



## Northwest Biosolids

### Invitation to Submit Research Project Proposals

#### Quantifying Climate Change Benefits of Biosolids or Quantifying Economic Benefits of Biosolids

#### INTRODUCTION

Northwest Biosolids is expanding its research portfolio and is announcing this funding opportunity to better understand 2 key areas of interest to our membership:

1. Quantifying climate change benefits of biosolids recycling programs
2. Quantifying economic benefits of biosolids recycling programs

Our Board of Directors has committed an additional \$75,000 to our research grant program and is accepting biosolids research project proposals for consideration through **September 9, 2022**.

[Northwest Biosolids'](#) mission is to advance environmental sustainability through beneficial use of biosolids. We strive to:

- be the Pacific Northwest regional voice for biosolids
- share historic and current knowledge and issues
- **advance the knowledge of biosolids management through collaboration with research institutions**
- increase the use of biosolids products and broaden beneficial use markets by understanding community needs.

#### BACKGROUND

Northwest Biosolids has funded research since its inception. In 1987 utilities across the Pacific Northwest banded together to create a unified regional voice for biosolids recycling. In 1993, Northwest Biosolids was incorporated and began pooling resources to partner with local universities to fund research. This access to research allowed Northwest Biosolids to have an informed voice in regulations development and outreach to our communities. For over 30 years, this model of a regional biosolids network has helped to shape regulations, inform best management practices and share practical answers to biosolids use in our region.

#### INTENT

Northwest Biosolids is providing this funding opportunity to existing members (and new members) and their researcher partners that have interest in biosolids and related topics. The intent of this invitation is to expand research into all of our member areas (Alaska, Alberta, British Columbia, Idaho, Oregon, and Washington). This funding is meant to supplement research programs that our members want to pursue. Recent polls with our members indicate that biosolids beneficial use research is their priority, where **quantifying climate change benefits** and **quantifying economic benefits** of biosolids are key areas of interest. These may be topics that you could integrate into your research programs.

While it is anticipated that this invitation for research project proposals will lead to providing funding towards 2 or 3 projects, Northwest Biosolids will only provide funding towards projects that provide best value to our members, as outlined in the Objectives section below. We are seeking proposals in the broad



categories of **Quantifying Climate Change Benefits of Biosolids** and **Quantifying Economic Benefits of Biosolids**. Areas of particular importance to our members, in these areas, cover themes such as:

- Quantifying economic benefits of using biosolids in recovery efforts following climate disasters (e.g., forest fire ravaged land, flood sites, severe drought).
- Economic research on carbon markets for biosolids and securing associated carbon credits.
- Carbon accounting offsets – defining clear, actionable pathways for using biosolids to maximize carbon credits.
- Quantifying the carbon sequestration potential of various biosolids products (dewatered cake, dried pellets, value added blends such as landscaping soils containing biosolids, and biosolids composts) as compared to other soils amendments that do not contain biosolids.
- Examining biosolids cake versus biosolids biochar and dried biosolids pellets in terms of use (e.g., market applicability, performance, financial and logistical considerations).
- Examining new ways to monetize and market the nutrient value in biosolids; using case studies from recycled water markets.
- Quantifying the portion of the economy in the agriculture sector in Northwest Biosolids' member area that is driven by biosolids (quantification of biosolids disposal vs agriculture economic benefits).
- Quantifying financial drivers for farmers or other biosolids users (e.g. community gardens) in terms of localized food production and food security (considering factors such as COVID-19 and supply chain gaps in food and fertilizer imports/exports, declining phosphorus supply, helping farmers be more economically viable, etc.).
- Quantifying benefits for farmers, e.g. increased crop yield or quality vs. conventional amendments/farm practices, decreased water demand/cost savings.
- Quantifying economic benefits and ecological benefits/ecosystem services (e.g., healthy forests contribute to improved air quality, wildlife habitat, improved water quality).

## **RESEARCH PROJECT PROPOSAL SUBMISSIONS**

Submissions should contain enough information to allow a comprehensive understanding of the research project. There is no guarantee that submission of a research project proposal will result in a contract award. **Please arrange submissions as follows.**

**1. Letter of Introduction:** Include the name, title, organization, address, phone number, and email of the Principal Investigator (maximum 1 page).

**2. Response:** Maximum of 6 pages describing the following:

- a. **Executive Summary:** One-page summary of the key features of the project and overall approach to the work. A concise title should be used to describe the project.



- b. **Qualifications & Experience:** Provide the Principal Investigator's qualifications and experience as related to the project proposed. Provide details of research contributions and any related practical applications. Describe how experience gained from past research may be related to the prospective biosolids research. Please include names/affiliations of other key individuals on the project team. Please provide resumes of the PI and other key personnel (2-page maximum for each resume); resumes are not counted as part of the 6-page proposal submission.
- c. **Research Objectives/Outline:** State the specific objectives of the proposed research and how it is relevant to Northwest Biosolids' Intent as outlined above. Indicate how the research project is new/different from the current scientific knowledge (i.e., does the research compliment, or duplicate past research projects). Outline the project approach, experimental design and procedures that will be used to achieve the research objectives.
- d. **Quality Assurance (QA):** If the project involves the acquisition of environmental information whether generated from direct measurement activities, collected from other sources, or compiled from computerized databases and information systems, the project research should be done in a structured way, with defined, defensible methods for accepting data. Should the project proposal be considered further, a **QA Project Plan** describing the necessary QA procedures, quality control (QC) activities, and other technical activities and how they will be implemented will be required.
- e. **Deliverables:** Interim and final deliverables are required. Please list the deliverables that will be provided to Northwest Biosolids and describe who will ultimately be responsible for project completion in the unlikely, but possible scenario where a student does not complete their research. Frequency of reporting will be determined based on the research proposed, with agreed upon milestones. Northwest Biosolids will establish a Project Advisory Committee to review and provide comments on deliverables.
- f. **Communications Plan:** Describe how the PI and students communicate and disseminate research results, and describe the approach to sharing research results with Northwest Biosolids and other interested parties. Identify partnerships, or collaborations outside of the university that could be drawn upon. Provide 2 publications and 2 samples of communications materials that have been done under the PI's supervision.
- g. **Project Schedule:** Clearly indicate the duration of the project to final completion, including information on constraints (e.g., in-field research season limited due to climate/access; regulatory requirements/constraints at the proposed field site, if applicable). Please also indicate if there are any deadlines that apply that could impact Northwest Biosolids.
- h. **Financial Request:** Outline the requested Northwest Biosolids funding necessary for project completion. Funding towards projects is anticipated to range from \$15,000 to 25,000 per project. Please describe funding leveraged from other sources. Projects will be funded by Northwest Biosolids as a contract.



## OBJECTIVES AND EVALUATION

The objective of this invitation is to identify potential research projects that align with Northwest Biosolids' mission to advance environmental sustainability through beneficial use of biosolids, as described in the Introduction section. As outlined in the Intent, we are seeking research project proposals in the areas of **Quantifying Climate Change Benefits of Biosolids** or **Quantifying Economic Benefits of Biosolids** that will provide best value to our members.

Scientific rigor/technical merit is of utmost importance in consideration in evaluation of all research project proposals received. Proposals should clearly demonstrate that PI/research project team have sufficient qualifications, resources and support to complete the stated project, and that the research fills a knowledge gap and has a practical application for biosolids generators, regulators and managers.

Additionally, project evaluation will also consider the following in determining 'best value' to Northwest Biosolids members:

- Portability of the research (i.e., examples of PI's visibility/communication of past research results).
- Does the research translate to the Pacific NW context?
- Potential to increase geographic diversity in research projects for our members (Alaska, Alberta, British Columbia, Idaho, Oregon, and Washington). Our current research projects are located mainly in Washington, so research located outside Washington will be most competitive.
- Is the research team willing to conduct outreach and communications directly with stakeholders and the public where applicable?
- Does the project help grow/advance future researchers and professionals?

Finally, it is not an absolute requirement for projects to have matching funds, but projects that leverage other funding sources may be ranked higher. Letters of support are also not mandatory, but may improve project ranking.

Northwest Biosolids wants to hear from you on your thoughts for research in the 2 key areas mentioned above. Northwest Biosolids strives to advance the knowledge of biosolids research in these key areas to benefit municipalities, regulatory agencies, and the general public. If this is of interest to you, please send your electronic submission to Amy Ohlinger, Northwest Biosolids Executive Director, [amy@nwbiosolids.org](mailto:amy@nwbiosolids.org) by 4:00 pm Friday, September 9, 2022.