EPA GREAT LAKES NATIONAL PROGRAM OFFICE

Great Lakes Restoration Initiative 2021 Request for Applications

Great Lakes Biology Monitoring Program: Phytoplankton and Chlorophyll-a Components

FEDERAL AGENCY NAME: Environmental Protection Agency
FUNDING OPPORTUNITY TITLE: Great Lakes Biology Monitoring Program: Phytoplankton and Chlorophyll-a Components
ANNOUNCEMENT TYPE: Request for Applications
FUNDING OPPORTUNITY NUMBER: EPA-R5-GL2022-PC
ASSISTANCE LISTING NUMBER: 66.469

Timeline	
December 10, 2021	Request for Applications (RFA) posted
February 8, 2022	Applications must be submitted to EPA through Grants.gov by 10:59 p.m. Central Time / 11:59 p.m., Eastern Time in order to be considered for funding
March 2022	EPA will begin notifying finalists.
March 2022	EPA will begin making official awards.

INTRODUCTION AND OVERVIEW

This Request for Applications (RFA) solicits applications from eligible entities for a cooperative agreement to be awarded pursuant to the Great Lakes Restoration Initiative ("GLRI" or "Initiative") Action Plan III. Applications are requested for a project to complete sample collection and analyses in support of the Phytoplankton and Chlorophyll-a components of the Great Lakes Biology Monitoring Program (GLBMP).

Under this competition, approximately $3,000,000 may be awarded for one cooperative agreement over approximately five years, consisting of incremental funding of about $600,000 per year. Applications should specify a start date on or around March 1, 2022 and should specify an end date that will allow for the collection, processing, and analysis of the 2022-2026 field seasons. All incrementally funded awards will be subject to the availability of funding, future appropriations, satisfactory performance of work, and other applicable considerations.

The statutory authority of the GLRI to award cooperative agreements is contained in the Clean Water Act, Section 118(c)(7), as amended by Public Law 114-322. The U.S. Environmental Protection Agency (EPA) has authority to award grants and cooperative agreements for planning, research, monitoring, outreach, and implementation projects in furtherance of the GLRI and the Great Lakes Water Quality Agreement. Governmental entities, including state agencies, interstate agencies, Indian tribes, local governments, institutions of higher learning (*i.e.*, colleges

and universities), and non-profit organizations (as defined in 2 CFR Part 200) are eligible to apply for funding under this RFA.

For your convenience, the 2021 RFA for Great Lakes Biology Monitoring Program: Phytoplankton and Chlorophyll-a Components site has information relating to the RFA process. We encourage all applicants to sign up for our mailing list and register with us at Great Lakes News Email List.

COVID-19 Update: EPA is providing flexibilities to applicants experiencing challenges related to COVID-19. Please see the Flexibilities Available to Organizations Impacted by COVID-19 clause in Section IV of EPA Solicitation Clauses.

ACRONYMS AND ABBREVIATIONS

AOR	Authorized Organization Representative
CBI	Confidential Business Information
CFR	Code of Federal Regulations
Chl-a	Chlorophyll-a
CSMI	Cooperative Science and Monitoring Initiative
DBE	Disadvantaged Business Enterprises
DUNS	Data Universal Numbering System
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAQ	Frequently Asked Questions
FON	Funding Opportunity Number
FTE	Full Time Equivalent
FY	Fiscal Year
GL	Great Lakes
GLBMP	Great Lakes Biology Monitoring Program
GLNPO	Great Lakes National Program Office
GLRI	Great Lakes Restoration Initiative
GLWQA	Great Lakes Water Quality Agreement
GSA	General Services Administration
HUC	Hydrologic Unit Code
IDC	Indirect Cost
LOS	Letters of Support
MBE	Minority Business Enterprises
MSI	Minority Serving Institution
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
OGD	Office of Grants and Debarment
PBI	Predominantly Black Institution
Q&A	Question & Answer
R5	Region 5
RFA	Request for Applications
SAM	System for Award Management
SBA	Small Business Administration
SF	Standard Form
SHPO	State Historic Preservation Office
SMDP	Scientific Data Management Plan
STEM	Science, technology, engineering, and math
TCU	Tribal Colleges and Universities
THPO	Tribal Historic Preservation Office
USC	United States Code
UTF	Unicode Transformation Format

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I. APPLICATION INFORMATION

A. PROGRAM GOALS AND OBJECTIVES

The GLRI builds on the prior efforts of federal, state, and local agencies; Indian tribes; businesses; public interest groups; interested citizens; and others to develop a collaborative and comprehensive approach to restoring the Great Lakes. Information about the Initiative can be found at GLRI.us.

This RFA solicits applications from eligible entities for a cooperative agreement to be awarded pursuant to the statutory authorities referenced above and the GLRI Action Plan III. Up to $3,000,000 may be awarded under this RFA over approximately five years, consisting of incremental funding of about $600,000 per year, contingent on the quality of applications received, funding availability, future appropriations, satisfactory performance of work, and other applicable considerations. The assistance listing that applies to this RFA is 66.469. Funding each year is not guaranteed. The application should include an annualized budget and budget detail narrative for the project, and a detailed workplan covering each year of the project.

All projects will be evaluated as described in Section V.

B. PROGRAM ACTIVITIES

Applicants must propose program activities that support the following general goals of the program:

1) the continued documentation of the status and trends of the ecological health of the open waters of the Great Lakes based on phytoplankton community and chlorophyll-a (chl-a) analysis;
2) use of advanced technology-based approaches (*e.g.*, in situ fluorometer and fluoroprobe data, HPLC, flow cytometry, etc.) to monitor the phytoplankton community in ways that complement and supplement taxonomic analyses;
3) assessment of the impacts of changing primary productivity and phytoplankton communities on the lower food web and fish; and
4) special studies for the pelagic lower food web (phytoplankton) coincident with the Cooperative Science and Monitoring Initiative (CSMI)[1] five-year schedule.

These program activities must also support the following objectives:

- Sample Collection and Project Design;
- Phytoplankton Taxonomic Analysis and Biovolume Calculations;

[1]The Cooperative Science and Monitoring Initiative (CSMI) is a joint United States and Canadian effort to provide environmental managers with needed information on each Great Lake. In 2022, CSMI will be focused on Lake Huron. In subsequent years, CSMI will focus on Lake Ontario (2023), Lake Erie (2024), Lake Michigan (2025), and Lake Superior (2026).

- Chlorophyll-a Analysis, Advanced Technology and Fluoroprobe Data Analysis: Data Management;
- Data Interpretation, Statistical Analysis and Report Writing; and
- Applied Research.

Applicants must address each of the objectives in accordance with requirements described below and in Section IV:

Sample Collection and Project Design

Applicants must describe their plans to collect chl-a and phytoplankton samples on all five Great Lakes in spring and summer, starting in spring 2022 through summer 2026. Applicants may request to use the EPA R/V *Lake Guardian* for sample collection. Current GLBMP sampling procedures can be found on the RFA site. Data for *in situ* measurements of chl-a fluorescence are currently collected as part of the EPA Great Lakes Water Quality Monitoring Program surveys; these data will be made available to the applicant for analysis.

In addition, applicants **must** describe how they intend to carry out intensive synoptic assessments of the phytoplankton community, biovolume, and distribution annually on the Cooperative Science and Monitoring Initiative (CSMI) intensive lake.

CSMI Schedule	
2022	Lake Huron
2023	Lake Ontario
2024	Lake Erie
2025	Lake Michigan
2026	Lake Superior

Applicants must describe how they intend to maintain comparability and continuity with historic sampling procedures. Applicants may suggest modifications to current GLBMP sampling procedures with supporting rationale. The supporting rationale should demonstrate how the different sampling procedures will still maintain continuity between historical data and the data collected as part of this project

Phytoplankton Taxonomic Analysis and Biovolume Calculations

Applicants must describe their plans to identify, enumerate, and determine biovolume for phytoplankton. Applicants should document their taxonomic expertise and their capability to hire and train taxonomists. Applicants should demonstrate how they intend to maintain comparability and continuity of taxonomic analysis with historic identifications. Historic taxonomic species lists for phytoplankton and historic analytical techniques can be found in the SOPs posted at the RFA site.

Applicants may suggest modifications to historic taxonomic procedures[2] with supporting rationale. The supporting rationale should demonstrate how the different taxonomic procedures will still maintain continuity between historical data and the data collected under this project.

Once the award has been made and prior to the analysis of any phytoplankton samples, the award recipient will need to demonstrate comparability and consistency with existing species identification procedures.

Chlorophyll-a Analysis

Applicants must describe their plans to analyze water samples for extracted chl-a on board the R/V *Lake Guardian*. Applicants should demonstrate how they intend to maintain comparability and continuity of chlorophyll analysis with historic data sets. Historic analytical procedures can be found at the RFA site. During the first field survey of the project period, applicants will be required to comply with additional training and quality assurance checks under the supervision of EPA technical staff.

Applicants may suggest modifications to chlorophyll analysis with supporting rationale. The supporting rationale should demonstrate how the different analytical methods for chlorophyll determination will still maintain continuity between historical data and the data collected during this project.

Advanced Technology and Fluoroprobe Data Analysis

Applicants must describe their plans to pilot advanced technology approaches to estimate phytoplankton abundance and/or community composition, as well as their plans to compare and incorporate Fluoroprobe data into the phytoplankton monitoring outputs. Applicants should demonstrate how they will employ these datasets to supplement the historic monitoring program data that have included chl-a and phytoplankton taxonomic analysis and biovolume calculations. Applicants should suggest how these analyses fit within their proposed budget, including any relevant information on sampling frequency, location, and depths within the water column for analysis using advanced technology approaches with supporting rationale. Fluoroprobe profile data are already collected at all GLBMP phytoplankton monitoring stations, but rationale should be provided for how these data (in total or for a subset of sites) will be used. The supporting rationale should demonstrate how the data from these analyses will supplement our other datasets and improve our understanding of Great Lakes phytoplankton communities.

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[2]Species lists and historic analytical procedures are available in the current SOPs posted at the 2021 RFA for Great Lakes Biology Monitoring Program: Phytoplankton and Chlorophyll Components site.

DATA MANAGEMENT

Applicants must describe their plans (and capability) to contribute to the management, maintenance, and future enhancements of comprehensive database for phytoplankton data. GLNPO will provide existing database structures as well as GLNPO phytoplankton taxonomic data from 1983 to 2021. The database should be able to incorporate historic data sets as well as data collected during this project.

Applicants may suggest modifications to the existing database structures with supporting rationale. The supporting rationale should demonstrate how different databases will maintain continuity between historical data and the data collected under this project and improve the applicant's ability to assess long-term trends in phytoplankton communities.

An electronic copy of all final verified data shall be transferred to GLNPO in a format that is consistent with data protocols specified in GLNPO SOPs (*e.g.,* Standard Operating Procedure for In Vitro Determination of Chlorophyll-a in Freshwater Phytoplankton by Fluorescence, Standard Operating Procedure for Phytoplankton Analysis).

Applicants must demonstrate how they will submit final verified data within six months for chlorophyll analysis, 18 months for advanced technology analysis, and 18 months of receipt of samples in their laboratory for phytoplankton taxonomic analysis and biovolume calculations (*e.g.*, submit data on all samples collected in August 2022 by March 2024). Applicants should also discuss project elements and processes that allow field and lab data to be efficiently managed and interpreted year-to-year.

DATA INTERPRETATION, STATISTICAL ANALYSIS, AND REPORT WRITING

Applicants must describe their plans to ensure the monitoring and assessment information generated is made available to the Great Lakes community in a wide variety of formats, including peer-reviewed journals and internet products. Applicants are expected to discuss how this dissemination will occur using data collected year-to-year, with a focus on fisheries and water quality managers. Additionally, it is important that any new information generated be placed in a historical perspective so that determinations may be made of how the phytoplankton community is changing over time. The successful applicant is expected to integrate recent and historical data to provide interpretation of changes to the biological communities.

Applicants must demonstrate how they will work with the EPA Project Officer and Technical Contact to report on the status and trends of the phytoplankton community in the Great Lakes in a timely fashion and support the development of ecosystem indicator reports.

Applicants must also discuss how their work will increase understanding of the biological health of the Great Lakes and the implications for ecosystem and fisheries management. The advancement of scientific knowledge may include the development of phytoplankton

community-based indicators, application of ecosystem models, identification of stressor-state relationships, and the further education of graduate students in taxonomy and Great Lakes ecosystem research.

Applied Research

Applicants must discuss how monitoring will be flexible enough to adequately track, monitor, and investigate:

- large scale changes of significant components of the Great Lakes lower food web that are affected by new species invading the Great Lakes;
- fluctuations of the state of the biological community; and
- phytoplankton responses to oligotrophication (decrease in offshore nutrient levels), global climate change, and the rates and mechanisms of herbivory.

Applicants must also discuss how additional special studies and/or enhancements to the long-term monitoring program will be implemented. Applicants must discuss how the monitoring design will contribute to the Cooperative Science and Monitoring Initiative (CSMI).

C. General Environmental Results and Strategic Plan Information

This RFA is expected to result in the award of one cooperative agreement, as appropriate (hereafter collectively referred to as "grant"), to support the GLRI Action Plan III, Focus Area 5 (Foundations for Future Restoration Actions), Objective 5.2. Conduct comprehensive science programs and projects, and Measure 5.2.1 Annual Great Lakes monitoring conducted and used to prioritize GLRI funding decisions.

EPA has authority to award cooperative agreements for planning, research, monitoring, outreach, and implementation projects in furtherance of GLRI and the Great Lakes Water Quality Agreement (GLWQA[3]). Funded activities must advance protection and restoration of the Great Lakes ecosystem in support of: (i) the GLRI Action Plan III and (ii) EPA's Strategic Plan. Projects must also either: (i) protect, enhance, and/or restore the Great Lakes and its connecting river systems (St. Marys River, St. Clair River including Lake St. Clair, Detroit River, Niagara River, and St. Lawrence River at the international boundary or upstream from the point at which this river becomes the international boundary between Canada and the United States); or (ii) protect Great Lakes ecosystem health, including human health. Applications for other activities will be rejected.

The activities to be funded under this solicitation support EPA's Draft FY 2022-2026 Strategic Plan. Awards made under this solicitation will support Goal 5: Ensure Clean and Safe Water for

[3] The principal goal of GLWQA is to restore and protect the chemical, physical, and biological integrity of the Great Lakes ecosystem.

all Communities; Provide clean and safe water for all communities and protect our nation's waterbodies from degradation. and Objective 5.2: Protect and Restore Waterbodies and Watersheds; Address sources of water pollution and ensure water quality standards are protective of the health and needs of all people and ecosystems. All applications must be for projects that support the goals and objectives identified above.

D. OUTPUTS AND OUTCOMES

EPA requires grant applicants and recipients adequately describe environmental outputs and outcomes to be achieved under assistance agreements. Pursuant to Section 6a of EPA Order 5700.7A1, "Environmental Results under EPA Assistance Agreements," EPA must link proposed assistance agreements to the Agency's Strategic Plan.

For purposes of this RFA:

The term "output" means an environmental activity, effort, and/or associated work product related to an environmental goal and objective that will be produced or provided over a period of time or by a specified date. Outputs may be quantitative or qualitative but must be measurable over the term of the grant funding period. Projects should include all of the following and must link to the GLRI Action Plan III Measures of Progress or goals and objectives:

The term "outcome" means the result, effect, or consequence that will be achieved by carrying out an environmental activity, effort, and/or associated work product that is related to an environmental or programmatic goal or objective. Outcomes may be environmental, behavioral, health-related, or programmatic in nature, must be quantitative, and may not necessarily be achievable within a grant funding period. Projects should demonstrate how their proposed project will achieve all the following outputs and outcomes.

OUTPUTS MUST INCLUDE ONE OR MORE OF THE FOLLOWING AND APPLICATIONS MUST LINK PROPOSED OUTPUTS TO THE GLRI ACTION PLAN III MEASURES OF PROGRESS OR GOALS AND OBJECTIVES:

- a quantification of Great Lakes ecosystem health based on analysis of chl-a and phytoplankton community structure and productivity, incorporating both established laboratory methodologies and technology-based approaches;
- an evaluation of the temporal trends of ecosystem health based on phytoplankton communities and chl-a in the Great Lakes;
- development of Great Lakes scientists through the education of graduate and undergraduate students in taxonomy and Great Lakes ecosystem science;
- targeted studies for lake-by-lake assessment of phytoplankton communities coincident with the Cooperative Science and Monitoring Initiative (CSMI) that complements the long-term phytoplankton monitoring program design;

- dissemination of results via peer-reviewed journal articles and other media; or
- development of Great Lakes Water Quality Agreement State of the Great Lakes indicator reports that use data generated through the chl-a and phytoplankton components of the GLBMP.

OUTCOMES SHOULD INCLUDE:

- increased understanding of biological health of the Great Lakes lower food web and the relationship to fisheries and water quality management;
- increased understanding of the spatial and temporal trends of chl-a and phytoplankton to inform Great Lakes Water Quality Agreement Annex 2 Lakewide Action and Management Plans;
- increased understanding of biological health of the Great Lakes;
- surveillance for new aquatic non-native species within the phytoplankton community;
- increased understanding of the impacts of changing nutrient availability (*i.e.*, driven by dreissenid mussel feeding and/or nutrient load changes) on the phytoplankton community; and
- enhancement of indicators, based on chl-a and phytoplankton communities, of the health of the Great Lakes.

E. FUNDING OPPORTUNITY BACKGROUND

The Great Lakes Biology Monitoring Program was established in 1983 to assess the ecological health of the Great Lakes. The program benefits federal, state, and tribal fisheries and water quality managers by focusing on whole lake biotic responses to changes in loads of anthropogenic substances and aquatic invasive species. Sampling is typically focused on the relatively homogeneous offshore waters of each lake. Phytoplankton and chl-a monitoring have been integral parts of the program since its inception. Offshore chl-a concentrations and the community structure of the biota have been rapidly changing in many areas of the Great Lakes in recent decades. More information on the Great Lakes biological monitoring program can be found at EPA's Great Lakes Biology Monitoring Program site.

Chl-a measurement and planktonic algae (*i.e.*, phytoplankton) identification and enumeration have historically provided the information to resource managers that identified nutrient enrichment problems (eutrophication) in surface waters. In the Great Lakes, eutrophication is a problem that has existed at varying levels of severity since the 1960s. Since that time, there have been efforts to control nutrient input to the lakes through improvements in sewage treatment plants, bans on phosphorus in laundry detergents, and improved land management practices to reduce nutrients in runoff. These efforts led to better ecosystem conditions in the lakes. There was a resurgence of algal blooms in Lake Erie in the late 1990s. In recent years, there have been continued changes to the primary productivity and phytoplankton community structure in many regions of the Great Lakes, such as oligotrophication of the offshore waters of lakes Huron,

Michigan, and Ontario. These shifts have been in response to a combination of factors, including reduced nutrient loadings due to the aforementioned regulations, drastic changes to nutrient cycling resulting from dreissenid mussel invasion and expansion in the lakes, and other stressors such as climate change. Tracking these conditions and documenting the changes to the environmental status of the Great Lakes is of critical importance to a broad stakeholder community that includes fisheries managers and water quality managers.

Traditional taxonomic approaches to monitoring phytoplankton communities are important because phytoplankton composition and biomass are strong indicators of water quality and biological condition. Phytoplankton species respond relatively quickly to changes in their environment, making them useful indicators of ecosystem shifts on both short and long timescales. In addition, phytoplankton form the base of the pelagic food web, and tracking both abundance and community composition of the phytoplankton is essential to assess food availability for higher trophic levels. The analysis of phytoplankton community assemblage is a valuable component of monitoring lake ecosystems and tracking changes due to anthropogenic stressors such as nutrient enrichment or depletion, pollution, invasive species impacts, and climate change.

New approaches and techniques for determining phytoplankton community composition have been developed to compliment traditional organism-level sampling strategies and increase spatial and/or temporal resolution of phytoplankton abundance and/or community composition estimates. For example, high-performance liquid chromatography (HPLC) is a rapid and highly sensitive laboratory technique that separates phytoplankton pigments by their size to identify the broad taxonomic groups present in a sample. Identifying phytoplankton communities to taxonomic groupings (diatoms, chlorophytes, chrysophytes, cryptophytes, cyanophytes, and dinoflagellates) using HPLC analysis has the advantage of rapidly informing managers of the diversity of food available for consumers. Phytoplankton sampled with imaging-in-flow cytometry can be used to generate automated taxonomically resolved estimates of phytoplankton abundance. High resolution profile data for phytoplankton community composition can be generated using *in situ* fluorescence techniques that measure not only total chl-a concentration, but also the contributions of various algal groups to the total chl-a signal.

The addition of advanced approaches to phytoplankton abundance estimation, combined with taxonomic analysis of phytoplankton species, chl-a analyses at discrete depths, and fluorescence profile analysis, will improve our understanding of phytoplankton community dynamics over various temporal and spatial scales in the Great Lakes.

EPA is seeking applications for funding to support the Great Lakes Biology Monitoring Program. The funding opportunity will be posted under Funding Opportunity Number (FON) EPA-R5-GL2022-PC on Grants.gov.

F. Statutory Authorization

EPA's statutory authority to award grants and cooperative agreements is contained in the Clean Water Act Section 118(c)(7) as amended by Public Law 114-322 and includes authority to make awards in furtherance of the GLRI International Activities

For projects with international aspects, the above statutes are supplemented, as appropriate, by the National Environmental Policy Act, Section 102(2)(F).

G. Human Subjects Studies

Questions about Human Subjects Studies should be directed to the Human Subjects Research Review Official.

H. Minority Serving Institutions (MSIs)

EPA recognizes that it is important to engage all available minds to address the environmental challenges the nation faces. At the same time, EPA seeks to expand the environmental conversation by including members of communities which may have not previously participated in such dialogues to participate in EPA programs. For this reason, EPA strongly encourages all eligible applicants identified in Section III, including minority serving institutions (MSIs), to apply under this opportunity.

For purposes of this solicitation, the following are considered MSIs:

1. Historically Black Colleges and Universities, as defined by the Higher Education Act (20 U.S.C. § 1061(2)). A list of these schools can be found at Historically Black Colleges and Universities
2. Tribal Colleges and Universities (TCUs), as defined by the Higher Education Act (20 U.S.C. § 1059c(b)(3) and (d)(1)). A list of these schools can be found at American Indian Tribally Controlled Colleges and Universities
3. Hispanic-Serving Institutions (HSIs), as defined by the Higher Education Act (20 U.S.C. § 1101a(a)(5)). A list of these schools can be found at Hispanic-Serving Institutions
4. Asian American and Native American Pacific Islander-Serving Institutions; (AANAPISIs), as defined by the Higher Education Act (20 U.S.C. § 1059g(b)(2)). A list of these schools can be found at Asian American and Native American Pacific Islander-Serving Institutions; and
5. Predominately Black Institutions (PBIs), as defined by the Higher Education Act of 2008, 20 U.S.C. 1059e(b)(6). A list of these schools can be found at Predominately Black Institutions.

I. Additional Provisions For Applicants Incorporated Into The Solicitation

Additional provisions that apply to sections III, IV, V, and VI of this solicitation and/or awards made under this solicitation, can be found at EPA Solicitation Clauses. These provisions are important for applying to this solicitation and applicants must review them when preparing applications for this solicitation. If you are unable to access these provisions electronically at the website above, please contact the EPA point of contact listed in this solicitation (usually in Section VII) to obtain the provisions.

II. AWARD INFORMATION

A. AVAILABLE FUNDING AND PROJECT PERIODS AVAILABILITY

Approximately $3,000,000 in EPA funding is expected to be awarded under this RFA for one project. The maximum award for this award is $3,000,000. **Applications seeking more than $3,000,000 of EPA funding will be rejected**. Any application for a multi-phase project will be treated as one application and the application will be rejected if the combined amount requested for the multi-phase project is more than $3,000,000. EPA expects to provide up to $3,000,000 for one cooperative agreement over a five-year period, consisting of incremental funding of about $600,000 per year.

This anticipated project period for the funding opportunity is approximately five years. This RFA instructs applicants to submit all documentation required for a full and complete funding package so that their projects could, if selected, proceed expeditiously. Applications should specify a start date on or around March 1, 2022 and should specify an end date that will allow for the collection, processing, and analysis of the 2022-2026 field seasons.

B. PARTIAL FUNDING PROVISION

In appropriate circumstances, EPA reserves the right to partially fund applications by funding discrete portions or phases of proposed projects. If EPA decides to partially fund an application, it will do so in a manner that does not prejudice any applicants or affect the basis upon which the application, or portion thereof, was evaluated and selected for award, and therefore maintains the integrity of the competition and selection process.

C. ADDITIONAL AWARDS

EPA reserves the right to make additional awards under this solicitation, consistent with Agency policy and guidance, if additional funding becomes available after the original selections are made. Any additional selections for awards will be made no later than 6 months after the original selection decisions.

D. FUNDING TYPE

EPA intends to award a cooperative agreement under this solicitation. Cooperative agreements provide for substantial involvement between the EPA Project Officer and the selected applicant(s) in the performance of the work supported, technical assistance, network guidance, use of the R/V *Lake Guardian* as appropriate, provision of historic data, evaluation of project progress, and quantification and reporting of results. Although EPA will negotiate precise terms and conditions relating to substantial involvement as part of the award process, the anticipated substantial federal involvement for these projects may include:

- close monitoring of the successful applicant's performance to verify the results proposed by the applicant;
- collaboration during performance of the scope of work;
- in accordance with 2 CFR 200.317 and 2 CFR 200.318, review of proposed procurement;
- approving qualifications of key personnel (EPA will not select employees or contractors employed by the award recipient); and
- review and comment on reports prepared under the cooperative agreement (the final decision on the content of reports rests with the recipient).

EPA does not have the authority to select employees or contractors employed by the recipient. The final decision on the content of reports rests with the recipient.

E. AWARD FUNDING AND INCREMENTAL/FULL FUNDING

Awards may be fully or incrementally funded, as appropriate, based on funding availability, satisfactory performance, and other applicable considerations.

Selection or award of funding under this RFA is not a guarantee of future funding.

III. ELIGIBILITY INFORMATION

NOTE: ADDITIONAL PROVISIONS THAT APPLY TO THIS SECTION CAN BE FOUND AT EPA SOLICITATION CLAUSES.

A. APPLICANT ELIGIBILITY (ASSISTANCE LISTING NUMBER 66.469)

Qualified non-federal entities eligible to apply for grants include non-federal governmental entities, nonprofit organizations, and institutions. This includes state agencies; any agency or instrumentality of local government; interstate agencies; federally recognized tribes and tribal organizations; colleges and universities; non-profit organizations; and other public or non-profit private agencies, institutions, and organizations.

Individuals, foreign organizations and governments, nonprofit organizations exempt from taxation under Section 501(c)(4) of the Internal Revenue Code that engage in lobbying, and "for-profit" organizations are not eligible.

B. THRESHOLD ELIGIBILITY CRITERIA

These are requirements that if not met by the applicant by the time of application submission will result in elimination of the application from consideration for funding. Only applications for eligible activities from eligible entities that meet these criteria by the time of application submission will be evaluated against the ranking factors in Section V of this RFA.

1. Proposed projects **must** either: (i) protect, enhance, and/or restore the Great Lakes and the connecting river systems of St. Marys River, St. Clair River, Lake St. Clair, Detroit River, Niagara River, and St. Lawrence River at the international boundary or upstream from the point at which this river becomes the international boundary between Canada and the United States; or (ii) protect Great Lakes ecosystem health, including human health. Applications for other activities will be rejected.
2. Applicants **must** propose program activities that support the general goals of the program listed in Section I.B. These program activities must also support the objectives and the related requirements as described in Sections I.B (Program Activities) and IV.C.5 (Project Narrative).
3. Applications **must** include one or more of the following outputs and applications **must** link proposed outputs to the GLRI Action Plan III Measures of Progress or goals and objectives:

    - a quantification of Great Lakes ecosystem health based on analysis of chl-a and phytoplankton community structure and productivity, incorporating both established laboratory methodologies and technology-based approaches;
    - an evaluation of the temporal trends of ecosystem health based on phytoplankton communities and chl-a in the Great Lakes;

- development of Great Lakes scientists through the education of graduate and undergraduate students in taxonomy and Great Lakes ecosystem science;
- targeted studies for lake-by-lake assessment of phytoplankton communities coincident with the Cooperative Science and Monitoring Initiative (CSMI) that complements the long-term phytoplankton monitoring program design;
- dissemination of results via peer-reviewed journal articles and other media; or
- development of Great Lakes Water Quality Agreement State of the Great Lakes indicator reports that use data generated through the chl-a and phytoplankton components of the GLBMP.

4. Applications seeking funding in excess of $3,000,000 over the proposed project duration will be rejected. In addition, an application for a multi-phase project will be treated as a request for the full amount for all phases. If that combined amount exceeds the specified maximum, the application will be rejected.

Applicants deemed ineligible for funding consideration as a result of the threshold eligibility review will be notified by email within 15 calendar days of the ineligibility determination.

C. SUBSTANTIAL COMPLIANCE

1. Applications **must** substantially comply with the application submission instructions and requirements set forth in Section IV of this RFA or else they will be rejected. Where a page limit is stated for the Narrative Proposal in Section IV, pages in excess of the page limitation will not be reviewed.
2. In addition, applications **must** be submitted through Grants.gov as stated in Section IV of this announcement (except in the limited circumstances where another mode of submission is specifically allowed for as explained in Section IV) on or before the application submission deadline published in Section IV of this announcement. Applicants are responsible for following the submission instructions in Section IV of this announcement to ensure that their application is timely submitted.
3. Applications submitted after the submission deadline will be considered late and deemed ineligible without further consideration unless the applicant can clearly demonstrate that it was late due to EPA mishandling or because of technical problems associated with Grants.gov or relevant SAM.gov system issues. An applicant's failure to timely submit their application through Grants.gov because they did not timely or properly register in SAM.gov or Grants.gov will not be considered an acceptable reason to consider a late submission. Applicants should confirm receipt of their application as soon as possible after the submission deadline by sending an email to GLRI-RFA@EPA.gov and **put "EPA-R5-GL2022-PC" in the subject of the email**. Failure to do so may result in your application not being reviewed.

D. Ineligible Activities

If an application is submitted that includes any ineligible tasks or activities, that portion of the application will be ineligible for funding and may, depending on the extent to which it affects the application, render the entire application ineligible for funding.

E. Match or Cost-Share

There is no cost-sharing or matching requirement as a condition of eligibility under this RFA.

F. Encouraging Minority Serving Institutions to Compete

EPA recognizes that scientific, technical, engineering, and mathematical (STEM) competence is essential to the Nation's future well-being in terms of national security and competitive economic advantage. For instance, the health and vitality of the economy is predicated, in part, on the availability of an adequate supply of scientists, technicians, engineers, and mathematicians, to develop innovative technologies and solutions. In other words, this country must engage all available minds to address the challenges it faces. Minorities, women, and persons with disabilities historically have been under-represented in the STEM fields. For this reason, EPA strongly encourages all eligible applicants including, women, minorities, and persons with disabilities to apply.

G. Nonprofit Definition

Consistent with the definition of *Nonprofit organization* at 2 CFR § 200.1, the term nonprofit organization means any corporation, trust, association, cooperative, or other organization that is operated mainly for scientific, educational, service, charitable, or similar purpose in the public interest and is not organized primarily for profit; and uses net proceeds to maintain, improve, or expand the operation of the organization. The term includes tax-exempt nonprofit neighborhood and labor organizations. Note that 2 CFR 200.1 specifically excludes Institutions of Higher Education from the definition of non-profit organization because they are separately defined in the regulation. While not considered to be a non-profit organization(s) as defined by 2 CFR 200.1, public or nonprofit Institutions of Higher Education are, nevertheless, eligible to submit applications under this RFA. Hospitals operated by state, tribal, or local governments or that meet the definition of nonprofit at 2 CFR 200.1 are also eligible to apply as nonprofits or as instrumentalities of the unit of government depending on the applicable law. For-profit colleges, universities, trade schools, and hospitals are ineligible.

Nonprofit organizations that are not exempt from taxation under section 501 of the Internal Revenue Code must submit other forms of documentation of nonprofit status; such as certificates of incorporation as nonprofit under state or tribal law. Nonprofit organizations exempt from taxation under section 501(c)(4) of the Internal Revenue Code that lobby are not eligible for EPA funding as provided in the Lobbying Disclosure Act, 2 U.S.C. 1611.

H. COALITIONS

Groups of two or more eligible applicants may choose to form a coalition and submit a single application under this RFA; however, one entity must be responsible for the grant. Coalitions must identify which eligible organization will be the recipient of the grant and which eligible organization(s) will be subrecipients of the recipient (the "pass-through entity"). *Subawards* must be consistent with the definition of that term in 2 CFR 200.1 and comply with EPA's Subaward Policy. The pass-through entity that administers the grant and subawards will be accountable to EPA for proper expenditure of the funds and reporting and will be the point of contact for the coalition. As provided in 2 CFR 200.332, subrecipients are accountable to the pass-through entity for proper use of EPA funding.

For-profit organizations are not eligible for subawards under this grant program but may receive procurement contracts. Any contracts for services or products funded with EPA financial assistance must be awarded under the competitive procurement procedures of 2 CFR Part 200 and/or 2 CFR Part 1500, as applicable. The regulations at 2 CFR 1500.10 contain limitations on the extent to which EPA funds may be used to compensate individual consultants. Refer to the Best Practice Guide for Procuring Services, Supplies, and Equipment Under EPA Assistance Agreements for guidance on competitive procurement requirements and consultant compensation. Do not name a procurement contractor (including a consultant) as a "partner" or otherwise in your application unless the contractor has been selected in compliance with competitive procurement requirements.

IV. APPLICATION & SUBMISSION INFORMATION

NOTE: ADDITIONAL PROVISIONS THAT APPLY TO THIS SECTION CAN BE FOUND AT EPA SOLICITATION CLAUSES.

A. PRE-APPLICATION/APPLICATION ASSISTANCE AND COMMUNICATIONS

In accordance with EPA's Assistance Agreement Competition Policy (EPA Order 5700.5A1), EPA staff will not meet with individual applicants to discuss draft applications, provide informal comments on draft applications, or provide advice to applicants on how to respond to ranking criteria.[4] Applicants are responsible for the contents of their applications/applications. However, consistent with the provisions in the announcement, EPA will respond to questions from individual applicants regarding threshold eligibility criteria, administrative issues related to the submission of the application, and requests for clarification about any of the language or provisions in the announcement. Please note that applicants should raise any questions they may have about the solicitation language to the contact identified in Section VII as soon as possible so that any questions about the solicitation language may be resolved prior to submitting an application. In addition, if necessary, EPA may clarify threshold eligibility issues with applicants prior to making an eligibility determination.

B. PARTNERSHIPS, CONTRACTORS, AND SUBAWARDS

EPA awards funds to one eligible applicant as the recipient even if other eligible applicants are named as partners or co-applicants or members of a coalition or consortium. The recipient is accountable to EPA for the proper expenditure of funds.

Funding may be used to provide subawards of financial assistance, which includes using subawards to fund partnerships, provided the recipient complies with applicable requirements for subawards including those contained in 2 CFR Part 200 and EPA's Subaward Policy. EPA has also posted Additional Resources on Subawards for applicants to consult.

Applicants must compete contracts for services and products, including consultant contracts, and conduct cost and price analyses, to the extent required by the procurement provisions of the regulations at 2 CFR Part 200. Applicants are not required to identify subrecipients and/or contractors (including consultants) in their application. However, if they do, the fact that an applicant selected for award has named a specific subrecipient, contractor, or consultant in the application EPA selects for funding does not relieve the applicant of its obligations to comply with subaward and/or competitive procurement requirements as appropriate. Please note that applicants may not award sole source contracts to consulting, engineering or other firms assisting applicants with the application solely based on the firm's role in preparing the application. For additional guidance applicants should review EPA's Best Practice Guide for Procuring Services, Supplies, and Equipment Under EPA Assistance Agreements.

[4] In accordance with EPA's Assistance Agreement Competition Policy, EPA Order 5700.5A1 and EPA Solicitation Clauses.

Successful applicants cannot use subawards to avoid requirements in EPA grant regulations for competitive procurement by using these instruments to acquire commercial services or products from for-profit organizations to carry out its assistance agreement. The nature of the transaction between the recipient and the subrecipient must be consistent with the standards for distinguishing between vendor transactions and subrecipient assistance found at 2 CFR 200.331, the definitions of Subaward and Subrecipient at 2 CFR 200.1, and Appendix A to EPA's Subaward Policy. EPA will not be a party to these transactions. Applicants acquiring commercial goods or services must comply with the competitive procurement requirements in 2 CFR 200.319 and 2 CFR 200.320 and cannot use a subaward as the funding mechanism.

Section V of the announcement describes the evaluation criteria and evaluation process that will be used by EPA to make selections under this announcement. During this evaluation, except for those criteria that relate to the applicant's own qualifications, past performance, and reporting history, the review panel will consider, as appropriate and relevant, the qualifications, expertise, and experience of:

(i) an applicant's named subrecipients identified in the application if the applicant demonstrates in the application that if it receives an award that the subaward will be properly awarded consistent with the applicable regulations in 2 CFR Part 200. For example, applicants must not use subawards to obtain commercial services or products from for profit firms or individual consultants.

(ii) an applicant's named contractor(s), including consultants, identified in the application if the applicant demonstrates in its application that the contractor(s) was selected in compliance with the competitive procurement requirements in 2 CFR 200.319 and 2 CFR 200.320. For example, an applicant must demonstrate that it selected the contractor(s) competitively or that a proper non-competitive sole-source award consistent with the regulations will be made to the contractor(s), that efforts were made to provide small and disadvantaged businesses with opportunities to compete as provided in 40 CFR 33.301, and that some form of cost or price analysis was conducted. EPA may not accept sole source justifications for contracts for services or products that are otherwise readily available in the commercial marketplace.

EPA will not consider the qualifications, experience, and expertise of named subrecipients and/or named contractor(s) during the application evaluation process unless the applicant complies with these requirements. For additional guidance applicants should review EPA's Best Practice Guide for Procuring Services, Supplies, and Equipment Under EPA Assistance Agreements.

C. GRANTS.GOV SUBMISSION INSTRUCTIONS

REQUIREMENT TO SUBMIT THROUGH GRANTS.GOV AND LIMITED EXCEPTION PROCEDURES

Applicants must apply electronically through Grants.gov under this funding opportunity based on the grants.gov instructions in this announcement. If your organization has no access to the internet or access is very limited, you may request an exception for the remainder of this calendar year by following the procedures outlined here. Please note that your request must be received at least 15 calendar days before the application due date to allow enough time to negotiate alternative submission methods. Issues with submissions with respect to this opportunity only are addressed in section *c. Technical Issues with Submission* below.

SUBMISSION INSTRUCTIONS

The electronic submission of your application must be made by an official representative of your institution who is registered with Grants.gov and is authorized to sign applications for Federal assistance. For more information on the registration requirements that must be completed in order to submit an application through grants.gov, go to Grants.gov and click on "Applicants" on the top of the page and then go to the "Get Registered" link on the page. If your organization is not currently registered with Grants.gov, please encourage your office to designate an Authorized Organization Representative (AOR) and ask that individual to begin the registration process as soon as possible. Please note that the registration process also requires that your organization have a DUNS number and a current registration with the System for Award Management (SAM) and the process of obtaining both could take a month or more. Applicants must ensure that all registration requirements are met in order to apply for this opportunity through grants.gov and should ensure that all such requirements have been met well in advance of the submission deadline. Registration on Grants.gov, SAM.gov, and DUNS number assignment is FREE. Please see RAIN-2021-G01 for information about EPA's implementation of the upcoming Government-wide transition from DUNS to Unique Entity Identifier (UEI).

Applicants need to ensure that the AOR who submits the application through Grants.gov and whose DUNS is listed on the application is an AOR for the applicant listed on the application. Additionally, the DUNS listed on the application must be registered to the applicant organization's SAM account. If not, the application may be deemed ineligible.
To begin the application process under this grant announcement, go to Grants.gov and click on "Applicants" on the top of the page and then "Apply for Grants" from the dropdown menu and then follow the instructions accordingly. Please note: To apply through Grants.gov, you must use Adobe Reader software and download the compatible Adobe Reader version. For more information about Adobe Reader, to verify compatibility, or to download the free software, please visit Adobe Reader Compatibility Information on Grants.gov.

You may also be able to access the application package for this announcement by searching for the opportunity on Grants.gov. Go to Grants.gov and then click on "Search Grants" at the top of the page and enter the Funding Opportunity Number, EPA-R5-GL2022-PC, or the CFDA number that applies to the announcement (CFDA **66.469**), in the appropriate field and click the Search button.

Please Note: All applications must be submitted through Grants.gov using the "Workspace" feature. Information on the Workspace feature can be found at the Grants.gov Workspace Overview Page.

APPLICATION SUBMISSION DEADLINE

Your organization's Authorized Organization Representative (AOR) must submit your complete application electronically to EPA through Grants.gov no later than 10:59 p.m. Central Time / 11:59 p.m. Eastern Time on **February 8, 2022**. Please allow for enough time to successfully submit your application process and allow for unexpected errors that may require you to resubmit.

Please submit *all* of the application materials described below using the Grants.gov application package accessed using the instructions above.

APPLICATION MATERIALS

The following forms and documents are required under this announcement:

MANDATORY DOCUMENTS

1. Application for Federal Assistance (SF-424)
2. Budget Information for Non-Construction Programs (SF-424A)
3. EPA Key Contacts Form 5700-54
4. EPA Form 4700-4 Preaward Compliance Review Report
5. Project Narrative (Project Narrative Attachment Form)
6. Other Attachments Form - Resumes or *curriculum vitae* of Principal Investigators and Critical Staff

OPTIONAL DOCUMENTS

7. Other Attachments Form - Negotiated Indirect Cost Rate Agreement
8. Other Attachments Form - Letters of Support
9. Other Attachments, if applicable

Applications submitted through Grants.gov will be time and date stamped electronically. If you have not received a confirmation of receipt from EPA (not from Grants.gov) within 30 days of the application deadline, please email GLRI-RFA@epa.gov with "EPA-R5-GL2022-PC" in the

subject line. Failure to do so may result in your application not being reviewed. All forms are available within the Workspace applicants generate in response to this opportunity in Grants.gov.

1. Application for Federal Assistance (SF-424)

Please complete the form. There are no attachments. Please note:

- Be sure to include the organization fax number and email address in Block 5.
- The contact person you provide in Block 8.f. should be different than the Authorized Representative listed in Block 21.
- The organizational Dun and Bradstreet (D&B) Data Universal Number System (DUNS) number must be included on the SF-424.

2. Budget Information for Non-Construction Programs (SF-424A)

Please complete the form. There are no attachments. Please note:

- The total amount of federal funding requested for the project period should be shown on line 5(e) and on line 6(k) of SF-424A.
- If indirect costs are included, the amount of indirect costs should be entered on line 6(j). The indirect cost rate (*i.e.*, a percentage), the base (*e.g.*, personnel costs and fringe benefits), and the amount should also be indicated on line 22. If indirect costs are requested, a copy of the Negotiated Indirect Cost Rate Agreement must be submitted as part of the application package.
- If the applicant proposes matching funds, the total amount of non-federal funding should be shown on line 5(f) and on line 6(k) of SF-424A.
- The budget section of the workplan must match the budget found in the SF-424A. See Appendix I for additional instructions on developing the budget section of the workplan.

3. Key Contacts Form (EPA Form 5700-54)

Please complete the form. There are no attachments. If additional pages are needed, attach these additional pages to the electronic application package by using the "Other Attachments Form" in the "Optional Documents" box.

4. Pre-Award Compliance Review Report (EPA Form 4700-4)

Please complete the form.

5. Project Narrative (Project Narrative Attachment Form)

This is the **only** file that should be submitted using the Project Narrative Attachment form.

The Project Narrative includes the summary information page; project design and workplan; maps, charts, and figures; programmatic capabilities and past performance; results; budget information; environmental and regulatory compliance information; and meeting/conference/workshop information.

The Project Narrative should include:

A. Summary Information Page (should not exceed one page):

Funding Opportunity Number. The RFA number is EPA-R5-GL2022-PC.

i. **Project Title.** Please limit to 60 characters. EPA reserves the right to change the project title for its administrative convenience.

ii. **Applicant Information.** Include applicant (organization) name, address, contact person, phone number, and e-mail address. *Do not include private information.*

iii. **Proposed Funding Request.** The total dollar amount requested from EPA. Make sure it is within the limits specified or your application will be rejected.

iv. **Project Duration.** Provide beginning and ending dates. See "Anticipated Start and End Dates" in Section II.

v. **Brief Project Description.** Summarize the proposed project in 100 words or less in a clear and succinct manner using PLAIN LANGUAGE, including expected outputs, outcomes and environmental benefits resulting from implementation of the project. Include environmental KEY TERMS that could be used as search terms (*e.g.*, water quality, toxins, mercury, *etc.*). Do not use acronyms. Should the proposal be selected, and a grant awarded, this description may be posted to the EPA Web. EPA reserves the right to make unilateral changes to conform to posting requirements. Examples can be found here.

vi. **Project Location.** Specify a single, representative project location within the Great Lakes basin, including 8- or 12-digit HUC code available here, and latitude and longitude specifying decimal degrees available here**, even if the work will be done at multiple locations or by applicants who are located outside the Great Lakes basin. Please include the reason for the location you identify if that is not self-evident.**

B. Workplan. The workplan for each proposed project **must** explicitly describe how the proposed project meets the guidelines established in Sections I-III of this RFA (including the threshold eligibility criteria in Section III) and **must** address each of the evaluation criteria set forth in Section V. Each Workplan should be organized in the order and with the headings and information requested below. Details and associated point values for each section of the workplan are described in RFA Section V (Application Review) below.

Applicants should describe with specificity the nature of the proposed project including what will be done, by whom, how, and when it will be accomplished. Outline the steps to be taken and the significant milestones to be achieved to complete the proposed project as well as the estimated dates of these achievements, including the submittal of the final report. Applicants should directly and explicitly address these criteria as part of their project narrative, budget narrative, and application submission:

SAMPLE COLLECTION AND PROJECT DESIGN

Applicants must describe their plans to collect phytoplankton and chl-a samples on all five Great Lakes in spring and summer, starting in spring 2022 through summer 2026. Applicants may request to use the EPA R/V *Lake Guardian* for sample collection. Current GLBMP sampling procedures can be found on the RFA site. Data for *in situ* measurements of chl-a fluorescence are currently collected as part of the EPA Great Lakes Water Quality Monitoring Program surveys; these data will be made available to the applicant for analysis.

In addition, applicants must describe how they intend to carry out intensive synoptic assessments of the phytoplankton community, biovolume, and distribution annually on the Cooperative Science and Monitoring Initiative (CSMI) intensive lake.

CSMI Schedule	
2022	Lake Huron
2023	Lake Ontario
2024	Lake Erie
2025	Lake Michigan
2026	Lake Superior

Applicants must describe how they intend to maintain comparability and continuity with historic sampling procedures. Applicants may suggest modifications to current GLBMP sampling procedures with supporting rationale. The supporting rationale should demonstrate how the different sampling procedures will still maintain continuity between historical data and the data collected as part of this project.

Phytoplankton Taxonomic Analysis and Biovolume Calculations

Applicants must describe their plans to identify, enumerate, and determine biovolume for phytoplankton. Applicants should document their taxonomic expertise and their capability to hire and train taxonomists. Applicants should demonstrate how they intend to maintain comparability and continuity of taxonomic analysis with historic identifications. Historic taxonomic species lists for phytoplankton and historic analytical techniques can be found in the SOPs posted at the RFA site.

Applicants may suggest modifications to historic taxonomic procedures[5] with supporting rationale. The supporting rationale should demonstrate how the different taxonomic procedures will still maintain continuity between historical data and the data collected under this project.

Once the award has been made and prior to the analysis of any phytoplankton samples, the award recipient will need to demonstrate comparability and consistency with existing species identification procedures.

Chlorophyll-a Analysis

Applicants must describe their plans to analyze water samples for extracted chl-a on board the R/V *Lake Guardian*. Applicants should demonstrate how they intend to maintain comparability and continuity of chlorophyll analysis with historic data sets. Historic analytical procedures can be found in the SOPs posted at the RFA site. During the first field survey of the project period, applicants will be required to comply with additional training and quality assurance checks under the supervision of EPA technical staff.

Applicants may suggest modifications to chlorophyll analysis with supporting rationale. The supporting rationale should demonstrate how the different analytical methods for chlorophyll determination will still maintain continuity between historical data and the data collected during this project.

Advanced Technology and Fluoroprobe Data Analysis

Applicants must describe their plans to pilot advanced technology approaches to estimate phytoplankton abundance and/or community composition, as well as their plans to compare and incorporate Fluoroprobe data into the phytoplankton monitoring outputs. Applicants should demonstrate how they will employ these datasets to supplement the historic monitoring program data that have included chl-a and phytoplankton taxonomic

[5]Species lists and historic analytical procedures are available in the current SOPs posted at the 2021 RFA for Great Lakes Biology Monitoring Program: Phytoplankton and Chlorophyll Components site.

analysis and biovolume calculations. Applicants should suggest how these analyses fit within their proposed budget, including any relevant information on sampling frequency, location, and depths within the water column for analysis using advanced technology approaches with supporting rationale. Fluoroprobe profile data are already collected at all GLBMP phytoplankton monitoring stations, but rationale should be provided for how these data (in total or for a subset of sites) will be used. The supporting rationale should demonstrate how the data from these analyses will supplement our other datasets and improve our understanding of Great Lakes phytoplankton communities.

Data Management

Applicants must describe their plans (and capability) to contribute to the management, maintenance, and future enhancements of comprehensive database for phytoplankton data. GLNPO will provide existing database structures as well as GLNPO phytoplankton taxonomic data from 1983 to 2021. The database should be able to incorporate historic data sets as well as data collected during this project.

Applicants may suggest modifications to the existing database structures with supporting rationale. The supporting rationale should demonstrate how different databases will maintain continuity between historical data and the data collected under this project and improve the applicant's ability to assess long-term trends in phytoplankton communities.

An electronic copy of all final verified data shall be transferred to GLNPO in a format that is consistent with data protocols specified in GLNPO SOPs (*e.g.,* Standard Operating Procedure for In Vitro Determination of Chlorophyll-a in Freshwater Phytoplankton by Fluorescence, Standard Operating Procedure for Phytoplankton Analysis).

Applicants must demonstrate how they will submit final verified data within 6 months for chlorophyll analysis, 18 months for advanced technology analysis, and 18 months of receipt of samples in their laboratory for phytoplankton taxonomic analysis and biovolume calculations (*e.g.*, submit data on all samples collected in August 2022 by March 2024). Applicants should also discuss project elements and processes that allow field and lab data to be efficiently managed and interpreted year-to-year.

Data Interpretation, Statistical Analysis, and Report Writing

Applicants must describe their plans to ensure the monitoring and assessment information generated is made available to the Great Lakes community in a wide variety of formats, including peer-reviewed journals and internet products. Applicants are expected to discuss how this dissemination will occur using data collected year-to-year, with a focus on fisheries and water quality managers. Additionally, it is important that any new information generated be placed in a historical perspective so that determinations may be made of how the phytoplankton community is changing over time. The successful

applicant is expected to integrate recent and historical data to provide interpretation of changes to the biological communities.

Applicants must demonstrate how they will work with the EPA Project Officer and Technical Contact to report on the status and trends of the phytoplankton community in the Great Lakes in a timely fashion and support the development of ecosystem indicator reports.

Applicants must also discuss how their work will increase understanding of the biological health of the Great Lakes and the implications for ecosystem and fisheries management. The advancement of scientific knowledge may include the development of phytoplankton community-based indicators, application of ecosystem models, identification of stressor-state relationships, and the further education of graduate students in taxonomy and Great Lakes ecosystem research.

Applied Research

Applicants must discuss how monitoring will be flexible enough to adequately track, monitor, and investigate:

- large scale changes of significant components of the Great Lakes lower food web that are affected by new species invading the Great Lakes;
- fluctuations of the state of the biological community; and
- phytoplankton responses to oligotrophication (decrease in offshore nutrient levels), global climate change, and the rates and mechanisms of herbivory.

Applicants must also discuss how additional special studies and/or enhancements to the long-term monitoring program will be implemented. Applicants must discuss how the monitoring design will contribute to the Cooperative Science and Monitoring Initiative (CSMI).

Page Limit

Narrative Proposals must be no more than 25 single-spaced pages in length, and include the items below, in the requested order. Excess pages will not be reviewed. Maps, charts, pictures, and other figures must be included in the Narrative Proposal file. They may be included within the body of the workplan or as an appendix to the Narrative Proposal. In either case those items ***will*** be counted against the 25-page limit for the Narrative Proposal. Applications may contain a Works Cited section, which ***will not*** be counted against the 25-page limit. Maps, charts, pictures, and other figures that are submitted as a separate attachment will not be reviewed.

The additional attachments (Other Attachment Forms 7-9) are not part of the Narrative Proposal and ***will not*** be counted against the 25-page limit.

PAGE FORMAT

Each Narrative Proposal must be formatted for 8½" x 11" paper and should use no smaller than an 11-point Times New Roman font with 1" margins. Do not use a "double column" (aka newspaper) format. **Readability is of paramount importance**. Do not include more than one application in any file. **Please do not zip the file or use a zip extension for your file because it will not be accepted.**

C. Collaboration: Describe the type of any collaboration/support proposed, how you will ensure that it will materialize during project performance, and what role it will play in the overall project. Any letters demonstrating evidence of collaboration and support from the public or private sector should be attached as part of Section IV, Application Materials. Describe how you will coordinate activities of the project with related or complementary projects and studies. IF YOU INTEND TO PROVIDE EPA FUNDS TO ANY COLLABORATING ORGANIZATION, PLEASE CAREFULLY REVIEW PROVISIONS ON "CONTRACTS AND SUBAWARDS" HERE.

D. Results: Outputs and Outcomes: Specify the estimated quantitative and qualitative expected results (outputs and outcomes) of the proposed project including but not limited to those specifically identified in Section I in support of the GLRI Action Plan III, Focus Area 5 (Foundations for Future Restoration Actions), Objective 5.2. Conduct comprehensive science programs and projects, and Measure 5.2.1 Annual Great Lakes monitoring conducted and used to prioritize GLRI funding decisions, and the approach and measurements that will be used to track and measure progress towards achieving the applicable outputs and outcomes. Demonstrate how the project will achieve the desired results. Provide a timetable or schedule with target dates projected for major tasks, accomplishments, and deliverables.

Include a statement of the project's relevance to the Great Lakes, particularly how the results will address the needs and priorities of the GLRI Action Plan III and/or the GLWQA.

E. Programmatic Capability and Past Performance: Submit a list (of no more than five) federally-funded assistance agreements[6] (including but not limited to previous GLRI awards from EPA or other federal sources) that your organization performed within the last three years (no more than five agreements, and preferably EPA agreements) and describe: (1) whether, and how, you were able to successfully complete and manage those agreements; and (2) your history of meeting the reporting requirements under those agreements including whether you adequately and timely reported on your progress towards achieving the expected outputs and outcomes of those agreements (and if not, explain why not); and whether you submitted acceptable final technical reports under the agreements. For all EPA grants listed, include the EPA Grant Number. In evaluating applicants under these factors in Section V, EPA will consider the information provided by the applicant and may also consider relevant information from other sources, including information from EPA files and from current and prior federal agency grantors (*e.g.*, to verify and/or supplement the information provided by the applicant).

NOTE: If you or your institution have previously received a GLRI award or awards, list the award(s) and provide the information described above. In addition, for EPA GLRI awards received from 2016 to 2020, please provide an explanation of and documentation supporting the quarterly rate of expenditure on those prior GLRI awards up through the date of the applicant's submission under this solicitation.

If you do not have any relevant or available past performance or past reporting information, please indicate this in the application and you will receive a neutral score for these factors (a neutral score is half of the total points available in a subset of possible points). ***IF YOU DO NOT PROVIDE ANY RESPONSE FOR THESE ITEMS, YOU MAY RECEIVE A SCORE OF 0 FOR THESE FACTORS.***

In addition, provide information on your organizational experience and plan for timely and successfully achieving the objectives of the proposed project, and your staff expertise/qualifications, staff knowledge, and resources or the ability to obtain them, to successfully achieve the goals of the proposed project.

Applicants should also demonstrate expertise in taxonomic identification and enumeration of Great Lakes phytoplankton using the methods proposed in their application. Demonstrated expertise should include publications in relevant scientific journals. Provide information on your organizational experience and your plan for timely and successfully achieving the objectives of the proposed project, and your staff, contractor, and subawardee expertise/qualifications, knowledge, and resources (or the ability to obtain them) to successfully achieve the goals of the proposed project. This

[6]Assistance agreements include federal grants and cooperative agreements, but not federal or other contracts

information should be supported by resumes or curricula vitae for key staff, contractor, and subawardee as defined in Section IV.

F. Detailed Budget Narrative: Applicants should clearly explain how EPA funds and any voluntary cost-shares will be used. For guidance, see Appendix I. Use this section to provide a narrative description of the budget found in the SF-424A. Applicants must itemize costs related to personnel, fringe benefits, contractual costs, travel, equipment, supplies, other direct costs, indirect costs, and total costs. Applicants should use whole dollar amounts. Applicants should include costs for quality system documentation (*i.e.*, quality assurance project plans or quality management plans) and environmental and regulatory compliance (*e.g.*, costs for assisting EPA with compliance by conducting surveys and analysis to identify whether protected resources are in the project location and, if so, whether there will be any effects; costs associated with potential mitigation measures; etc.). Applicants that do not include such costs may have to fund these and other overlooked costs out of their own funds.

As part of the detailed budget narrative, applicants should explain their approach, procedures, and controls for ensuring that awarded grant funds will be expended in a timely and efficient manner. Please include an explanation of expenditure projections, with quarterly fiscal projections and milestones, for the life of the grant.

See Appendix I – Budget Information for more detailed information.

6. Other Attachments Form - Resumes or Curriculum Vitae (required)

Please use the "Other Attachments Form" to attach a copy of the **resume or curriculum vitae of principal investigators and critical staff** for the proposed project. Such documentation should outline the education, work history, and knowledge/expertise of the individual that relate to managing the proposed project. Please include the word "resume" in the filename.

7. Other Attachments Form – Negotiated Indirect Cost Rate Agreement (optional)

This form is only required if indirect costs are included in your budget. You must submit a copy of your organization's Indirect Cost Rate Agreement as part of the application package if indirect costs are included in the project budget. Please use the "Other Attachments Form" to attach a copy of your organization's Indirect Cost Rate Agreement. Please include "IDC" in the filename.

8. Other Attachments Form – Letters of Support (optional)

Use the "Other Attachments Form" to attach any relevant letters from collaborators or partners in support of the project. A letter of support may also be required for voluntary cost share commitments. Specifically, indicate how the supporting organization will assist in the project or what that organization supports, as applicable.

No other types of letters of support will be considered in the review of the application. Please include "LOS" in the filename.

File Names

Please note that applicants are limited to using certain characters in all attachment file names. If applicants use any other characters when naming their attachment files their applications will be rejected by Grants.gov. **Valid file names may only include the following UTF-9 characters:** A-Z, a-z, 0-9, underscore (_), hyphen (-), space, period.

Once you have finished filling out all of the forms/attachments and they appear in one of the "Completed Documents for Submission" boxes, click the "Save" button that appears at the top of the Web page. It is suggested that you save the document a second time, using a different name, since this will make it easier to submit an amended package later if necessary. Please use the following format when saving your file: "Applicant Name – FY21 – Funding Opportunity – 1st Submission" or "Applicant Name – FY21 – Funding Opportunity – Back-up Submission." If it becomes necessary to submit an amended package at a later date, then the name of the 2nd submission should be changed to "Applicant Name – FY21 – Funding Opportunity– 2nd Submission."

Technical Issues with Submission

1. Once the application package has been completed, the "Submit" button should be enabled. If the "Submit" button is not active, please call Grants.gov for assistance at 1-800-518-4726. Applicants who are outside the U.S. at the time of submittal and are not able to access the toll-free number may reach a Grants.gov representative by calling 606-545-5035. Applicants should save the completed application package with two different file names before providing it to the AOR to avoid having to re-create the package should submission problems be experienced, or a revised application needs to be submitted.

2. Submitting the application. The application package must be transferred to Grants.gov by an AOR. The AOR should close all other software before attempting to submit the application package. Click the "submit" button of the application package. Your Internet browser will launch, and a sign-in page will appear. **Note: Minor problems are not uncommon with transfers to Grants.gov. It is essential to allow sufficient time to ensure that your application is submitted to Grants.gov BEFORE the due date identified in Section IV of the solicitation.** The Grants.gov support desk operates 24 hours a day, seven days a week, except Federal Holidays.

   A successful transfer will end with an on-screen acknowledgement. For documentation purposes, print or screen capture this acknowledgement. If a submission problem

occurs, reboot the computer turning the power off may be necessary and re-attempt the submission.

Note: Grants.gov issues a "case number" upon a request for assistance.

3. Transmission Difficulties. If transmission difficulties that result in a late transmission, no transmission, or rejection of the transmitted application are experienced, and following the above instructions do not resolve the problem so that the application is submitted to Grants.gov by the deadline date and time, follow the guidance below. The Agency will make a decision concerning acceptance of each late submission on a case-by-case basis. All emails, as described below, are to be sent to GLRI-RFA@epa.gov with "EPA-R5-GL2022-PC" in the subject line. If you are unable to email, contact Ben Alsip at 312-886-0988**.** Be aware that EPA will only consider accepting applications that were unable to transmit due to Grants.gov or relevant Sam.gov system issues or for unforeseen exigent circumstances, such as extreme weather interfering with internet access. Failure of an applicant to submit timely because they did not properly or timely register in SAM.gov or Grants.gov is not an acceptable reason to justify acceptance of a late submittal.

   If you are experiencing problems resulting in an inability to upload the application to Grants.gov, it is essential to call Grants.gov for assistance at 1-800-518-4726 before the application deadline. Applicants who are outside the U.S. at the time of submittal and are not able to access the toll-free number may reach a Grants.gov representative by calling 606-545-5035. Be sure to obtain a case number from Grants.gov. If the problems stem from unforeseen exigent circumstances unrelated to Grants.gov, such as extreme weather interfering with internet access, send an email to GLRI-RFA@epa.gov with "EPA-R5-GL2022-PC" in the subject line.

4. Unsuccessful transfer of the application package: If a successful transfer of the application cannot be accomplished even with assistance from Grants.gov due to electronic submission system issues or unforeseen exigent circumstances, and you have already attempted to resolve the issue by contacting Grants.gov, send an email to GLRI-RFA@epa.gov with "EPA-R5-GL2022-PC" in the subject line prior to the application deadline. The email message must document the problem and include the Grants.gov case number as well as the entire application in PDF format as an attachment.

5. Grants.gov rejection of the application package: If a notification is received from Grants.gov stating that the application has been rejected for reasons other than late submittal and it is too late to reapply, promptly send an email to GLRI-RFA@epa.gov with "EPA-R5-GL2022-PC" in the subject line within one business day of the closing date of this solicitation. The email should include any materials provided by Grants.gov and attach the entire application in PDF format.

   Note: successful submission through Grants.gov or via email does not necessarily mean your application is eligible for award.

V. APPLICATION REVIEW AND SELECTION

NOTE: ADDITIONAL PROVISIONS THAT APPLY TO THIS SECTION CAN BE FOUND AT EPA SOLICITATION CLAUSES.

A. APPLICATION REVIEW

Applications meeting the threshold eligibility criteria in Section III - Eligibility Information will be evaluated based on the criteria set forth below. Applicants should directly and explicitly address these criteria as part of their Project Narrative, budget narrative, and application submission. Further information and detailed instructions about Budget Information can be found in Appendix I.

REVIEW CRITERIA

Workplan -	72 points
Results -	12 points
Programmatic Capability and Past Performance -	22 points
Budget -	14 points
……	
Total -	120 points

WORKPLAN - 72 POINTS

Sample Collection and Project Design (14 points)
Applications will be evaluated based on the extent to which they:

(1) **4 points -** describe what work will be done, by whom, how, and when it will be accomplished;
(2) **2 points -** include a milestones table with significant achievements, deliverables, and date;
(3) 4 points - demonstrate how the proposed plans will effectively support the annual GLBMP and the CSMI to collect data, assess, and monitor status and trends of Great Lakes phytoplankton and chl-a; and
(4) **4 points -** demonstrate how the proposed plans will incorporate advanced technologies and *in-situ* fluorescence profile data to assess phytoplankton communities in the Great Lakes.

Phytoplankton Taxonomic Analyses and Biovolume Calculations; Chlorophyll-a Analysis; Advanced Technology and Fluoroprobe Data Analysis; and Data Management (36 points)
Applications will be evaluated based on the extent to which they demonstrate effective plans to:

(1) **2 points -** develop, implement, and maintain a Quality Assurance Project Plan (QAPP) that uses reliable and reproducible quality assurance and quality control measures (*e.g.,* training protocols for taxonomists, routine quality checks of taxonomic data, etc.). Please see the Quality Assurance Resources for GLRI Grantees website for more information;

(2) **10 points -** accurately identify and enumerate Great Lakes phytoplankton at all GLBMP phytoplankton stations; generate high-quality taxonomic data and biovolume calculations that are directly comparable to historical datasets at all GLBMP phytoplankton stations; hire and train taxonomists;
(3) **10 points -** generate high-quality extracted chl-a measurements that are directly comparable to historical datasets at all GLBMP phytoplankton stations;
(4) **8 points -** assess phytoplankton community structure using advanced technologies and *in-situ* water column fluorometer measurements at a subset of GLBMP stations, including at minimum all master stations;
(5) **4 points** - proactively and effectively manage large datasets; and
(6) **2 points** - submit final verified data to GLNPO within 18 months of sample collection for phytoplankton taxonomic analysis and biovolume calculations, and within 6 months for chlorophyll analysis.

Data Interpretation, Statistical Analysis, and Report Writing (6 points)
Applicants will be evaluated based on the extent they demonstrate effective plans to:
(1) **2 points -** integrate recent and historical data into reports and interpret changes in biological communities;
(2) **2 points -** submit progress reports, and contribute to EPA technical reports and State of the Great Lakes reports; and
(3) **2 points -** expediently provide monitoring and assessment information to Great Lakes stakeholders (local, state, and tribal environmental managers and the scientific community) in a wide variety of formats, including journal articles, annual interpretive reports, conference presentations, and internet products.

Applied Research (10 points)
Applications will also be evaluated based on the extent to which any proposed enhancements to the GLBMP and CSMI studies would address significant knowledge gaps and contribute needed information to resource managers investigating how phytoplankton communities are impacted by the following:

- the role of non-native species in large-scale changes to the Great Lakes lower food web;
- fluctuations in the state of the biological community on various temporal scales (*e.g.,* short-term, seasonal, interannual, long-term) and/or spatial scales (*e.g.,* nearshore-offshore, lake basin scale, whole lake scale);
- oligotrophication of offshore waters in Lakes Michigan, Huron, Erie (eastern basin) and Ontario, and the associated increases in water clarity;
- climate change; and
- rates and mechanisms of invertebrate and fish predations.

Collaboration (6 points)
Applications will be evaluated based on the extent to which they demonstrate how their approach to performing the project will promote collaborative efforts and generate support from other academic institutions or environmental monitoring programs.

RESULTS - 12 POINTS

The significance of environmental outputs and outcomes you expect to achieve will be considered under the evaluation criteria and must be addressed in the application.

Outputs (8 points)
Applications will be evaluated based on the extent to which they demonstrate:

- their ability to achieve the required outputs described in Section I;
- how the outputs will be achieved;
- effective plans for tracking progress towards achieving the outputs;
- how the project outputs support the GLRI Action Plan (Focus Area 5, Objective 5.2), EPA Draft FY 2022-2026 Strategic Plan (Goal 5, Objective 5.2), and 2012 GLWQA; and
- effective, innovative approaches towards achieving the outputs.

Outcomes (4 points)
Applications will be evaluated based on the extent to which they demonstrate:

- their ability to achieve the required outcomes described in Section I;
- how the outcomes will be achieved;
- effective plans for tracking progress towards achieving the outcomes;
- how the project outcomes support the GLRI Action Plan (Focus Area 5, Objective 5.2), EPA Draft FY 2022-2026 Strategic Plan (Goal 5, Objective 5.2), and 2012 GLWQA; and
- effective, innovative approaches towards achieving the outcomes.

PROGRAMMATIC CAPABILITY AND PAST PERFORMANCE - 22 POINTS

Under this criterion, applicants will be evaluated based on their ability to successfully complete and manage the proposed project considering the following:

i. **3 points** - past performance in successfully completing and managing the assistance agreements identified in response to Section IV of the solicitation;
ii. **3 points** - history of meeting the reporting requirements under the assistance agreements identified in response to Section IV of the solicitation, including whether the applicant submitted acceptable final technical reports under those agreements, the extent to which the applicant adequately and timely reported on their progress toward achieving the expected outputs and outcomes under those agreements, and if such progress was not being made whether the applicant adequately reported why not;
iii. **2 points** - organizational experience and plan for timely and successful achievement of the objectives of the proposed project;

iv. **8 points** – staff, subrecipient[13], consultant, and contractor[14] expertise/qualifications (as applicable), knowledge, and resources or the ability to obtain them, to successfully achieve the goals of the proposed project. Particularly, expertise in phytoplankton community ecology through previous publications relevant to the Great Lakes;

v. **4 points** - taxonomic expertise, qualifications, and proven ability to identify and enumerate Great Lakes phytoplankton, such as by providing a record of relevant publications; and

vi. **2 points** - Applications will be evaluated based on the extent to which they describe their history of expending funds in a timely, efficient manner, proportional to the rate of progress.

Note: In evaluating applications under items i, ii, and iii of this criterion, the Agency will consider the information provided by the applicant and may also consider relevant information from other sources including agency files and prior/current grantors (*e.g.*, to verify and/or supplement the information supplied by the applicant). If you do not have any relevant or available past performance or past reporting information, please indicate this in the application and **you will receive a neutral score for these subfactors** (items i and ii above-a neutral score is half of the total points available in a subset of possible points). **If you do not provide any response for these items, you may receive a score of 0 for these factors.**

BUDGET - 14 POINTS

Detailed Budget Narrative (10 points)

Applications will be evaluated based on the extent to which the budget section

- clearly and sufficiently describes and justifies the proposed budget;
- properly categorizes costs according to the Interim General Budget Development Guidance for Applicants and Recipients of EPA Financial Assistance;
- includes costs which are eligible, reasonable, allowable, necessary, and proportional to the proposed benefits;
- provides a sufficient narrative description of budget categories;

[13] Subrecipients will be evaluated if the applicant demonstrates that the subaward will be properly awarded consistent with the applicable regulations in 2 CFR Part 200 if an award is received. For example, applicants must not use subawards to obtain commercial services or products from for profit firms or individual consultants. EPA will not consider the qualifications, experience, and expertise of named subrecipients during the evaluation process unless the applicant complies with these requirements.

[14] Contractors will be evaluated if the applicant demonstrates that the contract will be properly selected and awarded consistent with in compliance with the competitive Procurement Standards in 2 CFR 200.317-326. For example, an applicant must demonstrate that it selected the contractor(s) competitively or that a proper non-competitive sole-source award consistent with the regulations will be made to the contractor(s), that efforts were made to provide small and disadvantaged businesses with opportunities to compete, and that some form of cost or price analysis was conducted. EPA may not accept sole source justifications for contracts for services or products that are otherwise readily available in the commercial marketplace. EPA will not consider the qualifications, experience, and expertise of named contractor(s) during the evaluation process unless the applicant complies with these requirements.

- accounts for both federal funds and any proposed non-federal funds (*e.g.*, any voluntary cost-share/match if applicable);
- adequately describes how any proposed non-federal funds will be accounted for; and
- clearly demonstrates the role EPA funding will play in the overall project.

Timely Expenditure of Awarded Grant Funds (4 points)

Applications will be evaluated based on:

- their approach, procedures, and controls for ensuring funds are expended in a timely and efficient manner; and
- the extent and quality to which they describe quarterly fiscal expenditure projections for the duration of the project.

B. SELECTION PROCESS

Applications will first be evaluated against the threshold factors listed in Section III. Only those applications which meet all of the threshold factors will be evaluated using the evaluation criteria listed above by a review panel composed of federal agency staff.

Final funding decisions will be made by the selection official. In making the final funding decision, the selection official will consider the review panel rankings and recommendations and may also consider program priorities.

VI. AWARD ADMINISTRATION

NOTE: ADDITIONAL PROVISIONS THAT APPLY TO THIS SECTION CAN BE FOUND AT EPA SOLICITATION CLAUSES.

A. AWARD NOTIFICATION

All applicants will be contacted following selection to notify them as to whether or not they have been selected. Selection information will also be posted to the RFA site.

EPA anticipates that notification to successful applicants will be made via telephone or electronic or postal mail by March 2022. The notification will be sent to the original signer of the proposal or the project contact listed in the proposal. This notification, which informs the applicant that its proposal has been selected and is being recommended for award, is not an authorization to begin work. The official notification of an award will be made by EPA Region 5 Grants Management Office. Applicants are cautioned that only a grants officer is authorized to bind the Government to the expenditure of funds; selection does not guarantee an award will be made. For example, statutory authorization, funding or other issues discovered during the award process may affect the ability of EPA to make an award to an applicant. The award notice, signed by an EPA grants officer, is the authorizing document and will be provided through electronic or postal mail. The successful applicant may need to prepare and submit additional documents and forms (*e.g.*, work plan), which must be approved by EPA, before the grant can officially be awarded. The time between notification of selection and award of a grant can take up to 90 days or longer.

B. COMBINING APPLICATIONS INTO ONE AWARD

If an applicant submits applications for multiple tasks/activities under this competition, and is selected for multiple tasks/activities, EPA may award a single assistance agreement that combines separate applications for different tasks/activities.

C. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENT

The successful applicants will be required to adhere to federal grants requirements, particularly those found in applicable Cost Principles (2 CFR Part 200 Subpart E), Administrative Requirements (2 CFR Parts 200 and 1500), and Audit Requirements (2 CFR Part 200 Subpart F). This includes government wide requirements pertaining to accounting standards, lobbying, minority, or woman owned business enterprises, publication, meetings, construction, and disposition of property. Additional EPA regulations are codified in Title 40 of the Code of Federal Regulations. A listing and description of general EPA regulations applicable to the award of assistance agreements may be viewed at EPA Policies and Guidance for Grants.

D. Quality System Documentation

Quality system documentation (*i.e.,* quality assurance project plans or quality management plans) is required for grants involving the use or collection of environmental data. EPA **must** have this documentation within 90 days of award and it **must** be approved **before grantees commence activities associated with the use or collection of environmental data**. Applicants should budget time and resources for developing quality system documentation. **Applicants that do not do so may have to fund the quality system documentation and any necessary project changes out of their own funds.** A significant percentage of EPA's previously awarded GLRI grants required quality system documentation. Please review specific guidance on GLNPO's quality requirements.

E. Reporting Requirements

Applicants selected for funding shall provide narrative technical progress reports addressing financial and work progress. Applicants will be required to submit data to GLNPO for incorporation into GLENDA or other taxonomic databases developed for the purpose of collecting and reporting information about GLRI. Special conditions requiring financial and progress reporting and a detailed final technical report will be added to awards. Applicants should budget time and resources for these activities.

NOTE: If selected, applicants may be asked to revise their anticipated fiscal expenditure projections on a quarterly basis in order to monitor the progress of the awarded project. These projections should be submitted as a part of the fiscal and technical reporting.

F. Other Programmatic Requirements

Additional applicable programmatic terms and conditions will be included in grant agreements, including provisions for: signage for on-the-ground projects, and conference participation. Applicants should budget time and resources for these activities.

VII. AGENCY CONTACTS

Please send any questions via email to GLRI-RFA@EPA.gov and **put "EPA-R5-GL2022-PC" in the subject of the email**. Please provide your full name and explain the reason for your email. Questions will be answered in the Q&A document at the RFA site.

GLNPO staff will respond to general inquiries, including administrative and eligibility-related questions.

Anne Scofield (Scofield.Anne@epa.gov), Life Scientist, will respond to technical inquiries about the Great Lakes Biology Monitoring Program: Phytoplankton and Chlorophyll-a Components (EPA-R5-GL2022-PC) funding opportunity.

APPENDIX I - BUDGET INFORMATION

The budget section of the workplan must match the budget found in the SF-424A. The budget section must include a detailed description of how EPA funds will be used. **Both** a budget narrative and budget table should be included in the budget section. Please refer to RAIN-2019-g02 for detailed budgetary guidance.

BUDGET NARRATIVE

The budget information must account for both federal funds and any non-federal funds (*e.g.*, any voluntary cost-share/match if applicable). Applicants must precisely describe in their budget narrative how they will account for any voluntary cost-share/match or other non-EPA funds and what role EPA funding will play in the overall project.

If applicable, applicants should include costs for quality system documentation (*i.e.*, quality assurance project plans or quality management plans) and environmental and regulatory compliance (*e.g.*, costs for assisting EPA with compliance by conducting surveys and analysis to identify whether protected resources are in the project location and, if so, whether there will be any effects; costs associated with potential mitigation measures; *etc.*). Applicants that do not include such costs may have to fund these and other overlooked costs out of their own funds.

Describe how the funds will be used, and why the costs are necessary to achieve the project objectives. List each item in sufficient detail for EPA to determine the reasonableness and allowability of its cost. **Only use whole dollar amounts and itemize** costs for each object class category:

Budget Object Class Categories:

- Personnel
- Fringe benefits
- Travel
- Equipment
- Supplies,
- Contractual costs
- Other direct costs
- Indirect costs; and
- Total costs

PERSONNEL

List all staff positions by title. Give annual salary, percentage of time assigned to the project, and total cost for the budget period. This category includes only direct costs for the salaries of those individuals who will perform work directly for the project (generally, paid employees of the

applicant organization). If the applicant organization is including staff time (in-kind services) as a cost share, this should be included as Personnel costs.

The budget detail must identify the personnel category type by (1) Full Time Equivalent (FTE), including percentage of FTE for part-time employees, (2) number of personnel proposed for each category, and (3) the estimated funding amounts.

Personnel costs do not include:

- Costs for services of consultants, contractors, consortia members, or other partner organizations, which are included in the "Contractual" category;
- Costs for employees of subrecipients under subawards, which are included in the "Other" category; or
- Any effort that is not directly in support of the proposed project, which may be covered by the organization's negotiated indirect cost rate.

FRINGE BENEFITS

Identify the percentage used, the basis for its computation, and the types of benefits included. Fringe benefits are allowances and services provided by employers to their employees as compensation in addition to regular salaries and wages. Fringe benefits include but are not limited to: the cost of leave, employee insurance, pensions and unemployment benefit plans.

TRAVEL

Specify the mileage, per diem, estimated number of trips in-State and out-of-State and international (include specific international locations), number of travelers, and other costs for each type of travel. Travel may be integral to the purpose of the proposed project (*e.g.*, inspections) or related to proposed project activities (*e.g.*, attendance at meetings).

Travel costs do not include:

- Costs for travel of consultants, contractors, consortia members, or other partner organizations, which are included in the "Contractual" category;
- Travel costs for employees of subrecipients under subawards, which are included in the "Other" category.

EQUIPMENT

The budget detail must include an itemized listing of all equipment proposed under the project. Equipment includes any items that cost $5,000 or more (per unit) and have a useful life of more than one year. Equipment also includes accessories necessary to make the equipment operational.

Equipment costs do not include:

- Items with a unit cost of less than $5,000.[7]
- Equipment planned to be leased/rented, including lease/purchase agreement; or equipment service or maintenance contracts. These types of proposed costs should be included in the "Other" category.

SUPPLIES

Supplies are all tangible personal property other than equipment. The budget detail should identify categories of supplies to be procured (*e.g.*, laboratory supplies or office supplies).

Supplies do not include:

- Non-tangible goods and services associated with supplies, such as printing service, photocopy services, and rental costs. These should be included in the "Other" category.

CONTRACTUAL

Identify each proposed contract and specify its purpose and estimated cost. Contractual/consultant services are those services to be carried out by an individual or organization, other than the applicant, in the form of a procurement relationship. The applicant should list the proposed contract activities along with a brief description of the scope of work or services to be provided, proposed duration, and proposed procurement method (competitive or noncompetitive), if known.

Contractual costs do not include:

- Leased or rented goods (equipment or supplies). These costs should be included in the "Other" category.

See the Procurement Standards in 2 CFR 200.317-326 for more information.

OTHER

This category should include only those types of direct costs that do not fit in any of the other budget categories. Examples of costs that may be in this category are: insurance, rental/lease of equipment or supplies, equipment service or maintenance contracts, printing or photocopying, rebates, and subaward costs.

Subawards (*e.g.*, subgrants) are a distinct type of cost in this category. The term "subaward" means an award of financial assistance (money or property) by any legal agreement made by the recipient to an eligible subrecipient. This term does not include procurement purchases, technical assistance in the form of services instead of money, or other assistance in the form of revenue sharing, loans, loan guarantees, interest subsidies, insurance, or direct appropriations.

[7] These items should be categorized as supplies, pursuant to 2 CFR 200.33.

Subcontracts are not subawards and belong in the contractual category. Applicants must provide the aggregate amount they propose to issue as subaward work and a description of the types of activities to be supported.

INDIRECT CHARGES

If indirect charges are budgeted, indicate the approved rate and base. Indirect costs are incurred by the grantee for a common or joint purpose and benefit more than one cost objective or project. Indirect costs are not readily assignable to specific cost objectives or projects as a direct cost.

In order for indirect costs to be allowable, the applicant must have a federal or state negotiated indirect cost rate (*e.g.*, fixed, predetermined, final or provisional), or must have submitted a proposal to the cognizant federal or state agency.

Examples of Indirect Cost Rate calculations are shown below:

- Personnel (Indirect Rate x Personnel = Indirect Costs)
- Personnel and Fringe (Indirect Rate x Personnel & Fringe = Indirect Costs)
- Total Direct Costs (Indirect Rate x Total direct costs = Indirect Costs)
- Direct Costs minus distorting or other factors such as contracts and equipment (Indirect Rate x (total direct cost – distorting factors) = Indirect Costs)

Expeditious Spending and Sufficient Progress in the use of GLRI Funds

As part of the detailed budget narrative, applicants **must** explain their approach, procedures, and controls for ensuring that awarded grant funds will be expended in a timely and efficient manner. Include quarterly fiscal expenditure projections for the duration of the project.

EXAMPLE BUDGET TABLE

Object Class Category	EPA Funding
TOTAL PERSONNEL	$244,000
Project Staff @ $30/hr x 40 hrs/week x 40 wks	$244,000
TOTAL FRINGE BENEFITS	$48,800
15% of Salary and Wages	$36,600
Retirement, Health Benefits, FICA, SUI	$12,200
TOTAL TRAVEL	$610,300
In-State travel: 500 mi/mo @ $0.55/mi x 12 mos.	$3,300
Out of State Travel: 20 trips per month x $1,250 per trip x 2 years	$600,000
Meeting Travel for Project Manager: 2 trips/year x $3,500 each x 2 years	$14,000
TOTAL EQUIPMENT	81,100
Transducer, coupling, and software package	$25,700
Electrofishing boom shocker (2 x $7,500each)	$15,000
1 Project Vehicle	$25,000
1 Project Boat	$15,400
TOTAL SUPPLIES	$2,900
Office and related supplies to support training	$400
Office computer and printer	$2,500
TOTAL CONTRACTUAL	$166,400
ABC Support Services Contract	$10,000
XYZ Land & Water Conservation	$156,400
TOTAL OTHER	$409,600
Subaward agreement ABCD to implement XX activities	$399,600
Equipment Insurance	$10,000
TOTAL INDIRECT	$26,480
Federal Negotiated Indirect Cost Rate = 10% (Indirect Rate x Personnel = Indirect Costs; as negotiated)	$26,480
TOTAL FUNDING	$1,589,580

OTHER BUDGET REQUIREMENTS

RESTRICTIONS ON USE OF FEDERAL FUNDS

All costs incurred under this program must be allowable under 2 CFR Part 200 Subpart E. In accordance with applicable law, regulation, and policy, any recipient of funding must agree to comply with restrictions on using assistance funds for unauthorized lobbying, fund-raising, or political activities (*i.e.*, lobbying members of Congress or lobbying for other federal grants, cooperative agreements, or contracts). For example, see 2 CFR 200.450.

Funds generally cannot be used to pay for travel by federal agency staff. Proposed project activities must also comply with all state and federal regulations applicable to the project area. The applicant must also review the solicitation for any other programmatic funding restrictions applicable to this program.

If awarded funding, the recipient must refer to the terms and conditions of its award for other funding restrictions applicable to its award. It is the responsibility of the recipient to ensure compliance with these requirements.

PRE-AWARD COSTS

In accordance with 2 CFR 200.458, pre-award costs are allowable only to the extent that they would have been allowable if incurred after the date of the Federal award. Eligible pre-award costs may be incurred at the start date of the project period and not the award date. **EPA does not guarantee the payment of pre-award costs.** Applicants incur pre-award costs at their own risk and EPA is under no obligation to reimburse applicants for pre-award costs.

Under certain circumstances, the applicant may be reimbursed for eligible, allowable, allocable, and reasonable costs that are incurred up to 90 days before grant award without prior EPA approval if:

1. The applicant includes the pre-award costs in its proposal and the workplan negotiated with EPA;
2. EPA agrees that the costs are eligible and allowable when the Agency approves the scope of work for the grant; and
3. Any procurement contracts that are funded with pre-award costs comply with the competitive procurement requirements within the grant.

Please note an applicant **must obtain prior EPA approval from the Award Official to incur pre-award costs more than 90 days before award**. Applicants selected for award will need to discuss any pre-award costs incurred greater than 90 days before award with their EPA Project Officer to discuss the process for getting these costs approved.

COST SHARE

Any voluntary cost-share funds, while not required under this RFA, must also be included in the SF-424A. Please identify the source of the cost share in your budget narrative; federal funds **cannot** be used for cost share.

If the project budget includes any voluntary cost share, include a detailed description of how you will obtain the cost-share and how the cost-share funding will be used. If EPA accepts an offer for a voluntary cost-share, applicants must meet their sharing commitment as a legal condition of receiving EPA funding. A letter of commitment is required if the proposed cost-share is to be provided by a third-party. Any form of cost-share included in the Budget Detail must also be included on the SF-424 and SF-424A.[8]

MANAGEMENT FEES

The rules for including management fees and similar charges can be found at EPA Solicitation Clauses.

[8] See also 2 CFR 200.306 for more information about cost sharing or matching.