recommended Page Length

1. Brief description of the water-resource management need and information gap, 0.25 page.

2. A brief summary of the scientific/technical basis for the application concept, NASA data or technology, current ARL level, expected ending ARL, and any past studies to quantify the accuracy of results, 1.0 page.

3. Explanation of how the concept addresses a need identified in the WWAO Columbia River Basin Needs Assessment, 0.5 page.
4. Description of past partnering activities, the role of the partner agency, and the significance and impact of the work, 0.25 page.
5. Description of expertise using NASA data and/or technology, 0.25 page.
6. A description of how the concept will impact water management if the need is met, 0.25 page.
7. A notional workplan and schedule, listing key milestones and deliverables, 0.25 page.
8. A high level budget summary and description of cost-sharing by the water management partner, 0.25 page.
9. Relevant past experience, 1.0 page.
10. Total 4.0 pages

The requested information is for preliminary planning purposes only and does not constitute a commitment implied or otherwise, that JPL will solicit you for such procurement in the future. Neither JPL nor the Government will be responsible for any costs incurred by you in furnishing this information.

Perspective subcontractors are advised that any information provided shall be deemed to be furnished with unlimited rights to JPL with JPL assuming no liability for the disclosure, use or reproduction of such data.

Please provide the requested information by **February 26, 2021** via email mail to:

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- JPL Project Acquisition Manager, [Glenn.E.Campbell@jpl.nasa.gov](mailto:Glenn.E.Campbell@jpl.nasa.gov)

Sincerely,

*Glenn E. Campbell*

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